A DECOLONIAL STUDY OF INDIGENOUS TEACHING AND LEARNING METHODS OF KNOWLEDGE TRANSFER IN GABON'S RURAL COMMUNITIES

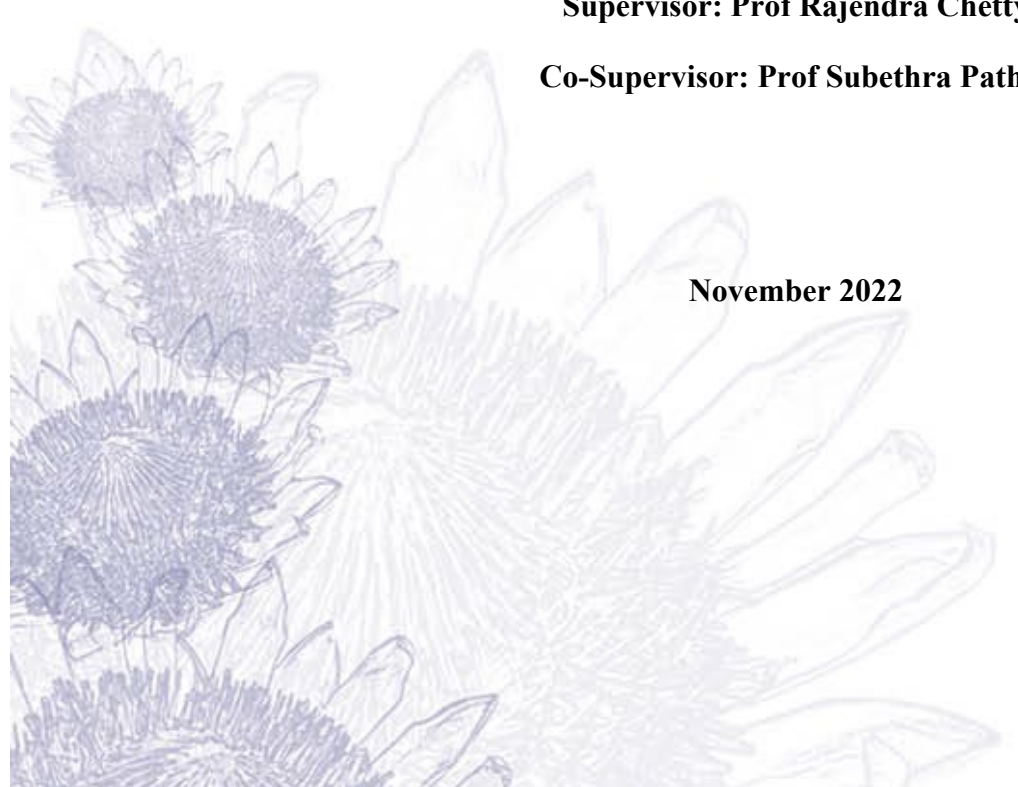**FRANCK SANDRY BINZE BI KUMBE**

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THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE FACULTY OF EDUCATION

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DECLARATION

I, Franck Sandry Binze Bi Kumbe, declare that the thesis *A Decolonial Study of Indigenous Teaching and Learning Methods of Knowledge Transfer in Gabon's Rural Communities* is my personal work and has not been submitted for degree or examination in any other university. All sources I have cited or quoted have been indicated and fully recognised by a complete list of bibliographical references.

I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that is one's own. Therefore, each significant contribution to this thesis is my own interpretation. I therefore declare that this thesis is my own work.

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ABSTRACT

Gabon is a country with an important ancestral cultural heritage that constitutes a set of epistemological and ontological systems that can be traced back to the 15th century. Europeans, with their colonising mission, wrongly presumed that African indigenous people were ignorant and uneducated. Thus, Gabon remains one of the sub-Saharan countries where access to education and forms of knowledge is exclusively established on the Western hegemonic knowledge system. This study demonstrates how indigenous knowledge contributes to education in Gabon via the implementation of indigenous teaching and learning methods of knowledge transfer. The theoretical framework underpinning the present study is based on decolonial theory as conceptualised for research in the humanities, social sciences, and education. Qualitative methodological approaches were used to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge within Gabon's rural communities. Research instruments for data collection were observation, interviews, and focus-group discussions. Fifteen villagers (indigenous trainers and trainees) from the village of Kery were involved as main participants in the study. Data collection took place in Kery, but data comparison and verification took place in the village of Inguendja with occasional participants. A descriptive-interpretative approach was used to analyse the data. Findings mainly elicit information on how rural people transfer knowledge and the impact of indigenous knowledge on education in rural communities.

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KEYWORDS

Ancestral Cultural Heritage

Decolonial Theory

Indigenous Education

Indigenous Knowledge

Knowledge Transfer

Rural Communities

Teaching and Learning

DEDICATION

I dedicate this thesis to my wife Merlye Schinere Binze Bi Kumbe, who gave me the courage to start and the determination to complete this work.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIK	African Indigenous Knowledge
AIKS	African Indigenous Knowledge Systems
CMP	Colonial Matrix of Power
EEML	École d'État-Major de Libreville
ENI	École Normale des Instituteurs
ENS	École Normale Supérieure
ETF	Education Task Force
GOALP	Gala Open Access Learning Platform
HSSREC	Humanities and Social Sciences Research Ethics Committee
IGAD	Institut Gabonais d'Appui au Développement
IK	Indigenous Knowledge
IKS	Indigenous Knowledge Systems
IPN	Institut Pédagogique National
ITE	Initial Teacher Education
KZN	Kwa-Zulu-Natal
MSC	Michigan Sustainability Cases
PABM	Provitamin A-Biofortified Maize
REFRESCH	Research Fresh Solutions to Energy, Water, and Food Challenges in Resource Constrained Environments
RCFE	Research Committee of the Faculty of Education
RISE	Research Institute in Sustainability and Education
SHDC	Senate Higher Degrees Committee
UMTC	University of Michigan's Third Century
UWC	University of the Western Cape
WHO	World Health Organization

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CHAPTER 1:
INTRODUCTION

1.1 Background to and rationale for the study

Teaching and learning systems can be observed where there are organised societies or communities. Indeed, organised communities create and develop an education system to serve their specific needs. In Africa, the prevalent education during the pre-colonial period was generally known as African traditional education or indigenous education (Adeyemi & Adeyinka, 2003). But Western colonial forces, over many centuries, have spread the idea that African indigenous people are barbarian populations, savages and pagans with no history or culture to transmit. In other words, they lack an education system (Mazonde, 2001; Seroto, 2011).

In line with this, Sinha (2021) states that Western anthropological studies have shown spectacular images of exotic primitives and noble savages in depicting indigenous people and communities. These images or descriptions of indigenous people are erroneous and produce alienating, dehumanising and stigmatising effects. Additionally, this has impacted the very methodological and theoretical foundations of anthropology and other social sciences and humanities (Sinha, 2021).

The non-education of indigenous people that has been spread wrongly by Europeans is well demonstrated by Tuhiwai Smith (1999:78-80). Tuhiwai Smith (1999) draws on Edward Said's *Orientalism* to demonstrate that this description of indigenous people and their education systems was done by colonialists through travellers' and observers' testimonies based on simple impressions. At the time of the conquest of territories, the representation of the conquered people was frequently derogatory. It is in this context that the comments on African indigenous people and their manners have been made by travellers and observers. The stories of the latter have been accepted as universal truths (Wilson, 2001:215). In other words, the colonisers' accounts of indigenous people were legitimated according to the imperialist opinion as the representation of the other, and this generated popular prejudices towards indigenous people (Sapalo, 2019:28).

Mudimbe (1985:181) noted that colonialists and imperialists believed that they were superior human beings and they should bring civilisation to the uncivilised people in the colonies. They felt paternal responsibility to put in place a 'civilised' education (Bain, 2003). Similarly,

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Mamdani (1996:4) stated that colonialists and imperialists saw themselves as providers of supervision and guidance to the indigenous people. In this sense, indigenous education was considered an aberration. This assumption on indigenous education was highlighted and supported during the colonial era in order to devalue indigenous culture and knowledge, and to halt an African vision of the world by putting in place a Western hegemony or Western domination for the benefit of European imperialism (Bernstein, 1990). To illustrate this reality, Magga (2004:5) gave a personal account, testifying that he himself had once been an indigenous child. Although young, he was already experiencing the effects of the colonisation of education. When he arrived for the first time at a Western school, with a rich indigenous cultural background, he discovered that he did not even have a basic education in the western sense of the word. On that first day he discovered that the teachers did not speak his language, and he could not speak his own language without being punished.

Magga (2004:5) also explained that the teachers knew nothing of his culture, particularly the customs of politeness and ethics. Indeed, when the teachers said, 'Look at me when I speak to you,' he was confused because in his culture it was insolent to look adults in the eye. The most difficult for him was when he reached high school; many of his indigenous brothers and sisters dropped out, and the teachers said he was different from his brothers and sisters. But in his heart, he knew that he was like them.

Over the past two decades scholars and researchers, mainly in developing countries in Africa, South America, and Asia, have begun to understand the imperative of speaking about and promoting indigenous education in order to restore the scientific balance around knowledge in the social sciences and humanities. Indigenous education can be understood as the insertion of indigenous knowledge, models, methods, and content within formal and non-formal educational systems (May & Aikman, 2003). In the postcolonial context, the growing recognition and the use of indigenous education methods can be a response to the degradation and loss of indigenous knowledge and languages through the processes of colonisation, globalisation and modernisation (May & Aikman, 2003). As such, change may be brought into African studies that were largely separated from their cultural, linguistic, economical, socio-political, and environmental sense. Hence in some African countries, there are efforts at reforming school teaching and learning programmes by including indigenous knowledge as important sources of knowledge as opposed to the dominant Western paradigms (Magara, 2015; Badat, 2017).

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It is within this perspective that this study focuses on indigenous teaching and learning methods of knowledge transfer in order to contribute to the valorisation of indigenous knowledge and education in the particular case of Gabon. In fact, it is time to foster a new education system on the African continent and in the Global South. This new education system includes the integration of local experts into formal systems of knowledge and the inclusion of traditional knowledge, ways of knowing, and local sciences in primary and secondary school as well as indigenous cultural heritage in curricula and pedagogies of universities. It is in this context that Mignolo (2017) calls for decolonising knowledge through the decolonisation of pedagogy, ontology, curricula, research, and all other crucial practices of the transformation of the education system, in order to restore equity and social justice.

In Gabon, this call has not taken root. The reason is that indigenous knowledge is not yet highlighted as a valued source of knowledge. Even in local academic and research institutions, indigenous education is not particularly promoted. Gabon still unfortunately continues to face what Shava and Manyike (2018:44) decry: that many Africans who have been trained in the West think that traditional education is not education.

As an anthropologist, my own engagement in indigenous education began when I was studying indigenous medicine for my master's thesis in anthropology at Omar Bongo University in 2011, and later when I worked at the University of Michigan's Third Century (UMTC) projects (RISE[1] and GOALP[2]) as researcher and facilitator in 2016. In the frame of education, my work across UMTC projects included:

1) Teaching rural communities how to treat water by using ceramic water filter technology.
2) Discussing with rural communities in terms of maintaining or preserving this practice or knowledge in order to address drinking water scarcity.
3) Translating case studies to implement with teams of educators or community members in Gabon, to foster dialogue, knowledge transfer, and exchanges between the research team, teaching professionals and the local populations.

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[1] RISE (Research Institute in Sustainability and Education) is a project at the University of Michigan to improve sustainability and education in Gabon, particularly in rural Gabon. RISE is located in Lambaréné, Gabon, and is destined to replace the REFRESCH Project.

[2] GOALP (Gala Open Access Learning Platform) is a platform from Michigan Sustainability Cases (MSC) at the University of Michigan, containing case studies throughout the world about environment, ecology, education, etc.

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The current doctoral project builds on those experiences, which will essentially investigate how knowledge is transferred in rural communities. The purpose is to engage in-depth with the concept of knowledge transfer according to indigenous people themselves. I shall start, for example, by evaluating, in the sense of preserving or perpetuating practices or technologies, how rural or indigenous people have succeeded to transfer among themselves what they have learned from RISE researchers. What are the methods and materials they used in the process of transferring this knowledge?

1.2 Problem statement

According to Adjoï-Obengui (2014:4), the colonialist Catholic missionaries, when arriving in Gabon, testified that the Gabonese were aware of the notion of divinity. The Gabonese had several religions, among others, Bwiti, Ndjobi, Ndjembè, and Mwiri. These local religions also accounted for indigenous schools. Bwiti particularly is an ancestral religion that was created by the Pygmies of Gabon. The Bantu peoples adopted this religion and spread it throughout Central Africa (Laval-Jeantet, 2004:52). This religion advocates a philosophy of the liberation of the spirit and is the most traditional religion accounted for the most popular indigenous forms of schools in Gabon. This means that the indigenous school had existed long before colonisation. Evident is that at this time the indigenous school was the main form of access to education in Gabon.

The problem is that numerous studies have been done in Gabon in various fields of social sciences such as anthropology, ethnolinguistics, sociology, and ethnohistory. However, there is no record of a study dealing with indigenous education, and more specifically on indigenous teaching and learning methods regarding the process of knowledge transfer. There is limited research in this area.

It is vital to preserve indigenous knowledge as well as to valorise indigenous schools in Gabon and investigate how Gabon's indigenous people are engaged in indigenous education. It is to address this gap that this study explores indigenous methods of teaching and learning related to the processes of transferring knowledge. This study contributes to the integration of indigenous knowledge practices in the process of accessing education, particularly with regard to the recognition of indigenous methods of teaching and learning in science education.

The study draws on the rural areas where indigenous knowledge and its associated systems still play an indispensable role in the resolution of many of life's issues within communities.

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The strategies and techniques used in any resolution of rural communities' problems constitute the base from which this study seeks to investigate indigenous methods in education.

1.3 Research questions

The main research question of this study is:

What is the nature of the indigenous teaching and learning methods of knowledge transfer in Gabon's rural communities?

The sub-questions are:

1   What indigenous teaching and learning methods are used in rural communities for knowledge transfer?
2   What is the impact of those methods on indigenous people?
3   What do indigenous people think about their methods in comparison to Western methods?
4   What do indigenous people think about the impact of those methods in education and sustainability?
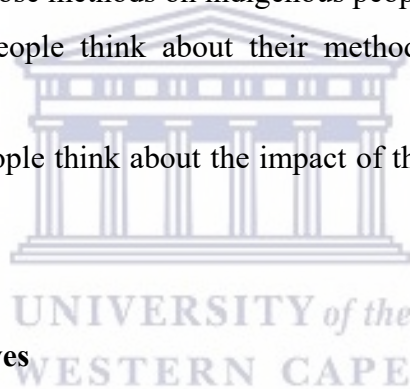
1.4 Research aim and objectives

The main aim of this study is to determine the effectiveness of the indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. The specific objectives are to:

1   investigate the use of indigenous knowledge and its associated systems in the process of knowledge transfer in rural communities;
2   explore outcomes of indigenous teaching and learning methods in the process of producing knowledge and education;
3   explain indigenous education in Gabon through demonstrating that indigenous knowledge is a source of knowledge; and
4   justify the need for decolonising knowledge and/or education in Gabon.

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1.5 Significance and contribution of the study

The study contributes to documenting indigenous knowledge in order to preserve and value traditional culture and/or indigenous teaching and learning methods. I attest that indigenous knowledge, including all aspects and practices that it contains, is a pillar of sustainable development in Gabon. As such, this study brings insights into decolonising basic and higher education in Gabon. Thus, this study should be important to the Ministry of National Education and the Ministry of Higher Education in Gabon.

Additionally, this study contributes to local literature about indigenous teaching and learning methods. The most significant aspect of this study deals with the need for decolonising knowledge through integrating indigenous knowledge into the education system with regard to pedagogical and ontological innovations; this may interest all Gabonese scholars who focus on educational studies and on the issue of decolonisation.

1.6 Organisation of the study

This work is divided into seven chapters. The content of each chapter is summarised as follows:

Chapter 1 introduces the subject of this study. This introduction provides the background to and rationale for the study. Attention is paid to indigenous education that has been silenced by colonialism and neo-colonialism, and the research focuses on the need for decolonising knowledge and education systems in indigenous societies. This is followed by a problem statement, research question and sub-questions, as well as the research aim and objectives. The chapter also outlines the significance and contribution of this study. The introductory chapter ends with the organisation of the study.

Chapter 2 comprises the literature review. The literature review is categorised into four principal themes. The first theme reviews the definition of indigenous knowledge, specifically its conceptualisation and how it is applied. The second theme reviews the concept of decolonisation with particular regard to education. It considers the definition of the term 'decolonisation' and the call for decolonising education. The third theme concerns indigenous methods of teaching and learning in the process of knowledge transfer, while the fourth theme focuses on the particular case of Gabon.

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Chapter 3 presents the theoretical framework of this study. The chapter highlights the theoretical underpinnings of this study. The chapter discusses decolonial theory that draws on three complementary approaches: those of Mbembe, Mignolo, and Tuhiwai Smith.

Chapter 4 discusses the research methodology. This chapter is divided into four components. The first part is the research approach that is characterised by qualitative methodologies and the research design which is based on the case-study approach. The second part concerns sampling: the number of participants, the procedures related to the participants' selection, and the research context. The third part focuses on the data collection. The focus is essentially on the methods of collecting the data and the data-collection instruments. The fourth part presents ethical considerations which mainly deal with participant consent to be enrolled in this research.

Chapter 5 presents the data collected and deals with the findings of the study. The data collected was categorised into themes. The descriptive-interpretive analysis approach draws on the system of categorisation.

Chapter 6 focuses on the interpretation of the data. The chapter contains eight sections. Each section represents a major point of the findings. In summary, the findings report on the role of indigenous knowledge in rural communities, particularly in the context of education. The focus is specifically on indigenous pedagogies, thus providing justification for decolonising knowledge and education in order to contextualise the education systems.

Chapter 7 concludes and summarises the study. It essentially highlights the link between the problem statement, the research questions, the research aim and objectives, and the findings of the research study. The chapter provides recommendations emanating from the study and ideas for further research.

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CHAPTER 2:
LITERATURE REVIEW

2.1 Introduction

The chapter discusses the conceptualisation and application of indigenous knowledge and the significance of decolonising knowledge and/or education. Another part of the literature review concerns the description of indigenous teaching and learning methods of knowledge transfer. It also briefly presents the particular case of Gabon. Globally the literature review draws on theoretical foundations of indigenous education, mainly indigenous pedagogies as a form of a decolonial knowledge transfer system.

The goal of the literature review is to consider indigenous education through indigenous knowledge practices, which have always been at the foundation of African philosophy. Indigenous knowledge practices play a vital role in terms of enhancing rural livelihoods and sustainability in developing countries as illustrated in the 2017 study, 'Chemistry practices in the Vhavenda indigenous society' (Mammino & Tshiwawa, 2017).

This literature review discusses findings from the Global South (developing countries) on the characteristics of knowledge and/or education in the era of post-colonialism. This literature review points to the appraisal of indigenous knowledge in the process of teaching and learning. In other words, the literature review consists of appraising the indigenous pedagogies in the process of knowledge transfer in rural communities.

2.2 Indigenous knowledge: conceptualisation and application

2.2.1 Conceptualisation

Many authors use the terms 'indigenous knowledge' (IK) and 'indigenous knowledge systems' (IKS) in the same text to mean the same thing, even if the terms are used in different activities or fields (Khupe et al., 2016). In the context of African communities, scholars in indigenous knowledge use the terms 'African indigenous knowledge' (AIK) and 'African indigenous knowledge systems' (AIKS) to refer to the same thing (A-Magid, 2011). Nande (2016:142) noted that indigenous knowledge is an all-inclusive knowledge that covers technologies and practices. Indigenous people, for their existence in and adaptation to multiform milieus and circumstances, use these technologies and practices. Ncube (2018:93) points out that such

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knowledge is not static. Thus, this knowledge evolves and changes as it develops. This knowledge influences and is influenced itself by both internal and external circumstances and interactions with other knowledge systems.

This knowledge covers content and contexts such as agriculture, architecture, engineering, mathematics, governance and other social systems and activities, medicinal and plant varieties, etc. Mugwisi (2017:160) notes that the definition of indigenous knowledge is largely conceptualised. This is partly due to various perspectives of authors ranging from the discipline that frames the study to the object of study. As Masalu et al. (2010:4) note, a diversity of terms is used to describe indigenous knowledge. These terms include traditional knowledge, rural knowledge, local knowledge, indigenous traditional knowledge, indigenous technical knowledge, traditional environmental knowledge, and traditional ecological knowledge. Accordingly, Ncube (2018:93) presents indigenous knowledge as local knowledge, indigenous people's knowledge, traditional science, folk knowledge, and traditional wisdom.

This knowledge is passed on from generation to generation, usually through word of mouth and cultural rituals. In the perspective developed by Masango and Nyasse (2015:54), indigenous knowledge is understood as the knowledge orally handed down from one generation to the next. That is, it is exchanged from parents to children or from patriarchs to young people through personal communication. This exchanging frame is what Mpofu and Miruka (2009:86) describe as an environment characterised by the existence of strong social capital. Social capital can be understood as a set of traditional values that are used for the good functioning of the community. Those traditional values constitute the foundation of the indigenous community's life (Mpofu & Miruka, 2009).

For many centuries and in many parts of the world, indigenous knowledge has been the basis for agriculture, food preparation, healthcare, education, conservation and the wide range of activities that sustain a society and its environment (Mvenene, 2017:101). Furthermore, Sillitoe (2000:4) describes indigenous knowledge systems as a set of a variety of skills which are acquired orally through experience and repetitive practices. Morris (2005) adds that these skills or knowledges include ceremonies, customs, dances, music, beliefs, oral history, and living history. Thus, indigenous knowledge systems contrast with the international knowledge system generated by universities, research institutions, and multinationals or international organisations (Flavier et al., 1995).

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Nel (2006:99) defines indigenous knowledge systems as follows:

> Indigenous knowledge systems are the knowledge and practices of indigenous communities that constitute their values and beliefs systems, as well as the basics of their customs. Indigenous knowledge systems are about traditional knowledge, ways of knowing and transmitting, and ways of existing of communities for centuries. Indigenous knowledge systems refer to a set of knowledges which include practices of culture, customary law, agriculture, medicine, bio-diversity, ethno-numeracy. It also includes the rationality of these cultural practices and rites that affects social cohesion, creativity and artistry of music and dance, variety of technologies, and spirituality that unites cosmos and being in a holistic manner.

IK and IKS essentially constitute the same thing. However, IK or IKS refer to a system that is inclusive. It contains many types of knowledges that include various activities, techniques or practices (Mpofu & Miruka, 2009:85). What is evident is that these activities or practices are considered as systems when taken individually.

According to Richards and Schmidt (2002), a system can be described as an organisation in which all the different elements involved are identified. Their interactions are analysed and studied. The system is seen as composed of elements that work together as an integrated system, so that changes in one element affect other aspects of the system (Richards & Schmidt, 2002:537). In simple terms, IK or IKS is characterised by systems that overlap, interact or inter-penetrate. It is in this context of plurality of interconnected systems that some scholars prefer the term IKS instead of IK.

Therefore, the idea of using similarly or simultaneously IK and IKS is not necessarily confusing. In this thesis, indigenous knowledge is considered in its natural aspect, which is already systemic and plural as demonstrated earlier. Hence, IK is the term used in this thesis. However, the expression IK and its associated systems are used in this study to refer specifically to the plurality of interconnected systems diagnosed above.

2.2.2 Indigenous knowledge application

2.2.2.1 General view

The current section poses the enquiry of indigenous knowledge application. It shows domains in which indigenous knowledge can be integrated. As the concept suggests, indigenous

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knowledge is at the centre of the lives of indigenous communities where traditional values and philosophy constitute the foundations of any political, social, economic, religious, and cultural organisation. Aspects such as these are mostly observed in developing countries. Ngulube and Lwoga (2007:117) concur that indigenous knowledge is key to the development of sub-Saharan Africa and the conservation of its societal memory.

A number of scientific studies have been conducted on the application of indigenous knowledge across disciplines and the geographical divide. Rukema (2015:140) explored the approaches of indigenous communities to peace-making and conflict resolution. He sought to determine through a case study of Msinga villages in the Kwa-Zulu-Natal (KZN) province of South Africa, whether the government's actions are concomitant with local knowledge of peace-making and conflict resolution. He demonstrated that many peace-making and conflict resolution initiatives were not sufficient to bring peace and unity to communities.

Rukema (2015:138) revealed mistrust between members of these communities to the extent that any tension can lead to violence. The governmental approaches inspired by Western methods of conflict resolution (regarding the history of the country that shows how the governance model has been based on Western methods since the period prior to independence) are not adaptable to the local situation. This example helps us to understand that sometimes we have to mistrust the use of exogenous research approaches to study an indigenous phenomenon, especially in an indigenous environment. We have to ensure the effective participation of indigenous people when studying indigenous practices.

Nel (2006:105) presented the important role of indigenous knowledge and its systems in the evolution and transformation of local community and community in the making. The author showed that indigenous knowledge is an essential contributor to the development of both types of communities. Accordingly, Mammino and Tshiwawa (2017:221) have explored the contribution of indigenous knowledge to chemistry in the Vhavenda community. Their study on chemistry practices in Vhavenda indigenous society revealed how indigenous knowledge through indigenous chemistry practices has improved livelihoods. This improvement of livelihoods results specifically from the preparation, preservation and manufacture of products related to food, alcohol, cosmetics and hygiene, building and decoration, pottery, perfumery, clothing, hunting, and chemical weapons. The indigenous chemistry uses, for example, the *museto* plant (*Dicerocaryum zanguebaricum*) and *muembe* plant (*Annona senegalensis*) to produce soap, shampoo and toothpaste (Mammino & Tshiwawa, 2017:229).

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Relevant studies also have been conducted regarding the application of indigenous knowledge in agriculture. Mugwisi (2017:160) shows that indigenous knowledge is significantly resourceful for agriculture and should receive greater attention in extension agricultural practices. Mugwisi's study presents many benefits related to the use of indigenous knowledge in agriculture by highlighting indigenous methods of maintaining soil fertility and controlling weeds and pests. The same study shows the indigenous method of preserving seed, including storing and preserving harvest (Mugwisi, 2017:162-164).

For his part, Ncube (2018) studied how the use of indigenous strategies for coping with and adapting to drought in agriculture improved the agricultural sector in the Karoo, South Africa. In order to combat drought and maintain the success of agriculture, Ncube (2018:98) shows that farmers use animal and environmental behaviours as weather indicators. The environmental behaviours are understood as the conditions of the nature. The farmers also use various local methods to improve soil fertility and conserve soil water in drought conditions.

Furthermore, indigenous knowledge is applied in medicine. The integration of indigenous knowledge in medicine is also called traditional medicine. Traditional medicine plays a significant role in primary healthcare in many Third World countries. According to the World Health Organization (2002:7), the positive features of traditional medicine include diversity, flexibility, and easy accessibility to healthcare. This refers to variety of natural products or medication, low cost, and low level of technological or industrial input.

In this context, Payyappallimana (2009:57) addressed the significant need for mainstream integration of traditional medicine into public healthcare in order to achieve the objective of improved access to healthcare facilities. Payyappallimana (2009:69) emphasised that in both developing and developed countries, traditional medicine plays a vital role in communicable diseases (malaria, HIV-Aids) and chronic diseases (cardiovascular diseases, musculoskeletal disorders, cancer, diabetes, and mental disorders).

Similarly, Ssenyange et al. (2015:499) reported a total of 18 medicinal plants used in the treatment of diabetes mellitus. Comparable findings were presented by Chauke et al. (2015:9) who recorded a total of 49 plant species. About 14 plant species and their methods of preparation were indicated for the treatment of diabetes mellitus, while most plant species were indicated for sexually transmitted diseases, fertility and erectile dysfunction (Chauke et al., 2015:9). Scholars also argued that indigenous medicine contributes to the treatment of cancer (Abera, 2003:88) and *helicobacter pylori* infections (Safavi et al., 2015:939).

As evident, indigenous knowledge is integrated in various fields with important benefits. However, essential to this study is the integration of indigenous knowledge in education.

2.2.2.2 Indigenous knowledge in education

A number of studies have been conducted to emphasise the application of indigenous knowledge to education. The purpose has been to demonstrate how indigenous knowledge contributes to the development of human intellectual and moral capital. Ndwandwe et al. (2017:265) used both Western and indigenous methods to train smallholder farmers from KwaDlangezwa (KwaZulu-Natal, South Africa). This training consisted of generating farmer awareness of the benefits of adopting, cultivating and using provitamin A-biofortified maize (PABM) as a way to improve food and nutrition security. The results of the study revealed that smallholder farmers were more comfortable learning with indigenous methods compared with Western methods (Ndwandwe et al., 2017:272). The farmers succeeded in adopting and using PABM for the benefit of agricultural development in the region.

Nel (2005: vii) confirms that indigenous knowledge enquiry is intrinsically multidisciplinary and stimulates indigenous involvement in all fields. He raises the main issue of situating indigenous knowledge in theoretical and practical plans. The multidisciplinary contribution of indigenous knowledge reveals that this knowledge may deal with theories of research, practical and/or natural sciences (Nel, 2005: vii). Nel (2005) illustrates the application of indigenous knowledge in education as well as in other fields such as culture, health and medicine, and environment. Hence, it can be concluded from Nel's study that indigenous knowledge should be recognised as a source of education, as well as other world sciences.

2.3 Decolonisation and education

This section situates education in the debates of decolonisation or postcolonial studies. The notion of education refers to the system put in place for the training and development of human beings. According to Wehmeier (2001:371), education is essentially a process of teaching, training and learning to improve knowledge and develop skills. Education could also be understood as the institutions or people involved in teaching and training, the subject of study that deals with how to teach, as well as an interesting experience that teaches you something.

This section thus addresses the question of what does decolonising education mean. It starts by defining the term 'decolonisation' before reviewing the significance of decolonising knowledge and/or education.

2.3.1 Significance of decolonisation

In this section, the study avoids addressing the history of the concept of decolonisation. Decolonisation has a long history dating to anticolonial struggles more than a half century ago and extending to the postcolonial period to signal ongoing efforts to disengage from the legacies of colonialism (Jansen, 2019:1). The section, however, outlines the essentials related to knowledge/education decolonisation and its characteristics. Therefore, discussion of decolonisation is restricted here to the perspective of the struggle (Ngugi wa Thiong'o, 1981), which includes objectives or visions like anticolonial education (Cabral, 1979), liberation pedagogy and epistemology (Grosfoguel, 2007), reconstruction, transformation, and development education (Jansen, 2019). Decolonisation is a concept that in the literature has been applied to diverse things, from changes in education institutions (i.e., universities) to the social transformation of nations (Jansen, 2019:2). In fact, this concept is increasingly employed to determine meanings and methods for changing education institutions in terms of their complexions, cultural values or philosophy, and curricula (Jansen, 2019:1).

Prior to the lens of knowledge decolonisation in academic institutions, the term moved from a political project (undoing of colonial politics) to the movement of liberation that consists of change in imperialistic norms which have caused discrimination in societies. According to Le Grange (2018), decolonisation is the undoing of colonisation. The first-generation colonialism took control of the physical spaces and bodies of the colonised. The second-generation colonialism took control of people's minds through disciplines such as education, science, economics, and law. Consequently, people's minds need to be decolonised (Le Grange, 2018:8).

According to Rhee (2021), if decoloniality is a kind of resistance to coloniality, then decoloniality includes the continuing fight for sovereignty by both local and global indigenous communities. But the issue of decolonisation is firstly individual prior to global. The question and/or problem is that if researchers, academics, and educators themselves are not decolonised, assuredly it is not possible for them to decolonise knowledge and education production (Rhee, 2021). In fact, since academics, researchers, and educators are trained in

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colonial vestiges of reason, logic, thinking and being as well, coloniality continues and decoloniality remains a simple spoken and written project (Rhee, 2021:2).

For this reason, Rhee (2021:3) states that it is fundamental to delink from imperialistic ontological and epistemological assurance resulting from coloniality before seeking for decolonial methodological directives of producing decolonial knowledge. In simple terms, researchers and academics need first to question and confront their own colonial habitual ways of being and doing. In this sense, decolonisation points first to decolonising the self – mind or minds – before engaging in decolonising the production of knowledge (Rhee, 2021).

In his work, *Decolonising the Mind*, Ngugi wa Thiong'o (1981:2) pointed out that the imperialist tradition in Africa is maintained by the international bourgeoisie using international organisations and multinationals to control local bourgeoisie and rulers. This produces the African neo-colonial bourgeoisie. The economic and political dependence of this new bourgeoisie is reflected in its philosophy of thinking and doing what is viewed as 'non-mainstream'. Consequently, populations are maltreated (Ngugi wa Thiong'o, 1981:2). Imperialism presents itself as the cure and demands even that the 'abnormal' be praised. For instance, 'theft is holy' is one of the doctrines of the neo-colonial bourgeoisie in many independent African states (Ngugi wa Thiong'o, 1981:3).

Describing the situation of the African mind, Ngugi wa Thiong'o (1981: xii) declares that he is dismayed by the neo-colonial situation which maintains the European bourgeoisie stealing African talents and intellectuals as they still steal our economies. Europe started looting Africa in the eighteenth and nineteenth centuries. They stole art treasures from Africa to embellish their homes and museums. In the twentieth century Europe stole the treasures of the mind to enrich their European languages, science, and culture. Africa needs to regain its economy, its politics, its culture, its languages and all its nationalistic writers and thinkers.

Furthermore, Ngugi wa Thiong'o (1981:3) stated that the biggest weapon employed by imperialism against the African collective defiance is the cultural bomb. He further argued that the effect of a cultural bomb is to destroy a people's beliefs or philosophy of the world. This includes people's names, languages, practices, environment, unity, and history. The consequences of the cultural bomb make people see their origins or their existence as one 'wasteland of non-achievement' and this makes them want to distance themselves from that wasteland. Also, the effect makes people want to identify with what imperialism brings to change their existence, such as Western languages, immorality, and chaos (Ngugi wa Thiong'o, 1981:3).

Decolonising the (African) mind is therefore the fight against imperialism. It consists of the rejection of being eternal victims, but rather confronting this victimisation with the higher and more creative culture of determined struggle. It speaks about the common language of struggle (Ngugi wa Thiong'o, 1981:3), because colonisation has come to engage colonised people in wars against one another on behalf of imperialism. Many wars in Africa concern tribes against other tribes, and African Moslems against African Christians (Ngugi wa Thiong'o, 1981:1).

Thus, decolonisation is accentuated in terms that centre the liberation of the mind, over land and body (Mignolo, 2020:613). But the anticolonial activist and intellectual, Amílcar Cabral (cited in Mignolo, 2020:613), warned of the importance of the link between the mind and the land. For typically, there is no mind without land or place which is the most precious foundation of decolonisation. Decolonisation of the mind cannot be detached from decolonisation of the land or the body, unless a differentiation is made between the mind and the body (Mignolo, 2020:613).

Mignolo (2011:46) reminds us that the concept of decolonisation is interpreted as decolonial thinking and doing, and this arose as a response to coloniality/modernity. It refers more specifically to the struggle against the continual oppressive and imperial mission of the Occident in the non-European world. That is, the end of oppression in the non-European world is similar to the self-determination of non-European peoples. Self-determination can also be understood as Quijano's statement of 'free decisions made by free people' (Quijano, 2007:177). In this context, China can be cited as an example because China has become the performer of 'de-westernisation' that consists of delinking from Western injunctions in order to emerge as an auto-determined nation (Mignolo, 2020:614). In fact, for Mignolo, if colonisation of knowledge, including colonisation of mind, goes hand in hand with colonisation of being, then decolonisation is about decolonising both the knowledge and the being (2020:616).

In line with Mignolo's (2020) thought, Walsh (2020:605-606) states as follows:

> With decoloniality, first we assume an attitude and a stance that defies coloniality's vision of total control. Second, we embrace a perspective that undertakes to think from and with multiform news paradigms in order to target 're-humanisation' and 're-existence'. This is about creating or emphasising distinctive styles of living, being, and

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knowing that could contribute to the construction and promotion of different social worlds.

Walsh (2020:606) indicates that decolonisation means struggling for the liberation of social forms of being, thinking, knowing, doing, and living. In other words, it rejects the promotion of any idea of oppressing and devaluating indigenous people. Research has also observed that indigenous people throughout the world (e.g., Africans in Africa, Aboriginals in Australia, and Amerindians in the Americas), or more specifically, in the Global South, disapproved of the European colonisation project. One of discourses held in this context is that the European or Occidental hegemony still exists in numerous countries in the form of continual colonialism through the control of politics, economy, and education systems (Ndlovu-Gatsheni, 2013:37). This continual colonialism or neo-colonialism is also demonstrated through the engagement of Western elites (political, military) in local systems of governance (Langer, 2017:192).

Neo-colonialism is what Mignolo (2020:612) understands as modernity or Western modernity, which is the ongoing colonial matrix power. Accordingly, Ndlovu (2020: 581) confirms that the obscure side of modernity is the ongoing coloniality project. Santos (2014) observes that the process of colonisation of the non-Western world was accompanied by genocide against the people and their knowledge. Ndlovu (2020) does not exclude modernisation from this crime. Rather, he demonstrates that the couple 'modernity/coloniality' has committed a massacre of epistemology on knowledge of the colonised subjects (Ndlovu, 2020: 582).

As a result, the call for decolonisation is viewed as a combative tool against the highly prescriptive structure of colonisation/modernisation (Ndlovu, 2020:579). Decolonisation concerns all aspects of life among people oppressed and dominated. Decolonisation becomes a perspective or movement of liberation of colonised worldviews, social life, or cultures. Decolonisation primarily deals with undoing, disobeying and delinking from modernism/colonialism and proposing other ways of thinking, doing, and living (Ndlovu, 2020:580)

Behari-Leak and Chetty (2021:3) draw on the Latin-American approach (Quijano, Mignolo, Maldonado-Torres, etc.) to understand decolonisation as a generative conversation on power, knowledge, and being with regard to different colonial contexts. However, the very decolonial perspective or approach must be attached to a particular context rather than emphasising a kind of global view, as decolonisation is complex owing to the multiple dimensions involved (Behari-Leak & Chetty, 2021:1). For this reason, the study of Behari-Leak and Chetty (2021)

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illustrates several senses that may characterise the concept of decolonisation. Thus, decolonisation can reflect:

- a turn

- a movement of resistance

- a resistance to change

- a trauma, shame and loss

- a project, and a discourse for change

We can conclude that the most important is not defining the concept 'decolonisation'. Rather it is giving it an appropriate orientation regarding the context in which it is employed, without running any risk of replacing decolonisation with another type of re-colonisation with the same objectives except for the same target. Scholars such as Tuck and Yang (2012) warned of this aspect when they stated that decolonisation is not a 'metaphor'. Keet et al. (2017:7) reported that the decolonisation discourse is easily adopted and engaged in various fields without aiming to encourage social justice. Thus, it can be understood that many users of the concept of decolonisation may use it in the wrong sense.

In this study, decolonisation is applied to knowledge/education production with particular emphasis on the role of indigenous perspectives. Mbembe (2015) notes that this is not about ignoring the Western or European education systems. Rather, as for Ngugi wa Thiong'o (1981:94), it is about placing Africa and its values at the centre of an African education system. Similarly, as demonstrated by Sinha (2021) through the discipline of anthropology, it is firstly about erasing the colonial and imperial legacy of hierarchies and hegemonies in the process of knowledge production. Secondly, it deals with foregrounding or repositioning the indigenous perspective in the process of knowledge production.

2.3.2 Decolonising knowledge and/or education

The concerns of knowledge/education decolonisation can be understood and acted from what Quijano (2007) describes as 'coloniality of knowledge'. Western knowledge has become the norm for all existing knowledge. This knowledge is seen as the only form of true knowledge. The Western institutions that hold this knowledge and its traditions are considered the centres of knowledge. The other non-Western forms of knowledge are rejected under the pretext that there is no other source of knowledge than Western knowledge. Coloniality of knowledge

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refers to the Western domination in the process of knowledge production in order to conquer and control all forms of human society (Quijano, 2007:168).

In other words, it can be understood that in the era of colonisation, the ways of knowledge or education production dealt with ideas of supporting and promoting imperialism or Occidental hegemony. The consequence of this has led the colonised to feel inferior. Quijano (2007:169) notes that the colonisers expropriated from the colonised their knowledge, including their beliefs and symbols. Thus, coloniality reflects the Western repression over the non-Western modes of knowing, producing knowledge, and envisaging the world. This coloniality denies the diversity of the sources of knowledge. Western knowledge pretends to be the sole world system of thought. In this mono-epistemic perspective, Western hegemonic knowledge presumes to define education for the rest of the world.

Therefore, in the era of post-colonisation, the ways of producing knowledge and/or education must change. In doing this, Quijano (2007) recommends the delinking from coloniality of knowledge through epistemic reconstruction. The acts related to the decolonisation of knowledge and/or education must refer to valorising the non-Western sources of knowledge that are 'inferiorised' and 'subalternised' (Naudé, 2019:217). Hence, we may understand why decolonisation has been used as a theoretical perspective to develop postcolonial studies.

According to Patel (2021), postcolonial studies generated postcolonial theory or Southern theory which are perspectives included in decoloniality. Post-coloniality reflects politics against colonialism and imperialism. Post-colonialism became not only a theory of knowledge, but also a theoretical practice. The postcolonial project is about considering and legitimising new paradigms or social realities, and rejecting ontologically Western knowledge through deconstructing its legacy (Patel, 2021:9).

One of the first advocates of postcolonial theory, Edward Said (1978:2), argued that the Western discourse about the 'other' was negative and humiliating. Despite this, such discourse is supported by various doctrines and institutions famously cited as sources and centres of pure knowledge. This reflects the mentalities created by colonisation that must be decolonised in order to materialise the postcolonial ideology.

To define the postcolonial (studies) perspective, Anderson (2002:643) notes that this refers to the examination of both 'metropole' and 'post colony' in the same analytic frame. Therefore, the postcolonial perspective is the search for equity and consideration of epistemic diversity.

Thus, the study of science and technology, for example, in the postcolonial era, should consider alternative representations, explications, and understandings.

In simple terms, a postcolonial perspective might reflect first how scientific and technological endeavours become locations for constructing and connecting local and global identities. Secondly, how these endeavours become locations for interrupting and defying the distinctions between global and local (Anderson, 2002:644). The postcolonial study of science and technology presented here might help to reconstitute identities and practices that serve for reconfiguring the local and the global. This also means evaluating Western sources of knowledge and non-Western sources of knowledge on the same scale (Anderson, 2002:645).

According to Verran (2002:729), the postcolonial perspective that she also calls 'postcolonial moment' refers to articulating alternative forms of generalising and promoting both Western and indigenous knowledge traditions. She notes an engagement with postcolonial theoretical perspectives through studying science, and particularly environmental science, by integrating the knowledge revealed by indigenous community practices (Verran, 2002:732).

Another illustration of a postcolonial perspective has been presented by Roy (2016) in the context of urban studies, with regard to the consideration of various geographies. That is, rejecting necessarily the unique Westernisation of the term 'urban'. Furthermore, in the context of international relations, Kagee (2019:144) states that the postcolonial perspective or theory consists of considering the voice of the non-Occident in international relations. It reclaims the relevance and authority of the narratives from the Global South, and places them on the agenda of international relations. Consequently, the postcolonial perspective presents international relations differently from the hierarchical arrangement of nations symbolised by the supreme hegemony of the North over the Global South.

In doing this, the postcolonial perspective is about what Maldonado-Torres (2011) terms the 'decolonial turn'. This means thinking about knowledge and education production under the prism of delinking from the colonial matrix of power (Mignolo, 2020). In line with this, Heleta (2018:57) contends that the knowledge and/or education decolonisation project aims to bring to the centre of the discourse other epistemologies, other principles of knowledge and understanding. The process is about observing the co-existence of many sources of knowledge that can emerge from the fact of opening other alternatives for access to knowledge and/or education.

Observing from the case of South African higher education, Heleta (2018:47) argues that the decolonisation of knowledge is in line with rewriting histories and reasserting the dignity of oppressed people. Additionally, it is about restoring the knowledge production and worldviews of oppressed people. As such, decolonisation of knowledge implies the end of the imposed knowledge, theories, practices, and understanding of the world (Heleta, 2018:48).

Heleta underlined the origins of epistemic violence at South African universities, focusing on the curriculum. This curriculum continues to esteem Western knowledge and worldviews, while other (e.g., indigenous) knowledge and worldviews are devalued and ignored (Heleta, 2018:48). In simple terms, the curriculum still strengthens white and Western domination and privilege, while at the same time Africa and its people are marginalised or disparaged (Heleta, 2016).

Epistemic violence could refer to the Eurocentric and Western domination and subordination of colonial subjects as well as the inconsideration of their comprehension of the world (Spivak, 1994:80). Epistemic violence also encompasses the Occidental big lies that erase the history of the subalterns and convinces them that they have no civilisation. The essence of their existence is only attached to the enlightened colonisers or the adoption of Western traditions and worldviews (Heleta (2016).

Western violence in the case of South Africa is about the apartheid curriculum that has promoted white supremacy and dominance, as well as stereotyping the whole continent. The current higher education curriculum still largely reproduces the colonial and apartheid knowledge traditions. Additionally, this is disconnected from African existence, including the practices, experiences, and cultural traditions of the population, of whom the majority are black (Ramoupi, 2014:271).

Another fact is that the writings of Western scholars which contend that Africa essentially comprises misery and irrationality are still taught in African universities (Heleta, 2016). And when this sort of knowledge is employed to teach about Africa, the result is misunderstanding, alienation, and distance or detachment from the African continent (Heleta, 2016).

For this reason, decolonisation of knowledge and education requires rethinking teaching and learning contents, and rewriting the existing theoretical and methodological approaches that were imposed by the colonialists. Accordingly, it is the opening up to all other forms and traditions of knowledge (Heleta, 2018:49). Decolonisation of knowledge and education means, on the one hand, to challenge and supplant the Western hegemonic knowledge system with its

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demand of universality and its legacy of epistemic injustice. On the other hand, it means demanding the acceptability of other knowledge systems and defending epistemic justice which is the materialisation of local traditions of knowledge in teaching and learning contents (Dreyer, 2017).

Understanding Dreyer's thought (2017), we can conclude that decolonising knowledge and education is about decolonising epistemology, pedagogy, curricula, school, research, higher education, etc. A number of scholars have conducted scientific studies in this area. Badat (2017) shows that decolonising knowledge and/or education is a rejection of Western hegemony in science. For him, with reference to Santos (2007) and Bulhan (2015), colonisation draws attention to the Eurocentric philosophy, epistemology, and ontology to legitimate European dominance. It is this ideology that characterises the Western knowledge traditions which have been universalised, while the knowledge traditions of the colonised people have been rejected (Badat, 2017:7).

For Africa, it can be understood that there is an interest to restore the link between African education systems and African cultural principles. This approach consists of deconstructing the existing ways that favour the colonisation of knowledge and education in Africa. The starting point of this, according to Badat (2017:11), is the connection of the curriculum with African values. As a result, decolonisation of knowledge and/or education concerns first curriculum decolonisation, which is epistemic justice (Badat, 2017:11). In fact, the concern of curriculum transformation is principally to challenge Eurocentric dominant epistemology and pedagogy, and to construct new academic and research institutions that respect cultural diversity and social justice in terms of knowledge making (Badat, 2017:15).

Lebeloane (2017:2) reveals that despite independence, elementary schools as well as higher education institutions in Africa are still colonised through the domination of Western knowledge systems. In this context, decolonial thinking or decolonising knowledge should consist of restoring the dignity and equity of people, and social justice. That is, re-establishing norms, values, and worldviews of people that are demonised by imperialism and neo-colonialism (Lebeloane, 2017:2). As does Badat (2017), Lebeloane (2017:2) asserts that the starting point of decolonising knowledge and/or education is decolonising the school curriculum.

The call for decolonising the school curriculum is defined by Sayed et al. (2019:155) as the fact of engaging Africa at the centre of the knowledge taught and learned in African schools and higher education institutions. Such action demands to purge all vestiges of Western

dominant systems of thought in African education institutions or systems. This is in accordance with positioning the Global South at the centre of the teaching and learning context and perspectives (Heleta, 2018:47). Thus, it sounds like legitimating indigenous knowledge at the centre of both the production of knowledge and the process of accessing education.

As a result, curriculum transformation aims to decolonise curricula for dignity, equity and social justice in order to stop the continuation of preparing African learners to lead Western modes of knowing, being, and living on a continent that is not Western by nature (Lebeloane, 2017:2). This search for dignity, equity and social justice is what Chetty (2019a) indicated in his call to decolonise the humanities. He emphasises the creation of a new kind of humanities education. It is about decolonial humanities that engages with the struggle against inequality and injustice, and that promotes or values lived experiences of poor people (Chetty, 2019a:194). In other words, the concern of decolonising the humanities is the call for a transforming humanities curriculum that goes beyond simple ideas or imaginations. It is about concrete evidence perceived within a specific context (Chetty, 2019a:195). Hence, Case (2016:22) proposed the materialisation of the public good of higher education through the process of decolonising the curriculum.

Essential to the project of decolonising knowledge and/or education is also the call to decolonise epistemologies. This particular call of decolonisation is specifically about a project that aims to decolonise the Western canon of epistemology (Grosfoguel, 2007:211). One of the reasons for focusing significantly on epistemological decolonisation is that Eurocentric thinking designed the epistemological framework that overshadows and ridicules non-Western perspectives (Schulz, 2017:51).

According to Connell (2021), a decolonial perspective points to a form of 'mosaic epistemologies', where different knowledge productions are associated or interact with one another. It also refers to a form of 'solidaristic epistemologies', where there is a connection and a possibility of learning from different ways of producing knowledge. In this sense, decolonisation is intrinsically a project that highlights, firstly, respect for autonomy and worldview differences, and secondly, connects these differences in order to construct or improve a process of mutual learning rather than a process of destruction and domination. In this regard, decolonisation of knowledge and education can be understood as the process of reciprocal education between the Global North and the Global South (Connell, 2021).

In addition, Connell (2021:13) states that decolonising epistemologies or the end of

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colonisation in/of knowledge production concerns both the Global South and the Global North. As such, Connell responds to a kind of fear among researchers and academics from the Global North who still think that the process of decolonisation would mean suppressing their skills (Connell, 2021). According to Connell (2021:13), decolonisation does not point to the loss of professional skills on which Western researchers and academics have relied. It does not mean the destruction of existing knowledge. It is rather an amplification of skills and possibilities to advance knowledge production.

Keet et al. (2017:6) argue that decolonising knowledge is about working against the epistemic injustices of all knowledge productions. For them, even if decoloniality is not a task of engendering new creeds, there is a need for struggling towards epistemic freedom. One could also argue about the importance of recognising that there is no single epistemic tradition from which to arrive at absolute truth or universality. Thus, decolonisation of knowledge is needed whereby the diversity of epistemic perspectives and the consideration of critical thinking from the Global South are also taken seriously (Chiumbu, 2017:3).

Scholars such as Woons and Weier (2017: iii) have offered a critical epistemology of global politics, which combines social sciences, cultural identity studies, and international relations. This has proposed an enriched visualisation of the importance of borders studies to be envisaged from multiple angles of knowledge production. In addition, Kadoda (2018:2) investigates the anticolonial criticisms frame and discussions on the process of epistemic decolonisation that can favour cumulatively access to education and social progress.

Decolonisation of knowledge and education also encompasses decolonisation of pedagogies. John (2019) reveals that many teachers do not have the necessary skills to deliver science content in a way that is understandable, attractive, and pertinent to learners. This problem could derive from various causes related to teachers' lack of knowledge, the complexity of the subject, or the environment of the school (John, 2019:S9). It could be understood that teachers trained in Western education institutions using Western methodologies are faced with practical difficulties in rural schools, despite their considerable efforts that usually are not acknowledged (Chetty, 2019b:245). In rural schools, realities are far less in accordance with Western traditions of knowledge transfer than in urban schools.

Decolonising pedagogies is about linking the way of teaching with the context or environment of the teaching practice. For this reason, John (2019:S10) proposes the incorporation of critical pedagogy of the place in teacher training. This means the consideration of diversity of pedagogical systems. This may allow us to understand the importance of considering the

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context in which the system of teaching and learning is applied, experienced, and interpreted in order to make relevant the analysis on pedagogical norms. This is in accordance with what Mignolo and Walsh (2018:70) describe as reciprocal pedagogy based on complementarity, lived experiences, and cosmologies. That is, a reciprocal exchange of diverse knowledge sources or productions and sharing practices that result from various competences of nurturing life (Yates, 2020:591). Mignolo and Walsh (2018:95) suggest that decolonial pedagogies entail a process of adapting to multiple knowledges.

Moreover, Zembylas (2018) questions the meaning of decolonising higher education pedagogies. For him, it is important to consider humanity in the long process of knowledge making, knowledge transfer, and knowledge acquisition. The call for decolonising pedagogies emphasised by Zembylas (2018) deals with humanising the discourse and practice of the pedagogy.

Sayed et al. (2019:155) have examined what the idea of placing indigenous knowledge at the core of the curriculum implies for curriculum and pedagogy in higher education, specifically regarding initial teacher education (ITE). The focus on ITE, which connects the school to the university, should consider a decolonising agenda in the preparation of teachers in order to connect the school to higher education and the whole education system (Sayed et al., 2019:155). In doing this, teachers' paucity of skills noted by John (2019) regarding the adjustment of methodologies or pedagogies to the (rural) environment could find a response through the principles of ITE.

For Sayed et al. (2019:156), the decolonisation of knowledge and/or education refers to what is a more comprehensive transformation of an education system engaged in remarkable inequalities. This transformation of the education system is what Keet (2019:203) understands in his reading of the decolonial perspective as a call for encouraging and claiming the nature of flexibility of the university. This nature of flexibility is termed 'plasticity' and designs the epistemic freedom (Keet, 2019:202). In other words, Keet (2019) suggests an interpretive orientation that can restore the essence of the origin of the term 'university'. This essence refers to knowledge transformation from monopolistic monotony to flexibility (Keet, 2019:203). The flexibility or plasticity underlined by Keet (2019) reflects the capacity to adapt knowledge production to knowledge utilisation or consumption. It is in this perspective that Mamdani (2019:16) states that the challenge in higher education is to be both responsive to the local and engaged with the global.

To decolonise knowledge and education is also about decolonising research. As Dreyer (2017) notes, research is mostly associated with knowledge-generating practices. But the prevailing methodologies, epistemologies, and ontologies are those that are shaped only on the Western paradigm of doing research. As such, decolonising research refers to the change of paradigm in doing research. This is in accordance with Khupe et al. (2016:17), who stated that decolonisation of research consists of linking research or knowledge production with ways that are respectful of community knowledge and modes of living.

Khupe et al. (2016:16) explored how the research process itself may contribute to the promotion of transformation and indigenous knowledge. They defend the decolonisation of education research through the principles of *ubuntu*. According to them, despite continued calls for research among indigenous peoples to be done in respect of local worldviews and culture, little is done. It appears inexplicable that research studies are conducted among indigenous people without their voice or contribution, as if they have neither knowledge nor education.

Ubuntu is articulated in the Zulu/Xhosa maxim *umuntu ngumuntu ngabantu* (a person is a person through other persons) that represents an ideal. This ideal expresses the essence of being human through respect and sociocultural accountability (Khupe et al., 2016:17). With reference to previous studies (Khupe et al., 2010; Khupe, 2014), the authors showed that research which acknowledges and is respectful of community knowledge and ways of living results in more meaningful engagement with participants. This creates opportunities for transformation and emancipation. *Ubuntu* is an example of the emerging frameworks that are based on the perspectives of indigenous people and are therefore valuable for indigenous knowledge education research (Khupe et al., 2016:17). In this sense, it can be argued that in *ubuntu* or in indigenous research approaches, people are central to the research process. Therefore, the indigenous philosophy of *ubuntu* has the potential to generate life transformation for all participants and contribute to the redressing of epistemic domination put in place by the Occidental philosophy and vision (Khupe et al., 2016:24).

According to Tuhiwai Smith (1999:125), decolonisation in the frame of knowledge production points first to decolonising the methods of doing research by recognising indigenous peoples as part of researchers rather than subjects of the research. Colonial ways of doing research are attached to the action of dehumanising indigenous peoples (Tuhiwai Smith 2021). Thus, decolonising research methods or methodologies consists of thinking how to do research differently from colonial methods of doing research. Tuhiwai Smith (2021)

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proposes an alternative way of research which positions the indigenous perspective at the forefront.

To conclude this section, it could be understood that decolonising knowledge and education is mostly associated with change in schools and academia, or with transformative education systems. It is fundamentally about decolonising curricula, epistemologies, pedagogies, ontologies, methodologies, research, science, institutions, etc. through considering contextual perceptions and integrating local worldviews. To decolonise knowledge and education entails a set of acts which examine and link the historical legacy and existing reality (Hoadley & Galant, 2019).

Moreover, Behari-Leak and Chetty (2021:3) argue that the decolonial perspective of knowledge and education production points to alternative ways of knowing based on different theoretical, epistemological and ontological foundations. This aims to bring into the discourse of knowledge and education production complementary voices and practices in order to ensure the legitimisation of other sources of knowledge.

In addition to this, Behari-Leak and Chetty (2021) highlight four kinds of protagonists or types of actors involved in the decolonisation discourse. There are the conservatives, the radicals, the moderates, and the hybrids. First, the conservatives are those who want to maintain the status quo of colonisation. Second, the radicals are those who argue for total rejection of any form of colonial traces or vestiges. Third, the moderates are those who support decolonisation, but who do not call for total rejection of colonial vestiges, that is, colonial heritage of knowledge in which more scholars have been trained and are able today to discuss decolonisation. Four, the hybrids are those who are both conservative-moderate and moderate-radical. They are portrayed as those scholars who are neither defenders of colonisation, nor defenders of decolonisation (Behari-Leak & Chetty, 2021:16-19).

2.4 Indigenous methods of teaching and learning of knowledge transfer

Maluleka and Ngulube (2018) studied the process of acquiring, transferring, and preserving knowledge. This process is based on the principle of knowledge conversion. It is about the conversion of tacit knowledge into explicit knowledge or vice versa. They show specifically that indigenous knowledge can be acquired through observation, imitation and practice, and/within training, mentorship, collaboration and discussion (Maluleka & Ngulube, 2018:115).

Van Wyk (2002:305) notes that educators may reassure themselves that all learners are the same in terms of ability and cultural dynamics. This refers to a type of classification of learners in the sense of ensuring that learners are at the same level of learning. Also, it could be understood from Van Wyk (2002:310) that educators may consider the language context, that is to teach by using a language which is known to all learners. Therefore, the categorisation of levels of learning, including language, is presented here as an indigenous method of knowledge acquisition. The 'same level of learning' mentioned here is about considering appropriate cultural and linguistic conditions of learning, because educators may create a platform for learners to construct their own knowledge that speaks to them as learners (Van Wyk, 2002:307).

Grösser (2007:37) argues that teachers are the ones who contribute most to education production. Thus, teachers must make it possible for learners to engage correctly with the learning methods. It is essential that teachers are able to link the teaching and learning functions in order to facilitate the best learning outcomes. According to Grösser (2007:42), indigenous methods of learning could be understood as the accumulation of 'reflection on practice' and 'reflection in practice'. Reflection on practice refers to the fact of learning from past experience, while reflection in practice refers to the fact of planning and evaluating personally the current learning process. Therefore, Grösser (2007) contends that one of the indigenous learning methods is the process of learning from past experiences to present experiences. In this regard, lived experiences constitute an indigenous method of learning.

Odunlade and Okiki (2018:144) explored how indigenous people transfer medical knowledge and pointed out that this knowledge is acquired or passed orally from generation to generation. The indigenous method of knowledge transfer is such that children learn from their parents. In this perspective, indigenous teaching and learning methods include the ways used by indigenous parents to teach their children as well as the ways used by children to learn from their parents (Odunlade & Okiki, 2018:150). Odunlade and Okiki's (2018) findings are in accordance with what Seroto (2011) found earlier. Seroto demonstrated that indigenous people transfer knowledge orally from one generation to another through ballads, songs, ceremonies, initiations, music, dance, poems, proverbs, riddles, etc. (Seroto, 2011:78-80). Moreover, these ways of knowledge transfer aim to teach about morality, religion, community history, ecology, politics, and about the entirety of community existence.

O'Donoghue et al. (2019:11) reveal that traditional African ways of teaching are oral storytelling, and the learning ways refer to the learning process by doing. Shava and Manyike

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(2018:36) assert that indigenous knowledge is transmitted from generation to generation. First, knowledge is transmitted orally through narratives, stories, songs, and poetry, and visually through arts, such as Bushman (San) paintings, writings, craft, cultural rituals and dance. Additionally, it is transmitted practically through doing and the artefacts associated with practice, and spiritually through dreams and visions from the ancestors.

Marquez Nava (2004:165-166) notes six specific indigenous strategies for teaching and learning. The first is the appropriation of language as basis for identity expression. The second refers to the mechanical repetition and interpretation of relation to others and to the world. The third corresponds to incorporating the everyday experience of the educational process into the sociocultural organisation of the community in order to participate in community life. Fourthly, it entails incorporating the set of common knowledge into the individual educational process. The fifth strategy refers to the technical knowledge that can improve one's quality of life. And the final strategy is establishing an educational community by promoting the ancestral values of the group or the community.

It could be understood from Marquez Nava's strategies that a perspective of an advanced indigenous society results in the accomplishment of an indigenous formal school system. Without necessarily opposing two forms of school systems (ancient indigenous and modern indigenous), it has to think simply in the direction of integrating powerful indigenous knowledge systems into the existing modern systems of school. For example, Mpofu and Miruka (2009:92) argue that there is a need for a training centre that specialises in the production of indigenous knowledge or traditional skills in domains like building, fishing, farming, healing, etc. This training centre could be popularised by communities in order to attract a substantial number of apprentices. This will increase indigenous knowledge production and will have an impact on indigenous education as well as societal development.

It is important to note that Mpofu and Miruka (2009:85) pointed to the fact that the accomplishment of indigenous knowledge transfer may be the incorporation of indigenous knowledge into the formal school system. This is because the young generation spends most of their time at that model of knowledge acquisition. This suggestion advocates designing the integration of indigenous curricula into the school and guaranteeing the documentation of indigenous knowledge in order to avoid the risk of its disappearance. However, Mpofu and Miruka (2009:91) present three indigenous ways of knowledge transfer, which are observation, personal experiences, and practices.

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2.5 The particular case of Gabon

This part of the literature review presents a brief overview of the education system and decolonisation lens in Gabon. To commence, one could argue that with a rich past and strong future, French-speaking sub-Saharan Africa must obtain a number of tools with regard to decolonising education. According to Idiata (2005: 11), the concern of decolonising education in Gabon must deal with the recognition of indigenous languages. This includes the rejection of French as the total dominant language over indigenous languages and culture. Secondly, to put in place a bilingual school where no language should be neglected (Idiata, 2005:11).

Gabon's education system is based on Western education, particularly France's education system (Moussavou, 2014). Idiata (2005:16) notes that the education system in Gabon is in sharp contrast to social cultural realities. This education system is constrained. It can be understood that the education system in Gabon is not shaped regarding local context. This education system does not correspond to the requirements of local populations.

Idiata (2005) further points out that, as in the oldest French colonies, schooling in Gabon (including higher education) is organised according to the French school model. This model is imposed as the unique model in terms of pedagogies and curricula (Idiata, 2005:65). The education system in Gabon is shaped in the perspective of perpetuating Western knowledge hegemony and modernity. French as well as English and Spanish are the languages most taught in Gabon's schools and universities. These foreign languages are the basis from which a Western worldview is transmitted and perpetuated (Idiata, 2005:79).

Khoumba-Bouassa (in Koumba, 2012:11) declared in French (translated into English):

> Every human being is a lived entity which possesses rights and privileges that must be defended when these run the risk of being modified, moved or abolished.

This declaration can be understood as a declaration in line with a decolonisation claim. But in Gabon, the talk about decolonisation seems viewed as a warlike declaration against the government or political system which is under the control of the coloniser: France or the French government. This is in accordance with what Tonda (2020) describes as 'Afrodystopie'. For him, independence did not dissolve the monsters (bad local leaders, capitalism defenders, colonial system) in Central Africa. Rather, independence has made them more dangerous. Tonda (2020) illustrated this with regard to the context of the Republic of the Congo. He underlines that these 'monsters' have become more friendly and hypocritical. They have changed the white skin of colonisers into black skin to restore local people's

confidence. The reality is that they have changed the white skin of the previous Belgian King Leopold II into the black skin of Congolese President Mobutu (Tonda, 2020:3).

The reviewed studies address the question of indigenous methods of teaching and learning related to the issue of knowledge transfer. The reviewed studies reveal important indigenous methods of teaching and learning as well as relevant ways of knowledge transfer. While these studies have explored the question within African and Latin-American communities, I explore the question within particular communities in rural Gabon.

However, the reviewed studies do not address how indigenous communities interrogate themselves about the issue of decolonisation in interactions or not with indigenous teaching and learning methods of knowledge transfer. This specific dimension is what I investigate in order to contribute to the valorisation of indigenous knowledge and consequently to the decolonisation of Gabon's education system through the claim of placing at the centre of this system local knowledge.

2.6 Conclusion

This chapter has reviewed the relevant literature and highlighted the key concepts relating to the decolonial study of indigenous teaching and learning methods of knowledge transfer. From the wide range of consulted literature, it appears clear that indigenous knowledge is a source of knowledge production that is applied in various fields such as agriculture, medicine, chemistry, education, etc. In the context of education, many reviewed studies have demonstrated that indigenous knowledge is essential to contribute to the development of human intellectual and moral capacity. Indigenous knowledge is knowledge transferred through processes based globally on observation, personal experiences, and practices. Indigenous teaching and learning methods are visual, practical and spiritual also.

The literature review also revealed that the post-colonial perspective of education goes hand in hand with the decolonisation of knowledge and/or education. Decolonising knowledge and/or education entails decolonising pedagogies, epistemologies, curricula, research, disciplines, ontologies, methodologies, institutions, etc.

CHAPTER 3:
THEORETICAL FRAMEWORK

3.1 Introduction

The theoretical framework of this study adheres to the principles outlined within decolonial theory. The main motive for the theoretical choice in this thesis is that in decolonial theory, the analysis does not isolate knowledge from the place or location where the knowledge is expressed. Thus, this dimension creates the originality, the particularity, and the subjectivity that science needs now for restoring, in line with Cesana (2000), the plurality linked to the term knowledge (cited by Horsthemke, 2017). Accordingly, a decolonial approach may pertinently theorise this study to better understand the situation as it appears in Gabon.

As presented in the previous chapter 2, decolonial theory can refer to many terminologies such as decoloniality (Walsh, 2020; Rhee, 2021), postcolonial theory (Anderson, 2002; Patel, 2021), or decolonisation (Nguyi wa Thiong'o, 1981; Jansen, 2019). These terminologies highlight detaching from the colonial perspective, particularly in knowledge production. It is for this reason that these terms are employed as synonyms (Mignolo, 2011; Ndlovu, 2020). The term that is used in this study is 'decolonisation'.

Decolonial theory derives from the surge in decolonisation. According to Maldonado-Torres (2011:1), the decolonial turn has existed for a long time in different opposing ways: on the one hand, colonisation through Western imperial thought, and on the other, a new paradigm that includes alternative worldviews. The decolonial turn is attached to critical epistemic attitudes and the research of generating diversity. This is in accordance with enabling the Global South, including the south of the North to express itself.

Decolonisation deals with a critical perspective on colonialism/imperialism or refers to the struggle against other forms of dehumanisation (Maldonado-Torres, 2011:2). In addition to this, we can note the views of Walsh (2020) and Le Grange (2018). Decolonisation is what Walsh (2020:605-606) indicates as attitudes and active positions that challenge the colonisation vision of total control in order to restore the humanisation and existence of the colonised. It is also the claim for stopping taking control of people's territories and minds in the name of imperialism and Western science hegemony (Le Grange, 2018:8).

To be more precise, decolonisation is about decolonisation talk and action in a specific context such as knowledge, power, and being, including institutions such as the university

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(Maldonado-Torres, 2011:1). In decolonising knowledge, because of its emancipatory goals and its suspension of method, the decolonial turn cannot be fully contained in single units of study, or captured within the standard division disciplinary or scientific frame (Maldonado-Torres, 2011:1). The decolonial turn refers to a family of diverse positions that share a view of coloniality as a fundamental problem in the modern age or contemporary era (Maldonado-Torres, 2011:2).

In Africa, when colonisation ended in many territories, the decolonial turn entered the academy. In fact, this was helped by a wave from the north caused by the Civil Rights Movement in the United States (1950–1960), including the end of formal segregation in schools. There was also the movement that led to the creation of ethnic studies and women's studies programmes in the United States (1970), as well as the movement in 1980 that led to institutional recognition of indigenous languages in New Zealand (Maldonado-Torres, 2011:3).

This accelerated decolonisation points principally to the project of liberation and cultural identity. But these are not the only ones (Maldonado-Torres, 2011:3). This surge emerges when liberation is translated as a claim for immediate political action that is opposed to theoretical reflection. When the claim for liberation and cultural identity merged, the claim for ethnic and gender studies was marginalised. This produced a form of epistemological cessation. This is not relevant in the decolonial turn, because the claim for transformative epistemology is part of the very decolonisation. Therefore, beyond the dialectic between identity and liberation, it is significant to add the imperative of epistemic decolonisation as well as the decolonisation of human reality (Maldonado-Torres, 2011:4).

However, for Mamdani (2019:16), decolonisation is about considering first the local before pretending to engage with the global. It can be understood that this addresses particularism such as nationalism, Africanism, or indigenisation. Thus, in the view of a decolonial scholar like Mamdani, the priority of the decolonisation project is what I term 'home freedom'. This description of the decolonial turn is what can be seen in the context of Gabon. In a developing country such as Gabon, sustainable development includes the promotion of indigenous culture. Indigenous culture in Gabon was unfortunately dismissed by colonial thinking through its institutionalisation of schooling exclusively within the epistemological and pedagogic systems of the Republic of France (Moussavou, 2014:2). Therefore, it appears that the centre of the decolonisation project of Gabon points to research in local identity recognition and liberation from the existing coloniser.

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Mamdani was asked why he revisited the University of Cape Town after swearing never to return to this academic institution. He replied, 'because Rhodes fell.' This response can be understood as the fact that there is now a place for public discussion about subjects silenced by the regime of apartheid (Le Grange, 2019:29). Rhodes is viewed as a symbol of apartheid and its effects of domination, imprisonment, dehumanisation, and other multiple forms of suffering. Therefore, decolonisation is about giving a voice to the oppressed. Hence, Ngugi wa Thiong'o (1981:82) stated that decolonisation expresses itself without being forced to conform to the system of thinking put in place by the controllers of thought.

When Maldonado-Torres (2011) points out that the more significant decolonial turn refers to decolonising knowledge, power, and being, this does not necessarily mean that the other angles of decolonisation are negligible. I presume it is because decolonising knowledge appropriately includes decolonising the mind, which results significantly in dehumanisation (Walsh, 2020:605). Maldonado-Torres, (2011:2) asserts that decolonisation is about restoring the value of forms of thinking, practising, and being that have been or continue to be dehumanised.
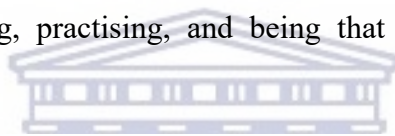
With regard to knowledge and education, Mamdani (2019) describes the decolonial turn as academic freedom. In addition to this, Le Grange (2019:31) argues that the decolonial turn offers opportunities to reimagine the purposes of higher education institutions with regard to equal and quality education. Thus, the focus should not only be on questioning what decolonisation is, but it should be on what decolonisation might become. This means the decolonial turn should be detached from the painful aspects of Western knowledge that were introduced through colonisation, which is not different from modernity in the Western sense according to Mignolo and Walsh (2018:4).

The application of the theoretical approach in this thesis leans on three complementary perspectives of decolonisation deriving from scholars such as Achille Mbembe, Walter D. Mignolo, and Linda Tuhiwai Smith. These views have been chosen because they call for decolonising knowledge and/or education, and because they particularly support the emancipation of indigenous ways of being and living, including teaching and learning (knowing).

3.2 Mbembe's decolonial theoretical approach

Observing from the case of (South) African higher education, Mbembe (2016) calls for

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decolonising universities as institutions. Universities are known as places for producing knowledge that should be accessible. Mbembe (2016:30) argues that accessibility is not about simply thinking in demographic terms, although these are crucial. Accessibility is rather about the possibility to inhabit a space which is recognised as an own home. It is a place where people belong.

According to Ramoupi (2014:271), the colonial and apartheid curriculum in South Africa has promoted white supremacy and formed fixed, incorrect ideas about Africa. The ongoing effect is that the current higher education curriculum still largely reflects colonial and apartheid philosophy or thinking. In addition, this is disconnected from African realities, including the lived experiences of people who are the majority black South Africans (Heleta, 2016).

The reality is that African universities are 'Westernised'. They are Westernised in the sense that they are local universities that are engaged in a dominant academic model based on the Eurocentric epistemic canon (Mbembe, 2016:32). A Eurocentric canon is a canon that attributes authenticity, legitimacy, or truth only to the Western way of knowledge production. This canon does not consider other epistemic traditions. The canon characterises colonialism as a normal form of interactions and social relations among human beings rather than a system of exploitation, oppression, and dehumanisation (Mbembe, 2016:32). Such knowledge introduced in disciplines, pedagogies, and curricula, do not help students to cultivate critical and analytical skills that can enable them to contribute to the African continent's development. This knowledge favours detachment of the known from the knower and expresses division between mind and world, or between reason and nature (Mbembe 2016:32). In simple terms, we understand that the Western epistemic tradition disconnects students from their existence.

The problem with the Western epistemic tradition is that it has become hegemonic. This hegemonic perception of knowledge production has engendered discursive scientific practices and has created interpretive frames that make it difficult to think outside of these frames. This hegemonic philosophy also rejects anything that is articulated, thought and envisioned from outside of these frames (Mbembe, 2016:33). For this reason, it is important to question the teaching and learning content with the aim of presenting Africa at the centre (Mbembe, 2016:35). Decolonisation is therefore linked with 'Africanisation' of both knowledge and university (Mbembe, 2016:33).

According to Ngugi wa Thiong'o (1981:87), to 'Africanise' is part of both a larger politics of African language and a search for liberating an African perspective. It is about a perspective that can enable Africans to see themselves clearly in relationship to themselves and to other

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selves in the universe. In other words, Africans have to consciously and courageously confront and reverse what colonialism/imperialism has been doing to them and to their view of themselves in the universe (Ngugi wa Thiong'o, 1981:88).

Drawing on the view of Ngugi wa Thiong'o (1981), Mbembe (2016) notes that the call for Africanisation is a project of re-centring. It is about denying the statement that the Western knowledge tradition is the central origin of Africa's consciousness and cultural heritage. Additionally, it is about refuting the perception that Africa is purely an extension of the West. It is not about closing the door to European, American, or other traditions. It is about defining clearly what the centre is (Mbembe, 2016:35).

For Mbembe (2016:30), higher education aims to encourage students to develop their own intellectual and moral lives as autonomous persons. Higher education should also encourage the redistribution of opportunities of doing research on issues that are important to know. This will systematically enable students to project beyond their current knowledge horizons. Instead of this, universities today are rather large systems of what Mbembe (2016:30) terms authoritative control, standardisation, gradation, accountancy, classification, or credits and penalties. Mbembe (2016:30) demonstrates that it is important to decolonise the systems of access and management of higher education institutions, which are becoming companies or businesses to make money rather than to produce knowledge. As such, students and teachers or academics are more and more discouraged from the free pursuit of knowledge. The goal of the free pursuit of knowledge has been replaced by the goal of pursuit of credits and economic incomes. In other words, it is substituting scientific capacity and devotion to study and enquiry with commercial profits (Mbembe, 2016: 30).

In addition, Mbembe (2016:31) notes that there are internal changes in the organisational structure of universities. There is a growth in and pursuit of bureaucratic methods in higher education. To decolonise means to break this surge of bureaucratisation. Decolonisation here implies reversing the cycle which tends to transform students into consumers and customers. These tendencies are inherent in an institution that runs in accordance with business principles. For example, students become less interested in their studies and knowledge, but more in the material benefit that their studies and degrees have on the open market (Mbembe, 2016:31). In this system, students become common clients of merchandisable educational commodities, commercial certifications and degrees. In this context, the mission of the university does not foreground knowledge, training or education. Clearly, the mission is to make students happy as customers (Mbembe, 2016:31).

For Mbembe (2016:36), decolonisation of knowledge and education has two sides. The first side refers to a critique of the hegemonic Western academic model, which aims to acculturate and transform the African university into more of a marketable enterprise than an important place of knowledge creation. This transformation or global restructuring of higher education is closely related to the dynamics of global capitalism (Mbembe, 2016:37).

The second is an effort of visualising what the alternative to this Eurocentric model could look like (Mbembe, 2016:36). This alternative could be in line with a horizontal strategy of openness to different epistemic traditions or epistemic diversity. It is about a task that embraces the radical recreation of ways of thinking and a transcendence of disciplinary divisions (Mbembe, 2016:37).

Furthermore, Mbembe (2016:35) reveals that decolonising education refers to the concern of knowledge about Africans. With Africa at the centre of thought, knowledge making must be seen and envisaged from the African perspective. That means decolonising knowledge and education is about placing Africa at the centre of African knowledge production. The decolonising injunction has mostly consisted of critiquing and challenging the colonial knowledge that is still produced, taught, and disseminated, as well as denouncing its toxic effects on African society (Mbembe, 2019:239).

3.3 Mignolo's decolonial theory approach

For Mignolo (2017:287), the problem is that thinking is trapped in the cage of Western philosophy. If that thinking is what comprises knowledge, then knowledge is also trapped. The production of knowledge is still highly influenced by Western or European ways of thinking (Mbembe, 2016). This is not a current tendency, but a perfect plan built over a long period in order to implement and impose on the rest of the world European imperialism or Eurocentrism.

Mignolo (2017:287) interrogates Eurocentrism as an epistemic issue. He argues that knowledge generated in Europe from the movement of the Renaissance (15th century) piggybacked on economic, political, and military expansion to become global. Renaissance epistemology and basic theology adopted and promoted the concept of 'universal' that was inherited from the European Middle Ages. Hence, the concept of universal became global and the global was confused with universal. Essential here is that since the Enlightenment (18th century), theological philosophy and secular philosophy were the defensive pillars of

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the European epistemic and ontological march on the rest of the world. For this reason, this philosophy must be decolonised in order to liberate thinking (Mignolo, 2017:287).

Mignolo asserted in an interview that decoloniality is beyond academic research (Woons & Weier, 2017:11). The knowledge decolonisation project aims to bring to the foreground other epistemologies, other principles of knowledge, and other understanding. Consequently, there must be other economies, other politics, and other ethics (Mignolo, 2007:453). This process is about opening up space for the possibility of another world in which many worlds will co-exist (Mignolo, 2007:469). But it is important to note that the co-existence claimed here is not what the entire world likes to call 'modernity'. The colonial project, which considers that only the Occidental world is real, is still being promoted through (Western) modernity. Mignolo explained in an interview that:

> Once people understand the universal fictions of modernity and the logic of coloniality enacted in order to advance the promises of modernity, the question of how to delink from that bubble becomes the main motivating factor of decoloniality (Woons & Weier, 2017:11).

The root cause of coloniality's enduring strength lies in its inherent connection with modernity (Mignolo & Walsh, 2018:4). Complementing this argument, Gu (2020:600) states that this is a correct diagnosis of why coloniality continues to exist. It is deeply rooted in the 'cultural unconscious' which for the colonised people is similar to a painful memory. Drawing on Freud (1930), Gu (2020:600) describes the cultural unconscious as a lifestyle characterised mostly by repressed memories of traumas, experiences of pain, anxiety and conflict, or feelings of frustration and inferiority complex.

Moreover, Mignolo argues that the co-existing (derived from co-existence) is germinated from the engagement in epistemic reconstruction (Mignolo & Walsh, 2018:223). This is in line with Yates (2020:590) for whom the co-existence (*convivencia*), in relation to the 'interculturality' (*interculturalidad*) and the 'inter-relational re-existence' (*vincularidad*), shapes a reciprocal pedagogy based on complementarity, lived experience, and cosmologies. Clearly, the coexistence claimed here deals with what Walsh (Mignolo & Walsh, 2018:81) interprets as the acceptance of possibilities of other modes of being, thinking, knowing, sensing, and living.

Factors such as these may lead to defining decoloniality as the delinking from the colonial matrix of power (Woons & Weier, 2017:16), which refers to a structure of management and

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control operated (Mignolo & Walsh, 2018:125) by human beings through specific institutions (Woons & Weier, 2017:21). The term 'delinking' points to an ideological disconnection (Mignolo, 2007). It is also about the claim for being or getting out of a global injunction, that is, auto-determination (Mignolo, 2020:614). The term delinking can also be understood as the fact of extracting in order to win freedom or self-control (Quijano, 2007:177). With Ndlovu (2020:580), delinking refers to a disobedience that leads to a detachment from or a clear separation between entities.

Mignolo (2020:613) notes:

> My work was keen to understand the formation, transformation, control, and management of coloniality, or in shorthand, the colonial matrix of power (CMP), although there are other forms of colonial matrix. The history of CMP enabled me to understand the present conflict between the Western world's will to maintain its privileges (re-westernisation) and the rise of dissident states no longer willing to submit to Western dictates (de-westernisation).

The CMP implies that there is no capitalist economy without a world system. And the world system goes hand-in-hand with the triumphal narratives of modernity (Woons & Weier, 2017:18). Accordingly, global coloniality is not only political, economic and military, but also epistemic and cultural in all its domains (Mignolo & Walsh, 2018:249). It has to be understood that the colonial matrix of power engendered the other forms of colonial matrix such as knowledge, being, and nature or lands (Walsh, 2020:605), and formed together a block of pain that still causes disaster. Thus, there is no need to confuse decoloniality and modernity. The one is the complete opposite of the other, not in the sense of rejecting evolution or development and embracing a Middle Age lifestyle, but as Mignolo argues, it consists of decolonising the ways of knowing and being (Woons & Weier, 2017:16).

The multiform colonial matrix hidden under modernity promotes a type of society whose form of governance is characterised by a capitalist economy, corruption, dynastic formation, and manipulation of the voting population through money being poured into the media and advertising. But in the perspective of decolonisation – de-westernisation – the model of governance could be based on local or 'indigenous' past experiences and legacies that consist of governing and obeying at the same time (Woons & Weier, 2017:15).

In his essay titled 'The Advent of Black Thinkers and the Limits of Continental Philosophy' (2017), Mignolo examined the epistemic responses from and by people whose histories of

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knowing, being, living, and doing were not linked to their own local history. These histories were rather linked to the European forms of knowing, being, living, and doing. Such responses are always trapped in the categories that Eurocentrism imposed through Western languages and philosophy (Mignolo, 2017:287).

The delinking from Eurocentrism requires deep consideration. Hence, it can be understood from Mignolo (2017:287) that the call for decolonisation of knowledge and/or education is about dismantling Eurocentrism and its philosophy in order to liberate thinking and particularly the non-European forms of knowing, being, living, and doing. Mignolo's conception of decoloniality is more concerned with decolonising Western epistemology, ontology, and ways of knowledge production.

3.4 Tuhiwai Smith's decolonial theory approach

Tuhiwai Smith (1999) develops decolonial theory in research methods by exploring how the research process itself may contribute to the promotion of transformation and indigenous knowledge. According to Wilson (2001:216), Tuhiwai Smith explores research practices that propose alternatives to Western paradigms and that reject racism, ethnocentrism and exploitation. Patti Lather (cited in Tuhiwai Smith, 1999: i) also points out that Tuhiwai Smith urges researching and unsettling the rules of research towards practices that are more respectful, ethical, sympathetic and useful to face discriminatory practices, ethnocentric assumptions and exploitative research.

Across the world, people's histories, lives and dignity were interfered with and destroyed by colonial oppression (Tuhiwai Smith, 1999:19). Imperialism and colonialism brought complete disorder to colonised peoples, detaching them from their histories, their languages, their cultural practices, their environment, their social relations and their own ways of thinking, sensing and interacting with the world (Tuhiwai Smith, 1999:28). Thus, knowledge and culture were as much part of imperialism as simple materials and military strength (Tuhiwai Smith, 1999:58). This can be understood as knowledge and culture being influenced, controlled, and imprisoned by the colonialist/imperialist system.

Tuhiwai Smith (1999:42) notes:

> Most indigenous disapprovals of research are expressed within the terms of white research, academic research or outsider research. Details of how western scientists name themselves are inappropriate to indigenous people who have experienced

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implacable research of a deeply exploitative nature. From an indigenous perception, western research is more than just research that is placed in a positivist tradition. It is research that uses pressure and influence in any research study of indigenous peoples regarding cultural orientation and values. This includes different conceptualisation of notions such as time, space and subjectivity as well as different and competing theories of knowledge, particular forms of language, and structures of power.

It is important to understand that there are rules or procedures from which indigenous people and/or indigenous society were coded into the Western knowledge system. These are the rules of the conceptualisation and categorisation of the term 'indigenous'. In simple terms, these rules refer to a set of fixed items defined only by Western researchers, and which characterise indigenous peoples and their communities (Tuhiway Smith, 1999:43).

Moreover, Tuhiwai Smith (1999:42) points out that the dissimilarities between Western and indigenous conceptions of the world have always provided stark contrasts. Indigenous beliefs were considered shocking, repulsive and barbaric and were principal targets for the efforts of missionaries and/or colonisers. Many of those beliefs still persist; they are rooted in indigenous languages and stories and carved in memories. This makes sense with the claim for reconstructing the understanding of being human.

In fact, many of the tools designed to colonise indigenous peoples were designed specifically to destroy indigenous peoples by removing them from their lands, enslaving them and destroying their bodies. Above all, the main purpose was to destroy indigenous peoples' knowledges and lifestyles (Tuhiwai Smith, 2021). Therefore, it can be understood through Tuhiwai Smith's terms that decolonisation includes the claim for decolonising knowledge and being or humanity. It deals with liberating indigenous peoples and their knowledges, and recognising indigenous worldviews.

Tuhiwai Smith (1999:39) acknowledges that research has long been a tool to acculturate and dehumanise indigenous peoples because research or Western research is encoded in imperial and colonial discourses (Tuhiwai Smith, 1999:25) and prominently influences the position of the researcher (Sapalo, 2019:28). In fact, Western culture has frequently identified itself as the ethnocentric centre of legitimate knowledge. The Western ethnocentric view is that any work by indigenous peoples can only be identified as authentic knowledge if it is enrolled in a Western framework and has value for the dominant non-indigenous culture (Wilson, 2001:214). Tuhiwai Smith critiques dominant Western discourses of knowledge and objectivity by revealing how Western stories (stories of travellers and observers called

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colonisers) and Western considerations of truth are located within a particular cultural and social system that needs to be decolonised (Wilson, 2001:215).

When mentioned in diverse indigenous settings, research stirs up silence, conjures up bad memories, and raises an attitude that is knowing and disbelieving (Tuhiwai Smith, 1999:1). For Tuhiwai Smith, decolonisation is therefore concerned with having a more critical understanding of the underlying assumptions, motivations and values that inform research practices (Wilson, 2001:214). In this regard, decolonisation of knowledge is about decolonising research methodologies or ways of doing research through placing at the centre of research indigenous people themselves. The central place or first position of indigenous people claimed here is not presented as simple objects of research (researched), but rather as respectful knowledge holders that deserve to be represented as researchers (Tuhiwai Smith, 1999:125).

Decolonisation in the frame of research practices goes hand in hand with considering the self-determination of indigenous people (Tuhiwai Smith, 1999:116-117). Research should no longer be exploitative of peoples and communities. Research is something that is co-designed; it is collaborative, interactive; it works for the communities; their consent is full and nuanced; they know what they are consenting to (Tuhiwai Smith in interview with Benson & Salem, 2019).

Tuhiwai Smith (1999) is alert to the controversial ways in which data were collected in colonies or are collected in ancient colonies, leaving the power of describing and labelling to the 'West', and therefore marginalising the 'Other'. Sadly, this reality is still present in this day and age, and manifests in the confidence of researchers who pretend that the outcome of their scientific research or initiative will automatically benefit a community. This is a misconception (Sapalo, 2019:28). Thus, Tuhiwai Smith responds to the call for decolonisation by encouraging indigenous communities to develop an awareness of the importance of research and by convincing Western research institutions of the importance of indigenous involvement (Sapalo, 2019:29).

In summary, Tuhiwai Smith (2021) describes the decolonial approach or perspective as a method or process characterised by three phases:

1) With regard to the academic context, knowing the story of colonisation of knowledge.
2) Practising a decolonial attitude through being conscientiously part of a decolonial research community.

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3) Bringing back, revitalising, and enriching indigenous knowledge and other indigenous peoples' worldviews that have been suppressed.

Tuhiwai Smith (2021) states that the ongoing application of colonial methods is unable to deliver a decolonial approach. A decolonial approach entails thinking differently from colonialism. Therefore, decolonising knowledge is fundamentally in discordance with:

- Thinking in colonial ways
- Theorising in colonial ways
- Practising research in colonial ways
- Being familiar with the colonial mentality

3.5 Key thinking of the three theoretical approaches

I conclude that the three approaches are clearly similar either regarding the context of an overall vision (decolonisation), or regarding deductive perceptions and projections (decolonisation of knowledge and/or education). Similarly, either from the frame of the correspondence between the theoretical principles (delinking from, humanising), or from the frame of the observed phenomena or facts (hegemony of Western traditions), the three approaches are identical. In fact, the three theoretical approaches align or support each other in the following sense:

- Description of coloniality and its effects
- Conceptual approach of decolonisation
- Significance of decolonising knowledge and/or education

The three approaches propose that colonisation, neo-colonisation, and modernity constitute the same system represented in the ongoing colonial matrix (Mignolo, 2020). It is a system of exploitation, oppression, acculturation, dehumanisation, and destruction of the colonised, the non-Western or the Global South (Mbembe, 2016, Tuhiwai Smith, 2021). Therefore, the three approaches align in the sense that decolonisation could globally be the claim of delinking from the colonial matrix through restoring the humanity of indigenous people and achieving their self-determination.

Additionally, decolonisation is a claim for the acceptance of diversity (Mignolo & Walsh, 2018). It consists of critiquing the hegemonic Western academic and scientific research systems (Mbembe, 2016), and determining the alternatives to this hegemonic Western

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paradigm (Tuhiwai Smith, 1999). As a result, the three approaches together support the idea that decolonisation points to the liberation of alternative ways of thinking, knowing, being, and living.

In the particular frame of decolonising knowledge and/or education, the three approaches adopt the same understanding that decolonisation includes decolonising the politics of universities, curricula, pedagogies (Mbembe, 2016), epistemologies (Mignolo, in Woons & Weier, 2017), and research methodologies (Tuhiwai Smith, 1999). However, in this regard, the concern is contextualised. That is, putting the 'local' at the centre of the struggle. Mbembe (2016) contends that decolonisation of knowledge and/or education is placing Africa at the centre of knowledge production. In addition to this, Tuhiwai Smith (1999) and Mignolo (in Woons & Weier, 2017) assert that knowledge production must be based on indigenous frames.

In response to this, I adhere to these decolonial theoretical approaches. Decolonisation is the consideration of the natural context of knowledge production. Decolonisation must be linked to the question of local cultural identity. Decolonisation is the representation of the local perspective at the centre (Ngugi wa Thiong'o, 1981). As such, decolonisation could be understood as a form of 'contextualisation' or 'localisation'. The current study draws on this combined view (Mbembe, Mignolo, and Tuhiwai Smith) of decolonial theory to emphasise – in the local context of Gabon – the indigenous education system through the indigenous methods of teaching and learning into the process of knowledge transfer.

3.6 Conclusion

The chapter discussed the theoretical framework which is based on the decolonial theory. The chapter demonstrates that the decolonial theory highlighted in this study relies on three complementary approaches related to decolonisation of knowledge and/or education. The three approaches held respectively by Mbembe, Mignolo and Tuhiwai Smith adhere to the idea that decolonisation of knowledge and education points to the delinking from the western hegemony. This specifically means promoting African or indigenous ways of thinking and knowing within the process of producing knowledge and education. The current study adheres to the theoretical vision which links the decolonial thought with local knowledge and cultural identity issues.

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CHAPTER 4:
RESEARCH METHODOLOGY

4.1 Introduction

The current chapter describes the methodology as applied on the research site. I intend to discuss the methods I employed to obtain relevant information that constitutes the data of my research study. This includes the motivation for choosing these methods with regard to the research questions of my study. The discussion is organised according to the following main points:

- The research approach and research design;
- The sampling, which includes the research site and the selection of participants;
- The procedures of data collection as well as the research instruments.
- The application of ethical considerations and philosophy of the credibility of this study.

4.2 Research approach and research design

This research study employed a qualitative methodology, as it is appropriate to both the context of the study and the research purposes. According to Strauss and Corbin (1998), the qualitative method is the pre-eminent approach to use when the researcher explores areas about which little is known. It involves taking people's life experiences as the essence of what is real for them. In terms of knowledge transfer or teaching and learning practices, qualitative research provides in-depth descriptions of the practices of specific teachers and students in a school setting (Strauss & Corbin, 1998:4). In this study participants are *Bnenzi* (singular *Munenzi*: indigenous teachers or trainers) and *Bibassu* (singular *Ibassu*: indigenous learners or trainees). The specific environment, event, site, or space, etc., used during teaching and learning time, represent the forms of indigenous schools where indigenous classes take place.

As the term 'qualitative' means to centre attention on the quality of units as well as the techniques and significance of things, a qualitative approach allowed the researcher to link trainers' and trainees' experiences and behaviours to better understand and interpret the method of transferring knowledge. In fact, referring to empirical procedures for describing and interpreting, a qualitative approach ensures that the participants' knowledge or skills is

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properly presented, represented, and captured. Qualitative research is about finding solutions to questions that present how practical experiences (in the current study, particularly indigenous methods of knowledge transfer), are generated and given meaning (Denzin & Lincoln, 2005:2).

The current research is contextual, descriptive, and interpretative within rural communities in Gabon. For this reason, a case study research design was designated for the study and the focus was on indigenous methods to transfer knowledge into such areas as traditional medicine, social organisation, rural economy, etc. This design is appropriate as it offers an opportunity to study a question or a problem in depth (Bell, 2005). The research design should clearly indicate what units of analysis will be accessed to provide accurate information that is relevant to the research topic (Yin, 1994).

The case study approach therefore enables participants to narrate their stories and gives them the opportunity to describe their views of reality, and also allows the researcher to better understand the actions of participants and to interpret the perceptions they hold. The case study research design helped me to work with indigenous trainers and trainees individually and in focus-group discussions to know how indigenous trainers teach and indigenous trainees learn.
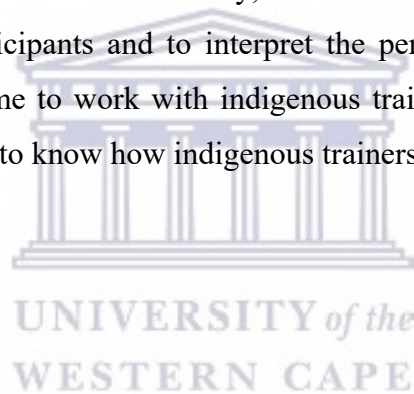
4.3 Sampling

Efron and Ravid (2013:62) assert that the sample should be participants that have relevant experience regarding the topic of the study. They should also have the ability to contribute to the understanding of the researcher. Therefore, for this study, I used purposive sampling which is, according to Maxwell (2005), a strategic selection in which particular settings, persons or activities are selected deliberately in order to provide information that cannot be obtained as well from other choices.

I selected 15 participants, five trainers (male and female) and ten trainees (male and female) from the village where the data collection took place. The participants were selected after demonstrating their relevant skills regarding habits and customs, particularly on how to perpetuate culture. Most of them are holders of indigenous knowledge, possessing or involved in indigenous training centres related predominantly to traditional medicine, social organisation, agriculture, and wickerwork.

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Table 4.1 overleaf introduces the participants in the research study, particularly the trainers. The purpose of this table is to present the trainers' profiles in order to justify their selection.

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Table 4.1: *Trainers' profiles*

Name/Pseudonym	Age	Gender	Mother tongue	Occupation/Activity
JBP	70	Male	Tsogo	Traditional Doctor Farmer Priest of Mwiri
CM	53	Female	Punu Galoa	Weaving expert Shopkeeper
EM	63	Male	Gisir	Priest of Bwiti Palm wine seller Farmer Pharmacopeia expert
JO	59	Female	Gisir Akélé	Traditional doctor Farmer
LM	63	Male	Gisir	Customary chief of the community Priest of Bwiti Wickerwork expert Oral art expert

In this table, the trainers involved in the research study are identified. Their pseudonyms, age, gender, mother tongue, and occupation are provided. These individuals' details constituted the criteria that served for their selection on behalf of other trainers in the village.

Table 4.2 overleaf introduces the trainees involved in this research study. The purpose of this table is to present the trainees' profiles in order to justify the choice of these participants.

Table 4.2: *Trainees' profiles*

Name/Pseudonym	Age	Gender	Mother tongue	Occupation/Activity
DMM	19	Male	Punu	Student/Middle school (Grade 8)
HDI	22	Male	Gisir Akélé	Student/University (Undergrad. 1) Bwiti follower
PLKN	26	Female	Gisir	Ndjembè follower Farmer
GRM	24	Male	Gisir Galoa	Traditional medicine learner Hunter
JM	19	Female	Galoa Gisir	Student/Middle school (Grade 7) Weaving expert
WIM	27	Male	Gisir Akélé	Hunter Farmer
EGGB	20	Male	Vungu Galoa	Mwiri follower Farmer Hunter Student/High school (Grade 10)
HM	27	Male	Punu	Student/University (Undergrad. 1) Farmer Fisherman
JWII	19	Male	Galoa Gisir	Student/Middle school (Grade 7)
AM	46	Male	Gisir Punu	Farmer Oral art expert

The information provided in Table 4.2 presents the trainees. These specific details served for their selection, as was the case for the trainers in Table 4.1.

The research study took place in two villages, namely Inguendja and Kery, near Lambaréné, which is the capital city of the Moyen-Ogooué province. Both villages belong to the district of Ogooué et Lacs in the same province. The ethnic and linguistic communities inhabiting these villages are mostly the Galoa and the Gisir, who are part of the Bantu peoples of Gabon (Ratanga Atoz, 1999). The dominant language in Inguendja is the Galoa language, and the dominant language in Kery is the Gisir language. Subsequently, Inguendja and Kery are respectively referred to as a Galoa village and a Gisir village. However, data collection principally took place in Kery where the forms of indigenous school are visible and the Gabonese culture is more represented with the existence of various ethno-linguistic groups (i.e., Gisir, Punu, Galoa, Akélé, Tsogo, Vungu, nzebi, Fang-Atsi, Lumbu, etc.) in the village. Inguendja served basically as the place for data comparison and verification.

Figure 4.1 below presents the research site localisation. Its purpose is to identify cartographically the area where the data collection took place.
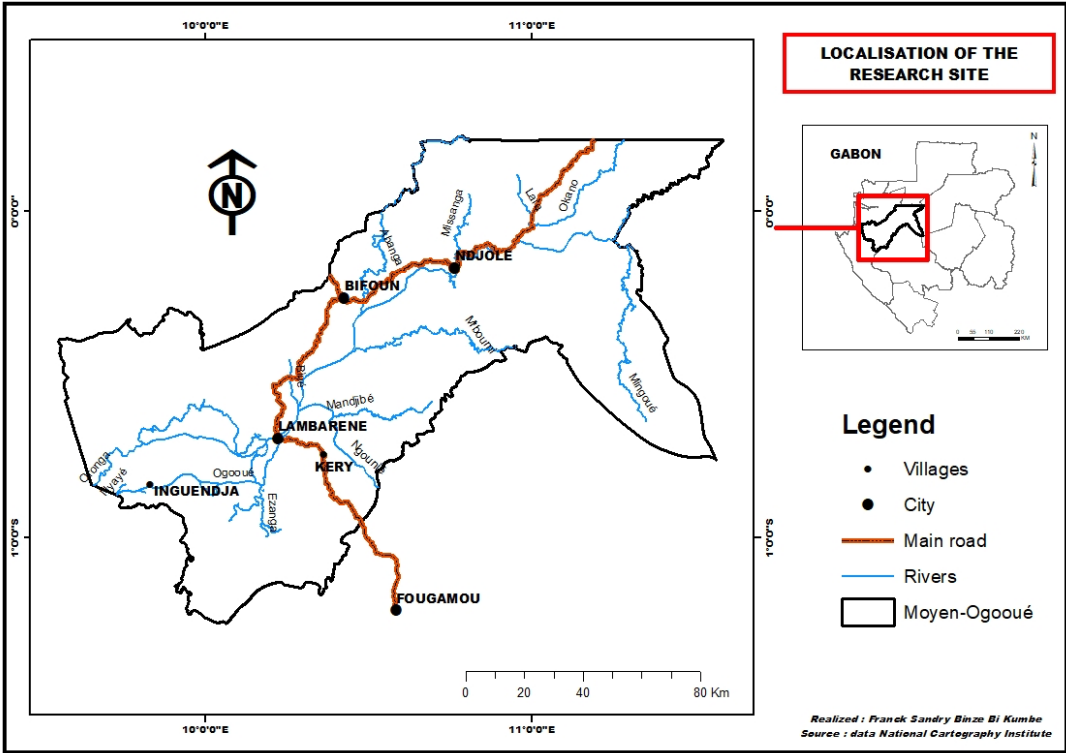
Figure 4.1: *Localisation of the research site*

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On the right of Figure 4.1, the locality of the province of Moyen-Ogooué on the map of Gabon may be seen, as well as the legend. On the left of this figure, Inguendja and Kery are shown in the province of Moyen-Ogooué. Access to Kery village is clearly demarcated through the main road, while access to Inguendja village is through the river route.

I am familiar with the culture, environment and languages of these communities. People living in Kery and Inguendja are characterised by poverty and strict respect for ancestral customs, and most of them do not have adequate formal education (Western education). A preliminary observation I conducted in 2017 within the framework of the RISE project showed that none of the 50 participants had gone beyond Grade 10 of formal schooling.

Living along the Ogooué River (Galoa) and in the grand forest of that region (Gisir), these communities were the first in the province of Moyen-Ogooué to be in contact with Western people in the context of exploration, missionaries, and colonisation (Ratanga Atoz, 1999).

4.4 Data collection

The research sub-questions of this study are:

(1) What indigenous teaching and learning methods are used in rural communities for knowledge transfer?

(2) What is the impact of those methods on indigenous people?

(3) What do indigenous people think about their methods in comparison to Western methods?

(4) What do indigenous people think about those methods with regard to education and sustainability?

These four questions derive from the main question of the study which deals with the nature of the indigenous teaching and learning methods of knowledge transfer in Gabon's rural communities. By nature, I imply the characteristics of the indigenous teaching and learning methods. This concerns their names, roles and/or functions, and their basic quality.

In the light of these four research sub-questions, I focus on exploring, describing and understanding trainers' and trainees' experiences (including their behaviours) on indigenous procedures of knowledge transfer. In this study, the formal schooling of participants is low. No trainers reached Grade 9 in school. Only two trainees were university students, one was a high school student in Grade 10, and three others were respectively in Grade 8 and Grade 7.

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Because of this (low level of formal schooling), I presumed that participants' manners and practices were dissimilar to those acquired in Western schools. In such a context, I understood that questionnaires and surveys which are mostly Western approaches to research that I learned at university might not be appropriate tools for data collection. Hence, I proceeded with individual and focus-group interviews to collect data from participants through narratives (their voices were important for this study). These interviews referred to the kind of conversations indigenous people have during their work, either at home or in the forest. It enabled me to collect relevant data to answer the research questions. In addition, I used recordings (audio, video) and personal notes. Thus, data were collected through three procedures: observation, interviews, and focus-group discussions.

4.4.1 Observation

The observation method enables the researcher to see how people behave in normal or real situations or environments (Burton & Bartlett, 2005). In addition, Marshall and Rossman (1999:81-82) have defined observation as the systematic description of events, behaviours, and artefacts in the social setting chosen for the study. An observer can gather a large volume of data within a short time, drawn from the observation of new techniques, strategies, ideas and resources (Hartas, 2010).

I used participative observation and an ethnographic perspective of data collection that involves the capturing of visual data through videos during indigenous teaching and learning practices (place, time and circumstances). As I was in Kery and Inguendja, living with people for five months, this allowed me to observe the everyday activities of participants in order to explore and understand how indigenous teachers teach and indigenous trainees learn. I observed how they engage with the knowledge-transfer process. I intended a total of 21 days to complete the phase of direct observation. Field notes were taken during the observation process.

For observing I mingled with people, communities, and specifically the participants. I was involved voluntarily in their activities (farming, hunting, fishing, ceremonies, rituals, etc.). The sort of 'indigenous teaching and learning class' was located principally in three places. First, in the forest where I attended the traditional medicine lessons. Second, at the river, where specific water purification rituals as well as some healthcare preparations with water

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medicinal plants took place. Third, at home, where specific lessons, ceremonies and other rituals also occurred.

During the direct observation phase, lessons (teaching and learning moments) were audio and video recorded for analysis purposes. Photographs were also included. The analysis of the photographs, audiotapes and videos also served to prepare questions for the interviews with participants.

Table 4.3 overleaf presents the direct observation phase and its references. The purpose of this table is to demonstrate how the observation phase was technically managed.

Table 4.3: *Observation phase*

Participants concerned	Subjects/activities observed	Observation context and/or social environment	Techniques used to observe	Observation location	Observation duration
All trainers All the trainees	Agricultural activities Water purification Ancestral worship Traditional music Telling stories around the fire Bwiti ceremonies Funerals Wedding ceremonies Fishing parties Haunting parties Attending indigenous and formal classrooms Playing football with young people of the village Enthronement/consecration ceremonies House construction activities Palm wine production Weaving activities Wickerwork activities Traditional medicine activities, etc.	Rural lifestyle Poverty of population Veneration of ancestral culture Spiritual connection with the spirits Frustration regarding government actions Lack of interest in government affairs	Involvement in activities Ethno-cultural identification Personal experimentation Capture	In the forest, including the little woods behind houses. At the river, including in little boats on the river during fishing. At home, including verandas, yards, and indigenous sheds or hangars. At school, including teaching & learning places or indigenous schools and formal school (public primary school of Kery).	Twenty-one days for the formal direct observation phase, using only recordings and notes in Kery village. Five months for the entire period of data collection, including continual informal direct observations, interview phase, focus-group discussion, and six days spent in Inguendja village.

The observation context in Table 4.3 refers to the social environment in which I gathered data. This social environment is basically characterised by rural life, poverty, a culture of spirituality and veneration, and a deep mistrust of government actions to improve their lives. Also, this table demonstrates that I had been with both trainers and trainees to observe how they deal respectively with knowledge transmission and knowledge acquisition within their multiple activities. I observed how they experienced and perceived indigenous knowledge in teaching and learning systems. It is also important to note that the (formal) observation phase was completed in 21 days. The rest of the period, including six days spent in Inguendja village, reflect continual (informal) observations and interviews, and focus-group discussions.

4.4.2 Interviews

Interviews can allow the researcher to identify what the person holds as knowledge or information, what are values or preferences attached to the person, and what are attitudes or beliefs of the person. For this research study, semi-structured interviews were appropriate as they allowed me to establish directly a link between the main question, the sub-questions, and the pre-supposed data I needed in order to reach the principal aim of my study. According to Koshy (2010:87), the researcher prepares both the main questions and the sub-questions, which can be used to investigate further ideas and collect more information, but further questions can be added to explore more information when it is necessary in the current interview (Norton, 2009).

For this reason, I used an interview guide in which further questions were included in order to obtain more information. The research sub-questions presented above are investigative and reflective. Therefore, it demands a certain vigilance and ability to obtain adequate information or answers. This is primarily my responsibility as a researcher, since I have objectives to achieve with respect to my research study. It is in this sense that I asked additional questions of participants during interviews in order to improve their understanding of the research questions and to enable them to answer them.

I used two interview guides, owing to the double situation covering both trainers and trainees. At the beginning, the interview guides each contained ten questions which were an extension of the principal research sub-questions of this study. However, at the end, the interview guides covered 16 questions for trainers and 19 for trainees.

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In semi-structured interviews, there is a possibility to use open-ended questions that allow for additional comments to be noted during the interview and other possibilities to be briefly explored (Bogdan & Biklen, 2006). As the interview questions above reflect, I used both open- and closed-ended questions to understand what participants think, feel, and do. I aimed to understand participants' perspectives on their lives, experiences or situations as expressed in their own words.

The interviews were audio-recorded, specifically to capture all the linguistic nuances of wording and framing. The interviews were face to face. They were held at the indigenous school or on the particular site where the teaching and learning took place. That is, in the forest, on the river, and at home, as stated earlier. The main points for the trainee interviews considered how they acquire knowledge. But for trainers, the interviews included both points about how they teach and how their apprentices learn. I conducted individual interviews with all the participants. Therefore, I conducted a total of 15 individual interviews. The interviews were conducted in the mother tongue and in the French language. This means I translated the questions from English into French. The following table presents the references of the interviews, i.e. Inter 1.

Table 4.4 overleaf presents individual interviews as well as their information. The purpose of this table is to give an understanding of the organisation of the individual interviews.
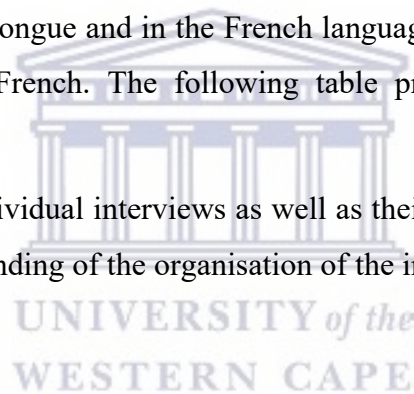
Table 4.4: *Interview information*

Pseudonym/Names	Interviews	Duration	Language of the interview
Trainers			
JBP	Inter 1	87 minutes	Tsogo and French
CM	Inter 2	64 minutes	Punu and Galoa
EM	Inter 3	128 minutes	Gisir
JO	Inter 4	76 minutes	Gisir, Akélé, and French
LM	Inter 5	147 minutes	Gisir
Trainees			
DMM	Inter 6	39 minutes	French
HDI	Inter 7	68 minutes	French
PLKN	Inter 8	52 minutes	Gisir
GRM	Inter 9	80 minutes	Gisir
JM	Inter 10	33 minutes	French
WIM	Inter 11	38 minutes	Gisir
EGGB	Inter 12	70 minutes	Vungu
HM	Inter 13	56 minutes	Punu
JWII	Inter 14	71 minutes	Galoa
AM	Inter 15	83 minutes	Punu

It can be seen in Table 4.4 that each participant was interviewed. It can be also observed that more long interviews (duration) were recorded with trainers than with trainees. The interviews were organised into seven different local languages, including French.

4.4.3 Focus-group discussion

According to Denscombe (2010:177), focus groups consist of six to nine persons, who work together and are led by the researcher to explore attitudes and perceptions, feelings and ideas about a topic. They could generate rich conversation about specific issues related to my study, such as the incorporation of indigenous knowledge into the teaching-learning system as well as all methods and materials used in the indigenous process of transferring knowledge.

As in most rural communities in Gabon, indigenous education is most often confined within ancestral religions or traditional rituals of initiates such as Bwiti, Ndjobi, Mwiri, Ndjembè, etc. These traditional congregations or religious circles are the actual training centres whose members are very often reluctant to share their specific knowledge or experiences with non-members. One has to be an initiate to be eligible to be provided with knowledge. Consequently, discussion within a group is significant for information verification, as it would encourage conversation, and quiet/shy participants would feel comfortable among their peers. The purpose of the focus-group interview was to both confirm data obtained from individual interviews and to gather additional data.

All participants were invited to the focus-group discussions. There was a focus-group discussion with trainers and a separate one for participant trainees. As the participants' trainers comprised five members, one trainee (the older) was added into this focus group in order to respect the definition of the focus-group discussion proposed by Denscombe (2010:177-178). As such, the trainers' focus-group discussion constituted six persons, while the trainees' focus-group discussion comprised nine persons. The reason for the focus group was to explore through information shared at a group level, the nature of the indigenous process of transferring knowledge and what participants think about this process with regard to education. For this, two main questions were asked to guide the focus-group discussions:

- **Question 1:** What do you think about indigenous teaching and learning methods in comparison to Western teaching and learning methods or formal school?
- **Question 2:** What do you think about those methods with regard to education and sustainability?

The focus-group discussion was audio-recorded and was held at the same place as the interviews. Table 4.5 overleaf presents the focus-group discussion and the details of its process. The purpose of this table is to give an understanding of the organisation of the focus-group discussion.

Table 4.5: *Focus group discussion*

Pseudonym/Names	Group discussion	Duration	Languages of the discussion
Trainers			
JBP	Group 1	120 minutes	Gisir
CM			
EM			Punu
JO			
			French
Trainees			
DMM	Group 2	120 minutes	Gisir
HDI			
PLKN			French
GRM			
JM			
WIM			
EGGB			
HM			
JWII			
AM			

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Two groups were formed, and the duration of each group discussion was 120 minutes. In group 1, the discussion was held in three local languages, including Gabonese French. Whereas in group 2, the discussion was held in Gisir and French. It is important to note here that the Gisir and Punu languages are similar.

4.5 Ethical considerations

The ethical considerations of this research study are presented as follows. Firstly, ethical clearance was applied for and obtained from the Humanities and Social Sciences Research Ethics Committee (HSSREC) of the University of the Western Cape (UWC). Ethical clearance was obtained through an application made to the Research Committee of the Faculty of Education (RCFE) and tabled at the Senate Higher Degrees Committee (SHDC).

Secondly, I obtained authorisation through ethical clearance to conduct the research study in Gabon. This authorisation or permission included the informed consent of the participants in the research study. In fact, I organised a workshop to inform the participants of the nature of the study. Consent letters were distributed and signed by the participants, knowing that they might withdraw from participating in the study at any time, without any consequences.

Thirdly, I guaranteed the participants' confidentiality in writing. The participants were assured that all information provided would be strictly confidential and no names would be revealed in any written research report or in the thesis. Their anonymity was respected. The participants were assured several times that they had the right to withdraw from the research project if they feared any consequence from their participation, if their anonymity were endangered, or if they felt uncomfortable about the research process for any reason.

4.6 Conclusion

This chapter discussed the research methodology, specifically the research approach, research design, sampling, data-collection procedures, and ethical considerations. The chapter was basically about the data-collection techniques in the site where the research study took place. This includes all the adaptations that I experienced in order to collect data in the most appropriate ways.

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CHAPTER 5:

DATA PRESENTATION AND ANALYSIS

5.1 Introduction

This chapter presents and analyses the qualitative data collected through observations, interviews and focus-group discussions. The analysis of the data focuses on the qualitative methods as previously indicated in Section 4.2 of the preceding chapter. The data were analysed at the first level through manual cleaning, scanning and categorisation into themes. Categorisation, according to Creswell (2009:200), is fundamental for qualitative data analysis. The analysis approach using themes enabled me to be immersed in the details of the data in order to interpret it efficiently.

Therefore, in the current chapter, the data are simultaneously presented and analysed. The themes include:

- Types of indigenous knowledge

- Types of indigenous teaching and learning methods,

- Nature of indigenous teaching and learning methods

- Impact of indigenous teaching and learning methods among indigenous people

- Comparison between indigenous methods and Western methods

- Impact of indigenous teaching and learning methods in education and sustainability

5.2 Theme 1: Types of indigenous knowledge

5.2.1 Data from observation

These types of indigenous knowledges are data gathered through observation. As I have alluded to in the methodology chapter, Chapter 4, to collect my data, I spent several days with the inhabitants of the village of Kery, to observe how they proceeded to teach and to learn. I was involved voluntarily with participants in their activities of farming, fishing, hunting, traditional medicine, house building, ancestral worship, weaving, palm wine production, water purification, and wickerwork. Therefore, it is about direct observation as a researcher. I observed through seeing, listening, and doing.

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5.2.1.1 Perception of indigenous knowledge

I observed field activities, for example, farming as an activity. But farming also includes many varieties of activities that include ploughing, weeding, planting, harvesting, etc. This is applicable also to traditional medicine, hunting, fishing, weaving, wickerwork, building construction, etc. Similarly, what indigenous people call practice could also refer to a set of practices. I observed that indigenous knowledge refers to the activities and practices of indigenous people. In addition, there are many types of indigenous knowledges.

5.2.1.2 Indigenous model of schooling

I observed that Bwiti, Bilombo, Mwiri, Ndjembè, and Mabanzi are not only traditional religions. The functioning of these traditional religions is similar to the functioning of schools. There are training programmes, lessons, grades, and graduation ceremonies.

5.2.1.3 Significance of indigenous lesson

I also observed that whenever a trainer declares, "I am going to teach you a lesson" or when a trainee declares, "I am going to learn a lesson", the term 'lesson' refers directly to the activity or field of activities. The term also refers to a practice or a set of practices.
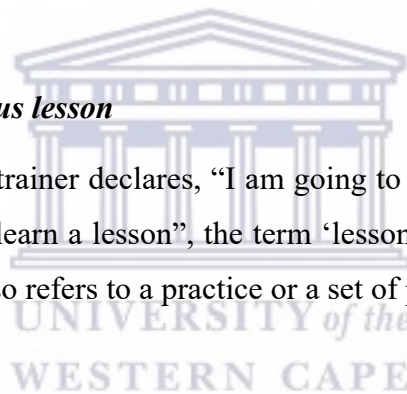
5.2.1.4 Time and place of teaching and learning

There are three main times of indigenous teaching and learning: morning, evening, and night. Additionally, there are three main locations of indigenous teaching and learning: the forest, river, and home.

5.2.1.5 Teaching and learning classes and instruments

During the teaching and learning class, there are no written notes. All indigenous teaching and learning are done by word of mouth, observation, doing, and memorising. Moreover, there are materials and/or instruments of teaching and learning. These instruments are objects that are both material (relics, works of art, utensils, traditional symbols, etc.) and immaterial (dreams, songs, mythical stories, etc.) which can also become indigenous methods of teaching and learning.

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The indigenous teaching and learning methods are both natural and spiritual.

5.2.2 Data from interviews

Data related to the types of indigenous knowledge were also gathered from interviews with three of the five participant-trainers of this research study. These three participants are recognised in the community of Kery as teachers in the indigenous school model characterised by Bwiti and Mwiri as revealed in Table 4.1 in Chapter 4. The interviews in this context appeared to be in keeping with the perception of indigenous knowledge. The following responses are extracts from the interviews that illustrate the views of indigenous teachers:

Researcher: What knowledge do you teach to younger generations?

Trainer JBP: Knowledge that I teach to young people is our ancestors' knowledge. Our ancestors started with that knowledge and they transferred it to our fathers who transferred it to us. Today, it is our responsibility to transfer it to the young generation. They will also do the same in the future. That knowledge is everything that we know through community history, personal experience, cultural practices and beliefs.

Trainer EM: I teach our traditions or culture. It is about a set of knowledge that includes traditional customs, beliefs, wisdom, rituals, activities, and practices. So, the knowledge that I teach is all practices that we inherited from our ancestors and fathers, which reflect our indigenous culture, i.e., traditional medicine, traditional laws, agriculture, haunting, fishing, indigenous religions, indigenous practices of weaving and wickerwork, indigenous chemistry, indigenous art and craft, etc. That knowledge is everything that we do or that symbolises our understanding of the world.

Trainer LM: All knowledge we teach or we transmit to younger generations is related to traditional modes of doing and understanding things. It deals with our perception of the world and life. So, the knowledge that we teach is about indigenous activities and practices that portray the organisation and functioning of our community.

The above responses emphasise the fact that indigenous knowledge refers to all activities and practices of indigenous people. Indigenous knowledge covers a diversity of knowledges.

5.2.3 Summary of Theme 1

It appears that the process of teaching and learning for the purpose of transferring knowledge takes place within specific fields. The fields are also referred to as activities. In Gabon's rural communities, particularly in the village of Kery, most activities that characterise the community's life in terms of politics, society, culture, and business are related to agriculture, hunting, fishing, traditional medicine, wickerwork, weaving, ancestral worship, ancestral political systems and ancestral forms of commerce. These activities constitute the set of indigenous knowledge that is intended to be taught and learned. In other words, these activities are the forms of indigenous lessons used in the process of knowledge transfer.

Table 5.1 overleaf presents indigenous lessons in a categorised format. The purpose of this table is twofold. First, it shows the types of indigenous knowledge that serve as indigenous lessons in the process of knowledge transfer. Second, it also shows how indigenous lessons are characterised and structured.
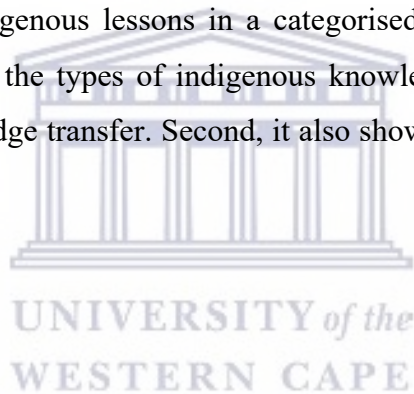
Table 5.1: *Categorisation of types of indigenous lessons*

Indigenous Lessons	
Types of Lessons	**Sub-lessons**
Agriculture	• *Clearing* • *Slaughter* • *Ploughing* • *Planting* • *Weeding* • *Harvesting, etc.*
Ancestral forms of economy	• *Production of palm wine* • *Production of sugar wine* • *Commerce of food, etc.*
Ancestral political systems	• *Conflict resolution* • *Indigenous systems of governance* • *Enthronisation ceremonies* • *Oratory art* • *Partition of heritage* • *Succession procedures* • *Marriage* • *Birth* • *Funerals etc.*
Ancestral worship	• *Preparation for rituals* • *Beliefs* • *Protocol for ceremonies* • *Practice of witchcraft, etc.*
Communication	• *Languages* • *Communication with the spirits and/or ancestors* • *Communication with nature* • *Traditional music; etc.*
Fishing	• *Fishing with traps* • *Making salted fish* • *Making smoked fish* • *Preparing a fishing day, etc.*

History	• *Community origins* • *Tribe conflicts* • *Meeting with foreign people (whites), etc.*
House construction	• *Timber cutting and carving* • *Production of material for house construction (planks, straw, etc.)* • *House model construction, etc.*
Hunting	• *Hunting with traps* • *Hunting with weapons* • *Preparing a hunting day, etc.*
Traditional medicine	• *Pharmacopeia* • *Study of medicinal plants* • *Conservation of medication* • *Healing with the use of magic, etc.*
Weaving	• *Production of traditional mats* • *Production of animal and fish traps* • *Production of objects with lianas such as traditional baskets, etc.*
Wickerwork	• *Production of utensils or cooking tools* • *Production of hunting material* • *Production of fishing material* • *Production of objects of house decoration, etc.*

Table 5.1 above reveals:

- Indigenous lessons include main and sub-lessons.
- The list of these main and sub-lessons is not exhaustive.
- Indigenous knowledge is not limited.
- The indigenous lessons presented in Table 5.1 correspond to or derive from the activities or occupations of indigenous people presented previously in Tables 4.1 and 4.2. This confirms that there is a closer link or correspondence between indigenous activities and indigenous lessons.

Drawing on the definition that indigenous knowledge refers to a set of practices of indigenous people (Nel 2006:99), it can be understood that indigenous practices are daily activities. These daily activities are also considered indigenous lessons which young indigenous people must be taught in the knowledge or education acquisition process. Therefore, speaking about indigenous activities includes indigenous knowledge and practices, as well as indigenous lessons. In other words, the following terms are synonyms:

- Indigenous activity
- Indigenous practice
- Indigenous lesson
- Indigenous knowledge
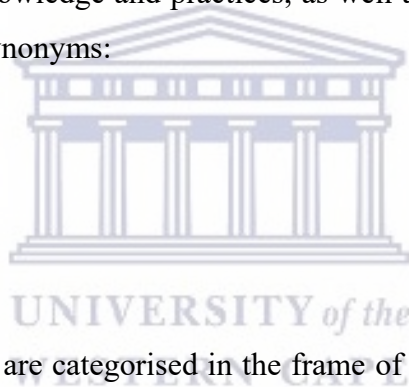
Furthermore, indigenous lessons are categorised in the frame of the indigenous school system. That is, teaching and learning is indigenously categorised. Each category refers to the acquisition of a specific educational need or competence. In simple terms, each category constitutes specific knowledge to be taught and learned. This is confirmed by the existence of a particular categorisation system of indigenous lessons and continual sub-lessons as illustrated in Figure 5.1.

Figure 5.1 overleaf presents the categorisation of indigenous lessons. Figure 5.1 indicates that in the context of the indigenous school or education model, lessons are categorised according to function.
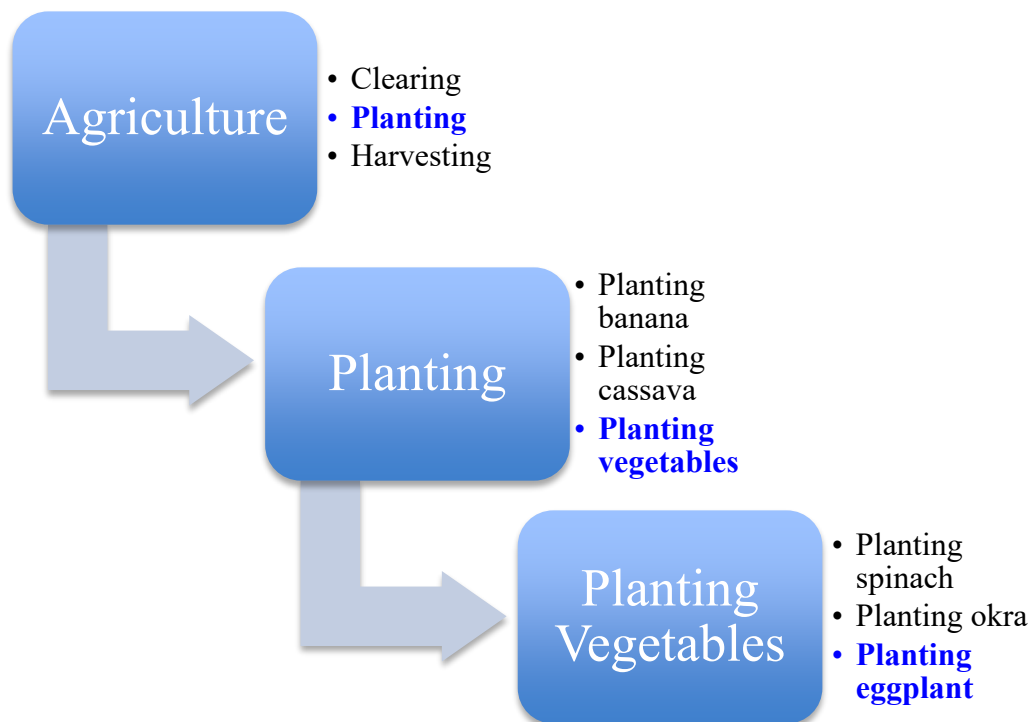
Figure 5.1: *Categorisation of indigenous lessons*

In Figure 5.1 above:

- Each new level of the created category constitutes a category of sub-lessons.
- The preceding category from which the new category is created refers to a category of lessons which in this specific context can have the status of fields.
- The category that creates or from which a new category is derived, is considered a list of lessons, while the new category created is a specific list of sub-lessons.

This means, for example, that:

1) *Agriculture* is an indigenous lesson and *Planting* an indigenous sub-lesson.
2) *Planting* becomes an indigenous lesson and *Planting Vegetables* an indigenous sub-lesson.
3) *Planting Vegetables* becomes an indigenous lesson and *Planting Eggplant* an indigenous sub-lesson.

The indigenous teaching and learning process is an ongoing process of knowledge production and education acquisition. That is why, from the example of Figure 5.1, a fourth level of categorisation could be created with *Planting Eggplant* as an indigenous lesson and the

indigenous sub-lessons could be ***planting minèk*** (smaller eggplant variety), ***planting tsari*** (medium eggplant variety), or ***planting mbolongu*** (big eggplant variety).

5.3 Theme 2: Types of indigenous teaching and learning methods of knowledge transfer

As stated earlier, this section explores the types of indigenous teaching and learning methods of knowledge transfer. These types of data have been gathered through interviews. The interviews here include individual and group interviews. The interviews or questions emphasised in this section focus mainly on the meaning of indigenous teaching and learning methods. The meaning includes their names and their respective roles or functions.

The questions that guided the interviews with the purpose of collecting only data related to the meaning of indigenous teaching and learning methods were asked to both trainers and trainees. The questions are:

- **Question 1**: How many indigenous teaching and learning methods of knowledge transfer do you know? Can you name them?
- **Question 2**: What is the role of each of these methods? How can you describe it?

5.3.1 Meaning of indigenous teaching and learning methods of knowledge transfer

1) Observation

This method is used in situations where items are identified. For example, in the context of traditional medicine, the method consists of the learner observing and identifying medicinal plants in order to know them. The identification is made by the trainer during the learning session. It is all about seeing, as explained by Trainer JBP in the following extract[3]:

> Medicinal plants, for example, cannot be taught or learned in a living room at home! It is important to move towards those plants in order to identify them well. (Trainer JBP: Inter 1)

This phase precedes the phase of doing or practising in the process of transferring knowledge:

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[3] Transcriptions have been translated very literally from either Gabonese French or indigenous languages. For authenticity, transcriptions are presented as spoken by the interviewees.

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> Seeing is the phase of observation which comes before every doing. It is very important for the learner to see how the teacher does things before doing it him/herself. (Trainer JBP: Inter 1)

Another participant argued:

> This method is used in all lessons. In both teaching and learning processes, we first observe or see how things are working. In both cases, it allows the teacher to get an idea about the learner's aptitudes to learn. And it allows the learner to see himself/herself – what he/she needs to be more prepared for the training. (Trainer LM: Inter 5)

Table 5.2 below presents the types of indigenous lessons observed. This table indicates the context within which the indigenous teaching and learning method occurred during observation.

Table 5.2: *Types of indigenous lessons within the observation method*

Type of indigenous lesson	Indigenous teaching and learning method
• Agriculture activities • Commerce • Conflict resolution • Fishing • Oratory art • Palm and sugar wine production • Traditional medicine • Weaving activities • Wickerwork activities, etc.	Observation

In Table 5.2 above, the method of *observation* is presented within indigenous curricula. Participants agreed that *observation* could be used in all forms of lessons.

2) *Practical*

The practical method is one of the principal methods of teaching and learning used in rural communities. Doing, practising or experimenting is as fundamental as observing. This method is widely used in all forms of training or education. The following extracts substantiate this point.

To educate our children, we generally ask them to do what we, their parents, do. I have seen how my father was practising oratory art. And he asked me to do like him. Today I use the same way to teach my children. (Trainer LM: Inter 5)

The best of learning is practice. Even if you have been shown only once, but because you practise all the time you will get knowledge on what you are exercising. You can perform better than the person who taught you. (Trainer CM: Inter 2)

In our manners of transferring knowledge, we do not talk a lot. What is important for us is proceeding to practise in order to directly experience things. [The] more the learner gets experience, the more he/she gets knowledge and is able to share properly with others for the good of the community. This is the reason why we consider more the method of doing/practising in any knowledge transfer process. This is what I do when I teach on how to produce baskets, traps, and mats. It is the same procedure in the context of pharmacopeia, agriculture, and other activities. (Trainer CM: Inter 2)

All participants indicated that the status of the practical method in the knowledge transfer process is similar to the status of the *observation* method. Both methods can be used within all types of lessons. The practical method is also applicable in every training process or system of education transfer in the world.

Table 5.3 overleaf presents the types of indigenous lessons within the practical method. The purpose of this table is similar to the purpose outlined in Table 5.2 above. All the tables of the current section, or the following tables related to the use of indigenous teaching and learning methods, have the same purpose: indicating the context within the indigenous teaching and learning method.

Table 5.3: *Types of indigenous lessons within the practical method*

Type of indigenous lesson	Indigenous teaching and learning method
- Agriculture activities - Fishing - House construction - Hunting - Oratory art - Palm wine production - Traditional commerce - Weaving activities - Wickerwork activities, etc.	Practical

In Table 5.3 above, some indigenous lessons are presented in terms of activities. All participants confirmed that these indigenous lessons comprise several actions or activities. Each particular action or activity is studied through practice. This is in line with the illustration of agricultural activities in Figure 5.1. A further illustrating is the weaving activities in Table 5.1. Weaving activities include the use of lianas and raffia for making mats, baskets, fish traps, cloth, etc. Each of these activities (mats, baskets, cloth, traps) is taught and learned in practice.

Participants agreed that the practical method allows learners to be trained within a short time. This means that the method is appropriate for short and long training programmes. That is, this method is also about increasing the daily number of exercises related to doing/practising.
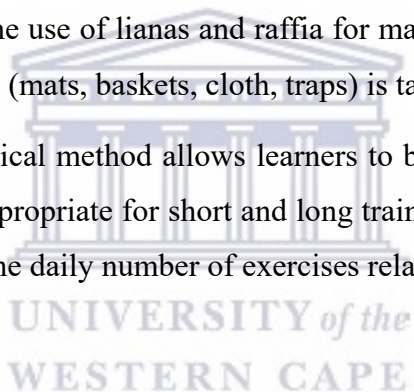
3) *Collecting*

This method is mostly used in terms of gathering provisions (food, drinking water or water purification):

> Collecting consists of making a choice of good things to consume and rejecting what is bad. Collecting is selecting. For example, when we get drinking water, there is a technique that allows us to draw only clean water. Another example is about harvesting. There are ways to harvest. If we put together good and bad seeds or fruits (food), we take the risk of losing all food, because the bad food will rot the good food. So, we use the method of collecting to show young people how to harvest well. (Trainer JO: Inter 4)

Additionally, the method used in the context of traditional medicine, particularly in the treatment of disease, is captured in the following three excerpts:

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To be a good healer, it is important to know how to collect medicinal plants. [The] healing process starts by collecting medication. So, we teach through the method of collecting in order to give knowledge about how to heal diseases. (Trainer: Inter 5)

Medicinal plants are living beings. We must respect them. When we take some substances from the plant (leaves, creepers, barks, roots, etc.) that should serve to heal patients, we must ask authorisation and benediction from the plant. If we do not do this, the healing process will not work. The medicinal plant has a spirit and a language. So, there is a way to collect medicinal plants. (Trainer EM: Inter 3)

Collecting is one of the methods the teacher uses to teach us about healthcare. It starts by identifying the medicinal plants before proceeding to collect it. There are many ways to collect medication. It includes first identifying the site. Second, asking permission for collecting from the spirit of the site. Third, asking permission from the plant itself. The teacher tells us that if you do not know how to collect medicinal plants, you will never know how to heal people. (Trainee GRM: Inter 9)

Table 5.4 below presents the types of indigenous lessons within the collecting method.

Table 5.4: *Types of indigenous lessons within the collecting method*

Type of indigenous lesson	Indigenous teaching and learning method
• Harvesting • Traditional medicine • Water purification, etc.	Collecting

In table 5.4 above, the list of indigenous lessons is short. Participants appeared to be convinced that the collecting method is not used in an important number of indigenous lessons. But the collecting method is a long process which includes many steps and conditions that are medical and ecological. Additionally, the method of collecting includes the following:

- Identifying the location of medicinal plants where collection will take place.

- Conversing with medicinal plants before proceeding to collect.

- Considering the environment of the medicinal plants. The plants cannot be taken anywhere and anyhow).

- Conserving and storing the medicinal plants while waiting for the right time for their use.

It appears from the participant interviews that collecting is selecting. It can also be a classification. Classification or categorisation is perceived as a significant activity involved in indigenous education.

4) *Initiation*

This method is known as the one to access specific knowledge. The process of initiation is reserved for particular persons and specific levels of knowledge. The following extracts are presented as illustrations.

> Initiation is the best way of transferring knowledge. It is a ritual act that consists of giving power to the candidate. This power is a set of knowledge, including magical knowledge. (Trainer EM: Inter 3)

> Initiation is the only way we use to transfer spiritual or magical knowledge. In the case of spiritual traditional medicine, even if we tell you that such a medicinal plant is able to heal such [a] disease, the medical properties of this plant can work only if you acquire specific powers during the initiation process. (Trainer LM: Inter 5)

> Initiation is also a kind of travel in the afterlife to meet the ancestors and/or the spirits. This travel is usually called astral travel in rural communities. Astral travel is spiritual and magical travel … by the candidate during his/her initiation into a form of traditional religion such as Bwiti, Ndjembè, Bilombo, Mwiri, etc. During this travel the candidate meets the spirits or his/her ancestors from whom the candidate receives something. The candidate can receive an object, a vision, a story, a song, important words, or nothing. It depends on the capacity of the candidate to be able to receive that kind of power. (Trainer EM: Inter 3)

Indigenous communities are known as very religious communities. This is the case in Kery village where spirituality is even rooted in the organisation or functioning of the community. I

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observed that Bwiti, Bilombo, Mwiri, Ndjembè, and Mabanzi are not only traditional religions but also forms of indigenous schools. Participants confirm that these traditional religions are also forms of indigenous schools with specific training programmes and separate levels of teaching and learning. Therefore, there are categories of learning levels and categories of teaching levels as portrayed in the following excerpt:

> Among us, Bwiti or Mwiri are forms of schools. We train people to become important or respectable persons in our community, e.g., traditional doctor, oratory art expert, traditional singer and dancer, and many other things. In these forms of school, each lesson corresponds to a defined level of teaching and learning. For example, the initiated trainees and non-initiated trainees do not have the same lessons and the same methods of learning. Also, in Bwiti or Mwiri, [a] diploma refers to the consecration. (Trainer LM: Inter 5)
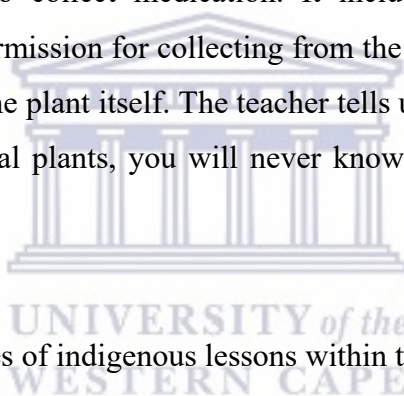
Table 5.5 below presents the types of indigenous lessons within the initiation method.

Table 5.5: *Types of indigenous lessons within the initiation method*

Type of indigenous lesson	Indigenous teaching and learning method
- Beliefs - Magical healing - Traditional religious rituals - Travelling in the spiritual world - Witchcraft practice, etc.	Initiation

Table 5.5 above indicates that the initiation method is essentially used within indigenous lessons from the spiritual order. Witchcraft, magic, vampirism, or fetishism are mystical powers given to the initiation candidate by the ancestors or spirits. Participants agreed that all knowledge related to witchcraft, magic, vampirism, or fetishism is specifically transmitted through the initiation method, and learners are aware of this. It can be noted there are spiritual or metaphysical lessons and methods as well.

*5)   **Rituals***

A number of scientific studies conducted in rural Gabon's communities have revealed that the term 'ritual' is connected with terms such as initiation, spirituality, or magic (Ndinga-Koumba-Binza & Moussounda Ibouanga, 2016). But all rituals do not take the form of initiation and are not absolutely from the spiritual order either. The excerpt below can help explain this:

> *There are simple rituals without any form of initiation or spirituality, for example, in the context of dances and circumcision. However, every situation, event such as initiation to Bwiti, consecration, or every activity among us is almost an execution of multiple rituals. We use rituals to give education to our children. There is knowledge in rituals that you will not find with Western people. (Trainer EM: Inter 3)*

Certainly, all rituals are not from the spiritual order, but it is in the spiritual context that the use of the ritual method has principal value in contributing to the transfer of significant knowledge and education. The above excerpt reveals that rituals can be included in ceremonies of initiation or consecration.

Table 5.6 below presents the types of indigenous lessons within the ritual method. These indigenous lessons are both spiritual and non-spiritual.

Table 5.6: *Types of indigenous lessons within the ritual method*

Type of indigenous lesson	Indigenous teaching and learning method
• Ancestral worship • Beliefs • Dance • Enthronisation ceremonies • Traditional healthcare • Witchcraft practice, etc.	Rituals

The ritual is an act or procedure inherent in the initiation. In other words, the ritual method could be included in the initiation method. In simple terms, there are methods and sub-methods. In addition, there are methods which themselves refer to forms of lessons because these methods are used to teach and learn how to practise them.

6)   Choice of heir/successor

This is the reason why all knowledge is not accessible to everyone. In the process of transferring knowledge, there is a study level or a learning programme which requires a choice of candidate. This candidate is none other than an heir. The following excerpt highlights this philosophy:

> Knowledge like in the case of social organisation, kingdom governance, or oratory art, is transmitted inside specific families, tribes, or clans, from the father to the son. Therefore, the method of choice of the inheritor consists first of determining the designated learner, that is the heir/heiress to the throne. There are rules that have to be respected for the purpose of maintaining the organisation of the community. All of this is part of ways of transferring knowledge among us. (Trainer EM: Inter 3)

Table 5.7 below presents the types of indigenous lessons within the method of choice of heir or successor. Besides indicating the context within the current method, the purpose of this table shows the fields in which the request of an heir is necessary in the perspective of perpetuating the tradition.
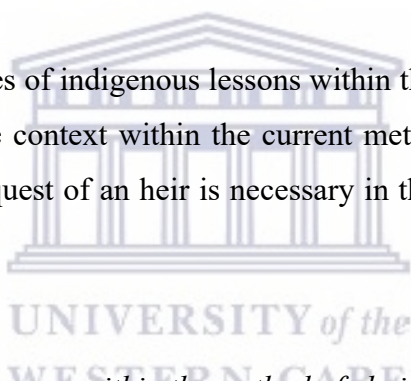
Table 5.7: *Types of indigenous lessons within the method of choice of heir/successor*

Type of indigenous curriculum	Indigenous teaching and learning method
• Governance • Heritage partition • Oratory art • Witchcraft practice • Traditional religion • Traditional medicine, etc.	Choice of heir/successor

Kery is a multi-ethnic and multi-linguistic village. These ethno-linguistic groups mentioned in Table 4.1 and Table 4.2 follow the matriarchal system. The passing of power, authority, and property is from maternal uncle to nephew, because women must not control the power. Thus, the potential successors are nephews, or, exceptionally, sons in the context of a patriarchal system that is mostly found in the north of Gabon, particularly among the Fang community (Adjoï-Obengui (2014:203).

Participants confirmed that an indigenous lesson within the method of choice of heir generally has a single learner. So, there are categories of individual lessons and categories of group lessons.

7)   Submission

Submission is part of a disposition that the learner must first have to acquire knowledge. Obedience is a law in the rural communities living in Kery village: a younger person must obey (respect) an older person. Those who do not respect this rule are not willing to learn. This is illustrated in the following extract:

> Knowledge and education are given to a respectful and helpful person. Humility is the key of all in life. We use submission as a method to teach about precepts of obedience and ancestral laws. In fact, there are recommendations in tradition or culture that we accept and respect because we have been taught about obedience. (Trainer EM: Inter 3)

Table 5.8 below presents the types of indigenous lessons within the submission method. The table presents the way in which submission is demanded.

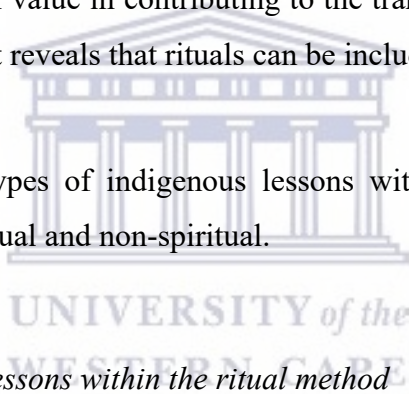**Table 5.8:** *Types of indigenous lessons within the submission method*

Type of indigenous lesson	Indigenous teaching and learning method
• Ancestral politics systems • Beliefs • Traditional religions, etc.	Submission

Some indigenous teaching and learning methods look like selection criteria for learners that allow them to access indigenous schools, particularly specific education programmes. These indigenous methods that refer to criteria of selection include:

- Method of submission

- Method of initiation

- Method of rituals

- Method of choice of heir/successor

8) *Calling the spirits*

This method of knowledge transfer is based on communication with the gods or spirits. The method is frequently used in the following cases: consultation with patients, need of healing power, preparation for major events such as hunting or fishing parties, and tribal war. The following extracts are presented as illustrations.

> Sometimes, and depending on some cases, when we teach we evoke the spirits or the gods to clarify us more. We ask the spirits to show us what we ignore. For example, we ask the gods about the disease the patients are suffering from, the origin of that disease and how to heal it. If the gods' answer is bad, we dismiss the patients. (Trainer EM: Inter 3)

> In ancient times our ancestors were evoking the spirits when they went to war against other tribes. But currently we are evoking the spirits when we prepare a community party of hunting or fishing, or when we prepare some important events in the community like funerals, sacrifices or Bwiti ceremonies. (Trainer LM: Inter 5)

Table 5.9 below presents the types of indigenous lessons within the method of calling spirits. The table illustrates the way in which calling the spirits is employed.

Table 5.9: *Types of indigenous lessons within the method of calling the spirits*

Type of indigenous lesson	Indigenous teaching and learning method
• Conflict resolution • Preparation for major events • Succession procedures • Traditional healthcare • Witchcraft practice, etc.	Calling the spirits

As in the case of *initiation* and *ritual*, the method of *calling of the spirits* is also part of the methods involved in the spiritual realm. In Table 5.9, it is observed that besides being a method of knowledge transfer during a class, *calling of the spirits* could simply refer to a sort of consultation with the spirits. Table 5.9 shows clearly a situation which indicates a problem that could find solutions with the spirits. In this sense, calling of the spirits refers to an indigenous

initiative of discussing the way to resolve a problem or to answer a question through the spirits before taking a decision.

9) *Communication with the spirits of nature*

This method is similar to the method of collecting, particularly the aspect on medicinal plants. This method is also similar to the preceding method in Table 5.9 which develops the need for communicating with the spirits. However, communicating with the spirits of nature includes communicating with the forest spirits, the water spirits, the savannah spirits, the mountain spirits, the earth spirits, as well as with the rain, the moon, the sun, and animals. The excerpt provided below clarifies this:

> Nature is large. Everywhere we are in the forest, at the river, there are spirits around us. Everywhere we have activities, we are not alone. There are mystical or spiritual living beings around us. It is important to communicate with them in order to find more solutions to our daily questions and of course to get more knowledge that allows succeeding in life. (Trainer LM: Inter 5)

Table 5.10 below presents the types of indigenous lessons within the method of communicating with the spirits of nature. The purpose of this table is to illustrate the contexts in which communicating with the spirits of nature can be necessary.

Table 5.10: *Types of indigenous lessons within the method of communication with the spirits of nature*

Type of indigenous lesson	Indigenous teaching and learning method
• Agriculture activities • Ancestral worship • Fishing • House construction • Hunting • Traditional medicine, etc.	Communicating with the spirits of nature

Communicating with the spirits of nature is also part of the methods that are characteristically spiritual. Participants agreed that the interpretation of this method is similar to calling of the spirits, as it refers to a consultation with the spirits as described in Table 5.9. Additionally,

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these two ways of collaborating with the spirits can be in lessons that can be taught and learned with other methods in order to train how to speak to or to discuss matters with the spirits.

10) *System of grades*

This method refers to a set of teaching and learning levels. Each successful level corresponds to a completed study or training level. The present method is mostly employed in the circles of traditional religions like Bwiti and Mwiri, as explained in the following extract.

> In our kind of school there is a succession of stages to acquire knowledge. Each stage has its specific language level, challenges, and lessons to teach and to learn. When the learner completes the stage, he/she gets access to the next higher stage with new parameters of training and learning. In the circle of Bwiti, there are a lot of grades of knowledge transfer such as dancers, players of traditional musical instruments, singers, charmers, healers, initiators, trainers, and patriarchs. These grades can also be called generations. The language changes from one grade to another so that the inferior grade does not understand what is reserved for a higher grade. We usually use codes to particularly communicate with our generation. (Trainee GRM: Inter 9)

Participants described an example of a system of grades that is mostly perceived in the category of traditional healers. This system includes:

- Grade 1: Banzi, the newly initiated person who got the power of healing from his/her astral travel. Grade 1 refers to the first level of higher traditional training of healers. That is, there are other training levels before being a Banzi. These can be the subordinate levels before the initiation.

- Grade 2: Mwane Ngange, the assistant of the master. The assistant is still a learner. But such a learner already knows many medicinal plants and modes of healing. Also, at this level, the learner starts practising.

- Grade 3: Ngange, the master who has the qualification of healing. It is also the first grade of specialisation, i.e., specialisation in diseases related to types of insanity.

- Grade 4: Fumu Ngange, the grand master who has a higher degree in traditional medicine. He or she belongs to the group of traditional medicinal experts.

Table 5.11 below presents the types of indigenous lessons within the method of system of grades. This illustrates the contexts in which this method is employed.

Table 5.11: *Types of indigenous lessons within the method of system of grades*

Type of indigenous lesson	Indigenous teaching and learning method
• Ancestral politics systems • Rituals • Traditional medicine • Traditional religions, etc.	System of grades

All participants agreed that the method of system of grades is one of the indigenous teaching and learning methods of knowledge transfer that describes perfectly the functioning of the indigenous education system. The description of this method helps to understand that the notion of categorisation has an important place in the indigenous education system. It appears here that indigenous education is categorised.

The other important aspect to note here is that an indigenous education system is very ceremonial, that is, it is demanding in respect of ethics and procedures.

11)   Songs

In rural communities, the ways of transferring knowledge include songs. This is the reason why adults or parents use songs to educate children as reflected by the following participants' statements:

> When I was a child, my parents used songs to educate me. That is to say, when they wanted to teach me something, they transformed the idea into a song that I should sing every day. I still remember many of those songs which are life lessons for me. Singing is learning because in the song there is knowledge to acquire. Singing is like reciting or repeating your school lesson. For example, as a follower of Bwiti, I learn a lot of things through songs, because songs contain particular messages, codes or specific knowledge. (Trainee HDI: Inter 7)

When I [was] initiated into Bwiti, I received a song during my astral travel. Most of the time the candidates receive songs or visions. In the case of songs, it may contain power to fight enemies, to heal patients, to communicate with nature, to be favoured in front of every situation, etc. In fact, the song you receive from your travel is like a key [to] opening some important doors of your life. But it is forbidden to reveal this song because it is a personal secret. And what is a secret is sacred. The world of the initiated[4] is a world of spiritual challenges and fights. If you reveal your secret, you reveal at the same time your protection. Then your enemies could reach you. But because of some circumstances, some initiated reveal their secrets. (Trainer EM: Inter 3)

Trainee HDI in the extract (Inter 7) gave the examples of songs in the *Gisir* language:

Song 1: Malongi ma tata

Lyrics in Gisir language	Lyrics' translation into English
Malongi ma tata ni ma va mo murima mi. *Ni kessi libene.* *Nya ku yambila wandi, nya wimbila na murima mi.* *Ni kessi libene.*	*I keep my father's instructions in my heart.* *Then I will never forget.* *I repeat them, I am singing with pride.* *Then I will never forget.*

Song 2: Mwane nengue

Lyrics in Gisir language	Lyrics' translation into English
Mwane oh, mwano oh	*My child, my child*
Mwane nengue dikengui... (X2)	*You must learn well... (X2)*
Mwane passi umanenga,	*My child, if you learn very well,*
Mwane walaka dikengui... (X2)	*You will succeed in all your ways... (X2)*

Table 5.12 overleaf presents the types of indigenous lessons within the song method. The purpose of this table is to exemplify the context in which the song method is employed.

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[4] In Gabonese indigenous religions, an initiated is the person (male, female, or child) who has been introduced through the act of initiation to access a spiritual level of worldviews understanding. This initiation is principally made with the consumption of the powder of iboga plant (*Tabernanthe iboga*).

Table 5.12: *Types of indigenous lessons within the song method*

Type of indigenous lesson	Indigenous teaching and learning method
• Ancestral worship • Communication with the spirits • Morality and ethics • Rituals • Traditional religions, etc.	Songs

Table 5.12 above reveals that songs are linked to spirituality. However, there are simple songs used to educate children. The song method is both a learning and teaching method.

12)   *Fire*

Fire symbolises the capacity of understanding. Fire is also a spiritual method. It serves to teach and learn basically about spiritual things. The following extracts give an explanation from the participant:

> The symbol of fire is the capacity of assimilating rapidly. The fire keeps people awake. And when we are awake, we acquire the lesson efficiently. That is why fire is linked with tales. Parents, adults, or patriarchs tell stories to young people like us around the fire so that we quickly assimilate these stories. However, in the context of traditional religion like Mwiri or Bwiti, fire symbolises the presence of supreme beings. Their mission is to open our minds, or to boost our capacities for acquiring knowledge (Trainee EGGB: Inter 12)

> It is also important to know that fire is the light and the light is knowledge. In our culture, having knowledge means living in the light. But the light or fire is life. Life itself teaches as we learn from life's experiences. Even in the Bible when it talks about fire baptising, it means being taught from life's experiences. So, we use the method of fire to teach about aspects of courage. The fire is about learning through difficulties, high experiences. Fire is for brave persons. (Trainer LM: Inter 5)

Table 5.13 overleaf presents the types of indigenous lessons within the fire method. The purpose of this table is also to illustrate the framework in which this method is employed.

Table 5.13: *Types of indigenous lessons within the fire method*

Type of indigenous lesson	Indigenous teaching and learning method
• Bwiti ceremonies • Fights • Stories • Communication with the spirits • Hunting party preparation • Magical rituals • Water purification • Witchcraft practice, etc.	Fire

Fire is also both a learning and teaching method. The participants also explained that fire could be a simple ritual included in the process of teaching and learning a lesson. It is related to magical rituals and hunting party preparation. In addition, fire could be simply one of the principal objects or instruments used during the class or when the lesson is in progress. This is the case with the lesson related to Bwiti ceremonies and fights.

13)   *Tales/Stories*

These are accounts of events that adults tell young people around the fire. Stories contain messages of wisdom which constitute knowledge. These stories refer basically to past events of the community in order to transmit community history to young people. The stories could also be the experiences lived by the ancestors that young people must be able to adopt in their current lives.

> Stories are told to young people in order to teach them. For in these stories there are lessons, experiences lived, wisdom, and education to acquire. Our knowledge comes from the ancestors, from the spirits, and from God. God is Nzambe kana Mukadi mambu na mwa dingana (Supreme God, Creator of the Heaven and the Earth). This knowledge we inherited from our fathers and from our God is not written. This knowledge exists in stories, songs, in memories, in nature. (Trainer EM: Inter 3)

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Many examples of stories were related by Trainer EM (Inter 3). The following story is one of the most relevant in terms of morality:

> The monkey and the turtle were best friends. Their friendship died when one day the monkey invited the turtle to dinner. The monkey prepared a good dinner but it hung the dinner high on the tree and asked the turtle to climb up to eat. After many attempts, the turtle could not climb. Then, the turtle told its friend that it is impossible to reach the top of the tree. The monkey insisted, with hypocrisy, saying, 'Try again!' But when the turtle tried again, it could not climb. It even lost its claws. Tired and injured, it decided to go home.

> One week later, the turtle also invited the monkey to dinner. The turtle set the table inside a cave in which it knew the panther liked to come to rest. While the two friends started eating, the panther came and ate the monkey. The panther could not eat the turtle because the latter had taken refuge in its shell.

Morality

- ✓ *No one should be arrogant in being superior to the other. God created us differently with faults and qualities. It is important to accept and respect each other instead of mocking or fighting with each other.*

- ✓ *Do not challenge anyone by trusting only in your exceptional abilities; you run the risk of failure.*

- ✓ *The wise man does not speak against anyone. He refrains from retaliating, and closes the discussion.*

Table 5.14 below presents the types of indigenous lessons within the tale/story method. The purpose of this table is also to illustrate the setting in which this method is used.

Table 5.14: *Types of indigenous lessons within the tale/story method*

Type of indigenous lesson	Indigenous teaching and learning method
• Community history • Governance • Oratory art • Wisdom, etc.	Tales/stories

The story is one of the learning methods. Participants noted that people educate one another through tales or stories. For example, whoever knows a story that reveals the origins of the community, simultaneously acquires knowledge about the history of this community.

14)   *Dreams*

The dream is a way of communication with ancestors or with spirits. As such it refers to a way of transferring knowledge. Apart from dreaming naturally, the dream could also be personally presented as communication, conversation or conference, as captured in the following excerpt:

> When we are sleeping, the spirits or ancestors communicate with us through dreams. This particular moment is viewed as one of the favourite ways of our ancestors to bring solutions to our problems in order to assist us. The dream can also be personally planned in advance like a meeting to have with partners. For example, we take time to speak to our ancestors before sleeping. And when we are sleeping the ancestors come to speak to us or show us visions in order to respond to our requests. (Trainer EM: Inter 3)

The following example of a dream was told by Trainer JO in Inter 4. This dream is drawn from Trainer JO's personal experience:

> My grandson was often a victim of epileptic attacks. None of the several traditional doctors consulted succeeded to cure him. I tried to treat him myself through various rituals, but the child was not healed. Many months (4 or 5) later I had a dream. In this dream, a little woman came to me, took my hand, and brought me over to a big tree in the forest. The little woman showed me a small medicinal plant near the big tree. She also showed me the whole healing protocol, i.e., usage, dosage, and the specific moment to give that medication. After that I woke up!
>
> I searched for this medicinal plant in the forest for four days. I stored it in the house and planted a portion behind my house. The day my grandson had the attack again, I prepared the medicine and breathed into his nostrils. Until

nowadays, that is 15 years later, my grandson has never had an epilepsy attack. He is today married and lives in Libreville, the capital city.

Table 5.15 below presents the types of indigenous lessons within the dream method. The purpose of this table is to illustrate the context in which dreams are employed as a knowledge acquisition method.

Table 5.15: *Types of indigenous lessons within the dream method*

Type of indigenous lesson	Indigenous teaching and learning method
• Communication with the spirit • Witchcraft practice • Traditional medicine, etc.	Dreams

The dream is part of the spiritual methods. This method is more a learning method than a teaching method. Some indigenous methods of knowledge transfer can be included in the category of self-education.
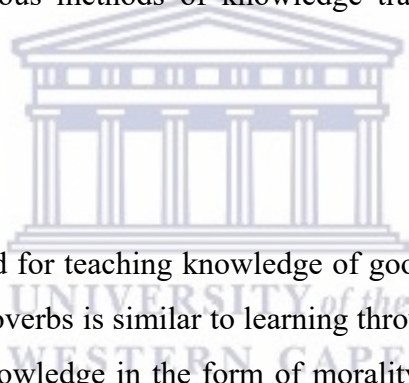
15)   *Proverbs*

Proverbs are the moral rules used for teaching knowledge of good and evil, as well as to form personality. Learning through proverbs is similar to learning through songs or stories. It always consists of transmitting some knowledge in the form of morality as revealed in the following excerpts from participants.

> Proverbs are used in the perspective of young people's or children's education. Proverbs consist of helping people to have a good education and personality. (Trainer LM: Inter 5)

> We learn acquiring wisdom through proverbs. Proverbs involve two things, which are listening and asking questions for the purpose of understanding and accessing knowledge. Proverbs are like songs and stories. We listen first and ask questions, for we have to know what the content means. My father usually tells me that if I want to be a respectful man, I have to understand proverbs. (Trainee EGGB: Inter 12)

> Our fathers (trainers, masters) teach us via proverbs mastering oratory art. Here in the village, people consider that I am a good oratory art expert because I

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master a lot of proverbs and this has given me a lot of techniques to talk to the assembly. (Trainee AM: Inter 5)

The following proverbs were drawn from Trainee AM in Inter 5:

- Obedience leads to success, but disobedience reduces your life.

- Seek education, and ignorance will run far away from you.

- Even if you seem to know another person's culture, know yours better so you will not be a person from elsewhere.

- Those who die are people. Those who stay alive are also people.

- The river is not straight because it refused to be advised.

Table 5.16 below presents the types of indigenous lessons within the proverb method. The purpose of this table is to exemplify the context in which proverbs are employed as a knowledge transfer method.

Table 5.16: *Types of indigenous lessons within the proverb method*

Type of indigenous lesson	Indigenous teaching and learning method
- Commerce - Governance - Oratory art - Conflict resolution - Wisdom, etc.	Proverbs

The proverb method is a teaching as well as a learning method. This method serves teaching and learning about lessons of morality.

16)   Proscriptions

In rural communities, proscription plays an important role in the context of social or community organisation. In Kery village, community organisation is based on policies in terms of interdictions. Proscriptions refer to a kind of law or legal system. The proscription method is

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used for teaching and learning about forms of traditional or ancestral law from which the community has been created. This is portrayed in the following extracts:

> Proscriptions are living rules for us. Proscriptions represent the laws we have in our community. It is about our culture. There are proscriptions in everything related to our community lifestyle. (Trainer LM: Inter 5)

> We teach through proscriptions to transmit knowledge about our social organisation. It consists of what we are permitted to do and what we cannot do as well. The future generations must get this in the perspective of preserving our culture. (Trainer EM: Inter 3)

The following proscriptions were drawn from Trainer LM in Inter 5:

- It is forbidden to have sex in the forest. Whoever is guilty of such an act will be exposed to the spirits of the forest that will decide his/her fate.

- The woman must not bathe upstream of the river so that the man who bathes downstream will not be soiled. Whoever is guilty of such an act is punished.

- It is forbidden to defecate in a watercourse, for water is a divinity. The spirit of waters will curse whoever is guilty of such an act.

- Any human activity (hunting, fishing, agriculture, rituals, resource collection) in a sacred community forest without the agreement of the ancestors or the spiritual guardians of that community is prohibited. Whoever is guilty of such an act runs the risk of being put to death.

Table 5.17 below presents the types of indigenous lessons within the proscription method. The purpose of this table is to show the context in which proscriptions are employed as a method of knowledge transfer.
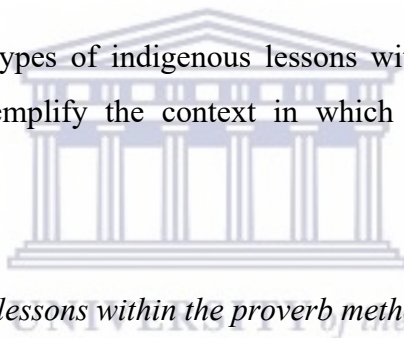
Table 5.17: *Types of indigenous lessons within the proscription method*

Type of indigenous lesson	Indigenous teaching and learning method
- Ceremony protocols - Events preparation or organisation - Governance - Rituals - Traditional law, etc.	Proscriptions

The proscription method is both a teaching and learning method. There are simple proscriptions and spiritual proscriptions. The proscriptions method can also be included in the category of self-education.

17)   Manifesting the desire for learning

This method is mostly used in the context of traditional religious knowledge transfer, particularly when it is about initiation or consecration. Addressing some trainers' and trainees' assertions should help to clarify the description of this method of transferring knowledge.

> In our culture, there are forms of learning processes that recommend a learning desire from the learner. Because we cannot teach those who do not want to be taught. The personal wish is very important in the process of learning. In the case of getting [the] power of healing, if it is about magical power, there is a need for the learner to be initiated. For accessing to a certain high level in the process of knowledge acquisition, the learner could be requested to make some sacrifices. If he/she refuses to make some sacrifices, the process of learning will be stopped. As long as he/she accepts without his/her own wish, the knowledge transfer will be unsuccessful. (Trainer LM: Inter 5)

> The fact of manifesting the desire for learning helps the learner him/herself to access learning aptitudes. We acquire knowledge because first we are voluntarily disposed to learn. For example, studying the philosophy included in traditional religions like Ndjembè, Bwiti or Mwiri, demands the learner's own skills for the purpose of developing to a higher level or dimension. That is why we usually argue that knowledge is not for everybody. (Trainee PLKN: Inter 8)

Table 5.18 overleaf presents the types of indigenous lessons within the method of manifesting the desire for learning. The purpose of this table is also to show the way in which this method is included.

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Table 5.18: *Types of indigenous lessons within the method of manifesting the desire for learning*

Type of indigenous lesson	Indigenous teaching and learning method
• Beliefs • Commerce • Governance • Traditional medicine • Traditional religions, etc.	Manifesting the desire for learning

The method of manifesting the desire for learning is part of the category of learning methods. This method is linked to the will of the learner. But this method can simply become a kind of learner's decision-making when facing situations where self-sacrifice is required.

18) *Continual discussion*

This is one of the popular methods of teaching and learning. It is about discussing the subject many times before starting to practise it. This method is a method of reinforcing capacity for learning. Hence, this method is used from an advanced grade or level of study. This description is confirmed in the following extract:

> I use this method when I teach about something that demands mostly theoretical basics like in the field of ancestral political systems. This method may be used at the starting of the training process. It is also suggested from a higher level of the training for the purpose of improving the learners' skills. (Trainer LM: Inter 5)

Table 5.19 below presents the types of indigenous lessons within the method of continual discussion. The purpose of this table consists of illustrating the fields in which this method is employed.

Table 5.19: *Types of indigenous lessons within the continual discussion method*

Type of indigenous lesson	Indigenous teaching and learning method
• Communication with the spirits • Conflict resolution • Oratory art • Succession procedures • Traditional medicine, etc.	Continual discussion

Continual discussion is included in both teaching and learning methods. But mostly it is a teaching rather than a learning method. It becomes a method of learning in the sense that the learner prepares the questions he/she asks the teacher in order to better understand the lesson.

19)   *Continual assistance*

This method is employed from an advanced level or step in the process of learning. Here the teacher continues to work on improving the learner's abilities in the subject. At this stage of the training, the trainee is still unable to practise officially without assistance (i.e., in the frame of a training programme for a traditional doctor, professional wicker-worker). The following extracts illustrate the use of this method in the context of the production of mats, oratory art, and traditional healthcare.

> In terms of producing mats, the learner needs more practice. The practice phase can take many months. During the phase of practising, the learner must be assisted for the purpose of correcting her/him. Even when the learner is able to produce a mat, yet, she/he needs continual assistance in order to improve her/his skills. (Trainer CM: Inter 2)
>
> In the case of oratory art, the practical phase takes place at the time of specific ceremonies or rituals. I have practised a long time in different types of ceremonies before becoming an oratory art expert. But I am still assisted by my master in order to get more knowledge and write my name among the holders or supreme masters of this field. (Trainee AM: Inter 15)
>
> As traditional medicine learner my future is to be a traditional doctor. My master usually tells me that as long as I heal people, I cannot stop researching the virtues of medicinal plants which treat diseases that people suffer from. And I will need peers and masters to assist me before getting more experience which could allow me later to exercise individually. School does not finish even after your graduation. (Trainee GRM: Inter 9)
>
> Continual assistance is also a sort of coaching model. The one who assists is the one who is coached. I am priest of Bwiti and oral art expert. I have a lot of disciples. But I am also a disciple of someone else who coaches me. That is why it is certified that school does not finish. We always learn from the elders that we

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assist in order to acquire more experience, wisdom, and therefore knowledge. (Trainer LM: Inter 5)

Table 5.20 below presents the types of indigenous lessons within the continual assistance method. The purpose of this table is to exemplify the fields in which this method is employed.

Table 5.20: *Types of indigenous lessons within the continual assistance method*

Type of indigenous curriculum	Indigenous teaching and learning method
• Agriculture • Ancestral political systems • Traditional medicine • Weaving activities • Wickerwork activities, etc.	Continual assistance

The continual assistance method is part of both a teaching and learning method. The teacher continues to assist the learner through using other approaches in order to improve the progress of the training phase. The learner needs assistance to improve personal skills. In the situation of assistance, those who need help to gain more knowledge or competencies are learners, including professionals. Those who assist are teachers, including other learners/peers.

The excerpts provided above reflect the following:

- The continual assistance method is similar to the continual discussion method in terms of reinforcing capacities and is employed from an advanced level of studying.

- There is a significant difference between the continual discussion method and the continual assistance method.

- The continual discussion method is limited to discussion, conversation, and sharing by word of mouth without any form of doing or practice. While the continual assistance method is not theoretical. It is rather based on doing, practising or experiencing.

- The continual assistance method is not the practical method. There is a difference between these two methods.

- The practical method is absolutely engaged within a defined training programme which includes programme duration (i.e., six months), lessons, assessments, and graduation. It is not the case with the continual assistance method. The continual assistance method is

not necessarily limited to the frame of the training programme. There is neither obligation, nor duration or limited time. The duration depends on the relationship between the assisted or disciple and his/her master. This can take as long as possible, depending on the will of the master and his disciple.

- The continual assistance method refers more to coaching or mentorship in practice.

20)   Power transfer

Power transfer refers to an exceptional capacity given to the learner for the purpose of helping him/her to access specific knowledge. This exceptional capacity constitutes a way from which a particular knowledge is taught. For example, this method is used in the perspective of teaching about how to discuss with the spirits or how to free a person trapped in the spiritual world. The following extract is an illustration:

> Power transfer is about giving something powerful to the learner so that he/she will be able to acquire a kind of knowledge that is not accessible to everybody. It is the case in Bwiti, the master transfers power to the disciple. This power opens the disciple's eyes and mind to be able to perceive exceptional things in the spiritual world. In this context of Bwiti, the power transferred could be Iboga, while in the context of deliverance of patients from the devil, the power transferred could be witchcraft. Iboga or Ibogaine (*Tabernanthe iboga*) is an extraordinary medicinal plant raised in Bwiti as a plant or tree of knowledge. This plant gives its consumers particular sensations and spiritual guidance from the ancestors. (Trainer EM: Inter 3)

Table 5.21 overleaf presents the types of indigenous lessons within the power transfer method. The purpose of this table is to illustrate the fields or the context in which this method is included.

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Table 5.21: *Types of indigenous lessons with the power transfer method*

Type of indigenous lesson	Indigenous teaching and learning method
• Communication with the spirits • Rituals • Witchcraft practice • Traditional medicine • Traditional religions, etc.	Power transfer

The power transfer method is part of the spiritual methods of knowledge transfer. It is also part of the category of teaching methods rather than a learning method.

21)   *Consecration*

Consecration is not about giving a particular capacity, as it is the case for power transfer. Rather it is about introducing someone into a certain sphere or circle. The method is used when the kind of knowledge taught is only accessible or reserved for the initiated. This method is also considered a way of knowledge transfer when the learner is completing the last level or grade of the process of knowledge acquisition. The excerpts provided below can help explain this.

> Consecration is a selective method. We use this method to teach particular knowledge reserved only for the initiated in Bwiti or Mwiri. In fact, some forms of knowledge derive entirely from the spirits. But the spirits' language is only understood by the initiated. (Trainer LM: Inter)

> When I am sure that my disciple is now able to heal people, I use the method of consecration to complete his/her training. From this moment it is about teaching him/her about all the procedures of healing as well as material or ingredients of healing. After that I bless my disciple and present him/her as a new healer to the peers or to the assembly of the elders of the community. (Trainer JO: Inter 4)

Table 5.22 overleaf presents the types of indigenous lessons within the consecration method. The purpose of this table is to illustrate the fields in which this method is employed.

Table 5.22: *Types of indigenous lessons within the consecration method*

Type of indigenous lesson	Indigenous teaching and learning method
• Oratory art • Traditional medicine • Traditional religions • Witchcraft practice, etc.	Consecration

The consecration method refers mostly to a learning method compared with the power transfer method. Consecration appears as a learning level of knowledge acquisition. The learner must be consecrated to achieve progress in specific training programmes. In addition, the consecration method can be included in the category of spiritual knowledge transfer methods.

22)   *Dance*

Dance is a language, a way of communication. There are simple dances, initiation dances, and spiritual dances. The spiritual dances refer to the dances that are linked to the invocation of the spirits. This method is mostly employed for the purpose of transferring knowledge related to forms of communication, as the following extract reveals.

> There are two forms of Bwiti, namely, Bwiti Dissumba and Bwiti Missoko. In these Bwiti spheres the dance refers to a code of transferring a specific message to the specific persons. The method of dance is used for teaching about some of life's secrets. Dance is for connecting people to their community and promoting peace. (Trainer LM: Inter 5)

According to Trainer LM in Inter 5, except for the two forms of dance in Bwiti (dance of Bwiti Dissumba and dance of Bwiti Missoko), there are also:

- The dance of Ndjembè (in traditional religion Ndjembè)

- The dance of Mboumba or Mboumba yano (in traditional religion of Mboumba)

- The dance of Mwiri (in traditional religion of Mwiri)

- The dance of the initiated which is different from the dance of the non-initiated during ceremonies.

Table 5.23 below presents the types of indigenous lessons within the dance method. The purpose of this table is to illustrate the context in which the dance method is employed.

Table 5.23: *Types of indigenous lessons within the dance method*

Type of indigenous lesson	Indigenous teaching and learning method
• Communication • Conflict resolution • History • Protocols of ceremonies • Ritual preparation, etc.	Dance

The dance method is both a spiritual and non-spiritual method. This method is mostly a teaching method rather than a learning method. During the ceremonies, it is possible to identify the initiated people from those non-initiated through their ways of dancing. The initiated execute several different dance steps which are at the same time codes of communication. They let their bodies express themselves. While the non-initiated dance differently, without body's expression and without harmony in their way of dancing.

Also, it appears that traditional religions such as Bwiti, Mwiri, and Ndjembè can be distinguished through their particular types of dance. Each traditional religion has its proper ritual of dance.
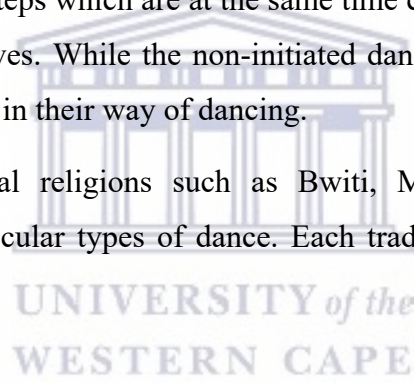
23) Music

Music is a way of communication. There are many kinds of music and musical instruments that play an important role in the process of knowledge transfer. Compared to the song, music is essentially characterised by the musical instruments and players of these instruments. There is no music without musical instruments and players, as captured in the following excerpt:

> In our culture, music has an important place that is attached to the dimension of communication. We use music as [a] method to teach about how to connect to or to stay connected to the environment in which we live. It is first a connection or interaction between three things … the melody or song, the musical instrument and the player. Additionally, it is largely about staying connected to the living beings that exist around us. (Trainer EM: Inter 3)

Trainer EM in Inter 3 and Trainer LM in Inter 5 provided the following example of musical instruments and their functions in the *Gisir* language:

- Mulombu (drum), with the function of announcing news and community events.

- Ngombi (zither), with the function of fortifying the soul and the spiritual body, and to awaken minds.

- Kindu (small bell), with the function of requesting the presence of the spirits or to wake the ancestors or the spirits.

- Mungongu (kind of musical bow played with the mouth), with the function of making the environment comfortable through the search for peace.

- Baki (kind of soundboard), with the function of rejoicing in the community.

However, trainers and trainees explained that the first or principal function of all music instruments is to worship the gods, spirits or ancestors.

Table 5.24 below presents the types of indigenous lessons within the music method. The purpose of this table consists of exemplifying the context in which the music method is included.
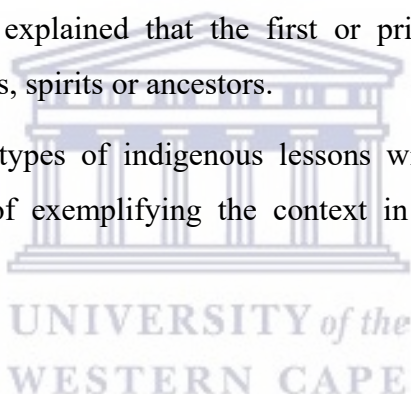
Table 5.24: *Types of indigenous lessons within the music method*

Type of indigenous lesson	Indigenous teaching and learning method
• Ancestral worship • Communication • Conflict resolution • History, etc.	Music

The method of music is both spiritual and non-spiritual. There are also different kinds of music for initiated and non-initiated people. The music method is part of the category of teaching methods.

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5.3.2 Categorisation of indigenous teaching and learning methods of knowledge transfer

The data from this research study are mostly analysed in the form of categorisation. The research study reveals a total of 23 indigenous methods of knowledge transfer. In view of the above notes, numerous other presupposed categories of indigenous methods of knowledge transfer have been mentioned.

5.3.2.1 Categories of indigenous teaching and learning methods

The system of indigenous knowledge transfer indicates that there are, on the one hand, teaching methods and on the other hand, learning methods. The teaching method refers to the knowledge transfer process which principally consists of offering knowledge. The teaching method involves the responsibility of the teacher. The learning method refers to a way of receiving or acquiring knowledge. It is the knowledge transfer process which predominantly concerns the learner or which involves the responsibility of the learner.

Table 5.25 overleaf shows the indigenous teaching and learning categories identified by the participants. The aim of this table is to distinguish the teaching from the learning methods.
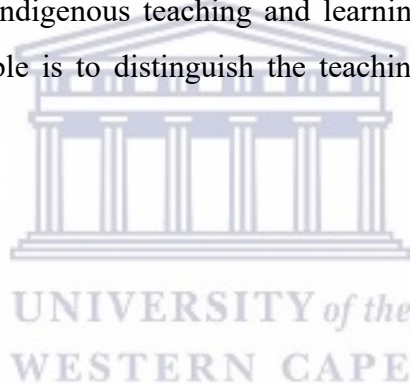
Table 5.25: *Categories of indigenous teaching & learning methods*

Categories / Methods	Indigenous teaching methods	Indigenous learning methods	Indigenous hybrid methods
Calling of the spirits	X	X	X-X
Choice of heir/successor		X	
Collecting	X	X	X-X
Communicating with the spirits of nature	X	X	X-X
Consecration		X	
Continual assistance		X	
Continual discussion	X	X	X-X
Dance	X		
Dreams		X	
Fire	X	X	X-X
Initiation		X	
Manifesting the desire for learning		X	
Music	X		
Observation		X	
Power transfer	X		
Practical	X	X	X-X
Proscriptions	X	X	X-X
Proverbs	X	X	X-X
Rituals	X	X	X-X
Songs	X	X	X-X
Submission		X	
System of grades	X	X	X-X
Tales/stories		X	

Table 5.25 above reports a total of 14/23 indigenous methods of knowledge transfer that are particularly teaching methods. Thus, the other 9/23 are indigenous learning methods. However, the table reports a total of 20/23 indigenous methods of knowledge transfer that are especially indigenous learning methods. This result shown in Table 5.25 is because there are methods which are both teaching and learning methods.

This table clearly indicates that there are 12/23 indigenous methods of knowledge transfer that are found in both the category of teaching methods and of learning methods. These types of methods are simultaneously teaching and learning methods. It means these methods play a double role of being both teaching and learning methods. They are blended teaching-learning methods or kinds of hybrid methods. Therefore, the participants in the study distinguished three types of indigenous methods:

- Indigenous teaching methods
- Indigenous learning methods
- Indigenous teaching-learning methods or hybrid methods

5.3.2.2 Categories of spiritual, natural, generalist and theoretical methods

Indigenous teaching and learning methods of knowledge transfer can also be described. These are spiritual, natural, generalist, and theoretical methods. Spiritual methods are the kinds of methods that are linked to the spiritual or supernatural fields. Here, the term 'spiritual' refers mostly to the function or role of the method. This is different from the natural methods which refer to the methods employed simply without the interference of spirituality in practice, or when the use of the method is in progress.

The term 'generalist' can be understood as general or holistic. Generalist methods therefore refer to the indigenous methods that can be used within all fields or all forms of lessons. These indigenous methods can also be called fundamental methods. The concern of theoretical methods can be understood as the indigenous methods that are characteristically more theoretical than empirical, without the use of concrete materials.

Table 5.26 overleaf shows the spiritual, natural, generalist, and theoretical categories identified by the participants. This table presents the distinction between the spiritual, natural, generalist, and theoretical methods.

Table 5.26: *Categories of spiritual, natural, generalist & theoretical methods*

Categories / Methods	Indigenous spiritual methods	Indigenous natural methods	Generalist methods	Theoretical methods
Calling the spirits	X			
Choice of heir/successor	X	X		X
Collecting		X		
Communicating with the spirits of nature	X			X
Consecration	X			X
Continual assistance		X		
Continual discussion		X		
Dance	X	X		
Dreams	X			X
Fire	X	X		X
Initiation	X			X
Manifesting the desire for learning		X		X
Music	X	X		
Observation		X	X	X
Power transfer	X	X		X
Practical		X	X	
Proscriptions		X		X
Proverbs		X		X
Rituals	X	X		
Songs	X	X		X
Submission		X		X
System of grades		X		
Tales/stories		X		X

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Table 5.26 above indicates a total of 12/23 indigenous methods of knowledge transfer that are spiritual methods and a total of 18/23 that are non-spiritual or natural methods. This table also indicates that there are some natural methods that are also included in the category of spiritual methods. These can play simultaneously both a natural and spiritual function or role depending on the context of their usage. These methods are hybrid methods and form the category of natural-spiritual methods, that is, choice of heir, dance, fire, music, power transfer, rituals, and songs.

In addition to this, Table 5.26 reveals a total of 02/23 and 14/23 indigenous methods of knowledge transfer that are respectively generalist methods and theoretical methods.

5.3.3 Summary of Theme 2

With regard to the answers collected from the interviews, the following were noted.

- There are numerous indigenous teaching and learning methods.
- On the one hand there are teaching methods, and on the other hand there are learning methods.
- There are hybrid methods that are singularly both teaching and learning. This hybridity is also identified among natural and spiritual methods.
- Each method has a specific role in the knowledge transfer process.
- These methods indicate basically a categorisation system of the knowledge transfer process. The category is determined through the role of the method as well as through the types of indigenous lessons in which the method can be employed. For example, the method of choice of heir/successor is included in both spiritual and natural categories (see Table 5.26) because within kinds of lessons such as witchcraft practice, traditional religion (Bwiti), and traditional medicine that demands the assistance of the spirits (see Table 5.7), the choice of heir is more determined spiritually. But, for the types of lessons such as governance and oratory art, the choice of heir is more natural with regard to filial or genealogical and individual predispositions.

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5.4 Theme 3: Nature of indigenous teaching and learning methods

This section focuses on answering the question on the nature of indigenous teaching and learning methods. It presents the nature of these indigenous methods in the form of categorisation. Each category refers to an aspect of the nature of the indigenous teaching and learning methods of knowledge transfer. As indicated earlier, I personally observed in rural communities that indigenous teaching and learning ways of transmitting and acquiring knowledge deal with procedures which refer to word of mouth, observations, doing, and the capacity to memorise. In addition, nature is understood here as the usual way in which indigenous methods of knowledge transfer are used and interact according to their natural characteristics. It may refer to the essence of these indigenous methods.

5.4.1 Categories of nature of indigenous teaching and learning methods

Indigenous teaching and learning methods comprise numerous characteristics:

- **Visual nature**

The term 'visual' refers to the fact of seeing. Thus, indigenous teaching and learning methods rely on visual characteristics such as simple observation.

- **Practical nature**

The practical nature indicates the indigenous methods fashioned from practical acts such as doing and/or practising.

- **Spiritual nature**

The spiritual nature refers to spirituality. Spirituality here includes the terms 'mysticism', \witchcraft', 'sacredness', 'sanctity', and 'divinity'. There are spiritual and non-spiritual methods.

- **Traditional nature**

The means of transferring knowledge are traditional among Gabon's rural communities. For this reason, traditionalism is basically the first natural aspect observed within indigenous teaching and learning methods. Therefore, all indigenous methods of knowledge transfer can be included in the category of traditional nature.

- **Oral nature**

Gabon's rural communities are based on an oral culture. Thus, knowledge and education are orally transferred from generation to generation. There is no Gabonese indigenous transcription or written text that was identified and approved scientifically. In this sense, all indigenous methods of knowledge transfer can be included in the category of 'oral'.

Table 5.27 overleaf presents the visual, practical, spiritual, traditional, and oral characteristics that participants identified within the nature of indigenous teaching and learning methods of knowledge transfer. This table categories and distinguishes the indigenous methods according to their nature or essence.

Table 5.27: *Categories of visual, practical, spiritual, traditional & oral nature*
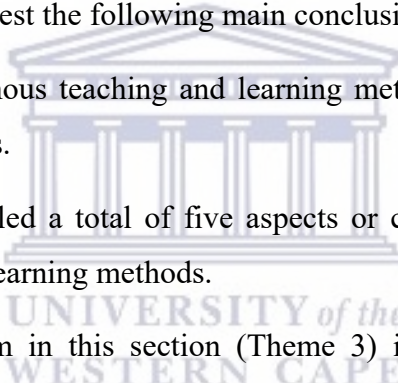
Categories / Methods	Visual nature	Practical nature	Spiritual nature	Traditional nature	Oral nature
Calling the spirits			X	X	X
Choice of heir/successor	X		X	X	X
Collecting	X	X		X	X
Communicating with the spirits of nature			X	X	X
Consecration			X	X	X
Continual assistance		X		X	X
Continual discussion		X		X	X
Dance	X	X		X	X
Dreams			X	X	X
Fire	X		X	X	X
Initiation		X	X	X	X
Manifesting the desire for learning	X	X		X	X
Music		X		X	X
Observation	X			X	X
Power transfer			X	X	X
Practical		X		X	X
Proscriptions	X			X	X
Proverbs				X	X
Rituals	X	X	X	X	X
Songs				X	X
Submission	X			X	X
System of grades	X	X		X	X
Tales/stories				X	X

Table 5.27 above reveals a total of 10/23 indigenous methods that are characteristically described having a visual nature. This table also reveals a total of 10/23 that derives characteristically from the practical nature and 9/23 from the spiritual nature. It is important to note that the category of spiritual nature in Table 5.27 and the category of spiritual method in Table 5.26 indicate two different settings or contexts. The difference between the two contexts is that in Table 5.27, the indigenous methods are naturally spiritual, while in Table 5.26, the indigenous methods are functionally spiritual. It is because of the functional aspect that the hybrid characteristic was found in the category of spiritual methods.

Moreover, this table indicates that the two categories of traditional nature and oral nature include all the indigenous teaching and learning methods.

5.4.2 Summary of Theme 3

Data from the current theme suggest the following main conclusions:

- The nature of the indigenous teaching and learning methods of knowledge transfer is defined by various aspects.

- The research study revealed a total of five aspects or characteristics of the nature of indigenous teaching and learning methods.

- The categorisation system in this section (Theme 3) is based on the nature of the indigenous method, while in the previous section (Theme 2) the categorisation system is based on the functioning of the method. Therefore, there is on the one hand the nature of the method and on the other hand the function of the method.

- All indigenous teaching and learning methods of knowledge transfer are characteristically oral and traditional.

- The same methods can be found in different categories. This presents the categorisation system as a system in which the elements overlap.

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5.5 Theme 4: Impact of indigenous teaching and learning methods among indigenous people

The current section presents the data regarding the impact of indigenous methods of knowledge transfer among participants in this research study. It provides an overview of the effect of indigenous teaching and learning methods on trainers and trainees.

Researcher: What is the impact of indigenous teaching and learning methods among indigenous people? What effect do indigenous teaching and learning methods have on you? Or how do indigenous ways of teaching and learning affect you?

The individual responses of the participants are similar. This similitude was confirmed in focus-group discussions. The following extracts summarise the responses or views of participants to the question.

Trainer EM: Indigenous teaching and learning methods make me more enthusiastic about being [an] indigenous teacher and contributing to train many generations in my community. It allows me to be part of indigenous knowledge holders.

Trainee EGGB: It makes me more determined to learn about my culture and defend it at formal school.

Trainer JO: people say that since we didn't go to white school, we are stupid and uneducated. But the knowledge that I teach in a special way is proof that I am not uneducated. Because of this, I am more and more proud of who I am and of my cultural origins.

Trainee AM: I followed professional training at IGAD (Gabonese Institute Development Support). They taught us like at school. Some local farmers

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dropped out of the training because they did not find the ways of transferring knowledge to us interesting. It was less technical and practical. On the other hand, indigenous methods are highly technical and practical. That is why as a learner, it allows me to feel attracted and pushed to perform well during the learning process.

Trainee HM: These methods sum up the education we receive in the village. It is an education that allows us to remain ourselves despite the influence of Western culture. I believe that the national education system should be inspired by it. I study anthropology at university. I would like to specialise in rural anthropology to better promote the culture of my community.

Trainer LM: These methods create a kind of connection between the teacher, the learner, the subject studied or the lesson, and the place of teaching. In this sense, these methods result in creating a familiarity between the teacher and the learner. That is why the learner calls the teacher *Tate* (father) for men or *Mame* (mother) for women. This link contributes enormously to the increase of teachers' and learners' performance in their respective teaching and learning processes, and consequently it contributes to quality education. That is why I am motivated to give my best to make [it] more [widely] known or promote these methods.

Trainer CM: I was brought up that way myself. This allowed me to preserve my culture. With these methods, we are more efficient in our daily activities.

Trainee HDI: These methods were a source of motivation for me to do the entrance examination to the *École Normale Supérieure* (teacher training college) to become a teacher. Today I am a student teacher at the university. When I will be a teacher, I would like to use in my classroom both the Western methods that I am learning at university and the indigenous

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methods that I believe are efficient in terms of knowledge transfer. As such, I will be a teacher with more complete skills.

Trainee JM: I learned weaving from Trainer CM. Today I already practise this profession. But I continue to improve myself and supervise young students. Trainer CM teaches us concrete things. I feel comfortable in these learning conditions. This motivates me and encourages me to give the best of myself to acquire knowledge. This is how we want to learn in school.

5.5.1 Summary of Theme 4

In view of the above interviews, the following points are noted:

- Indigenous teaching and learning methods have a positive effect on indigenous trainers and trainees. On the other hand, the participants in this research study questioned the effectiveness of Western methods in their milieu.

- Indigenous teaching and learning methods create enthusiasm among trainers and trainees and a determination to defend the cultural values of these methods and their integration into the formal school system.

- Indigenous teaching and learning methods are encouraging in terms of performance in daily indigenous activities and practices. Participant-trainers individually take pride culturally in these methods.

- Indigenous teaching and learning methods provide natural conditions of comfort in the learning process to participant-trainees, particularly those who go to formal school.

- Indigenous teaching and learning methods create a kind of kinship between trainers and trainees, which results in a favourable learning environment based on trust and respect.

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5.6 Theme 5: Comparison between indigenous methods and Western methods

With regard to a comparison between the two types (indigenous and Western) of teaching and learning methods, the participants in this study argued that the indigenous methods refer to the indigenous school model while the Western methods refer to the formal or Western school model. In addition, indigenous people consider that indigenous methods are more appropriate in terms of a quality system of teaching and learning for quality education in rural communities than Western methods, as captured in the following participants' responses.

Researcher: What do you think about indigenous methods of knowledge transfer in comparison to Western methods?

Trainee EGGB: When we compare the two types of school, we see that it is almost the same way of doing things when we speak about how it is organised. There are training programmes, lessons, teaching and learning methods, and assessment. Except that what we learn at formal school and the way we learn does not help us enough in our daily life in rural areas [or] even in urban regions. For example, indigenous school teaches us resourcefulness, but at formal school we only have to repeat their long lessons in classrooms.

Trainer LM: Indigenous teaching and learning methods are the most appropriate methods of knowledge transfer for African societies compared to Western methods, which concern Western societies. Indigenous methods keep both teachers and learners connected to the capacity of thinking within their culture. This has a more positive impact on the development of their intellectual skills.

On the other hand, because the Western methods are originally different from local customs and realities, these methods rather contribute to the deconstruction of indigenous learners' basic or home education. Thus, this does not help learners [to perform well] in their learning process.

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Trainer EM: Western methods are designed for Western education systems to respond to Western conditions and realities. Western methods have also been designed for changing the existing African education systems in order to control and dominate African people for colonisation purposes. In this context only, indigenous methods are the most significant methods to educate African younger and future generations.

Trainer JBP: In [the] indigenous school model, everything is a lesson to be learnt and to be taught to others. Lessons are the activities that we have or the daily practices which reflect our occupations. However, there are main activities and secondary activities. For example, agriculture, fishing, hunting, traditional medicine, and religion are main activities. Secondary activities derive from main activities. Main and secondary activities are all main lessons and sub-lessons or knowledges that contribute to our education.

Trainee WIM: In traditional school, hunting is, for example, a main lesson. The students are placed in groups. One group is for learning the sub-lesson such as hunting with the net. Another group is for learning how to hunt with traps. In addition, hunting with traps comprises several sub-lessons related to the type of animals to be hunted. For example, the elephants that destroy our plantations, there is a way of trapping them which is different from the traps for porcupines and gazelles.

Trainee GRM: We speak about education in an environment in which people are focused on [the] oral tradition and [the] practice of rural habits. So, teaching and learning systems must respect these standards. As a result, indigenous methods are the most effective for schooling. These methods go a long way in keeping our minds awake.

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Trainee PLKN: With indigenous methods, I have many times experienced the possibility of learning [a] diversity of lessons through one method. Likewise, one lesson can be learnt through many ways of learning.

Trainee HDI: I grew up in this village. I did my primary school in this village. Today I am a university student. I know the difference between traditional school and modern school. I feel more comfortable with learning things through indigenous methods because it offers a diversity of learning techniques to learners.

Trainee JM: I learnt weaving from Trainer CM. I make baskets and mats that I sell. It helps me to have a better life. I believe that to develop our country, we must build on or from the intrinsic values that we have. These values are rooted in indigenous teaching and learning methods.

5.6.1 Structure of both Western and indigenous model of schools

With regard to a comparison of the two models of school, the participants in this study confirmed that the indigenous school model and Western school model are similar in terms of structure and organisation. Participants argued that both systems have, for example, training programmes, disciplines, classes, lessons, methods, etc., as highlighted in the excerpts above. Table 5.28 overleaf presents the indigenous school model in comparison with the model of the formal Western school. This table compares both models of school. It also shows what each indigenous item comprising the indigenous school model refers to in the Western school model.

Table 5.28: *Comparison between Western school model and indigenous school model*

Items	Modern/Western formal school model	Indigenous school model	
Field/Domain	Education	Bwiti	Indigenous agriculture
Course/Discipline	Language Education	Healing	Market gardening
Programme	BEd Honours	Healer	Farmer
Curriculum Content	Modules + mini thesis	Activities of healing	Activities of market gardening
Subject/Module	BEd 726 Sociolinguistics in Education	Healing with mystical and/or magical power Healing with medicinal plants, etc.	Ploughing in the marketing gardening context, planting in the market gardening context, harvesting in the market gardening context, etc.
Class	Lecture, tutorial, seminar, workshop, or supervisor meeting	**Teaching & learning time:** *Mulonzi + Bane ba icol (Bwiti master healer or traditional doctor who is initiated into Bwiti + learners)* **Coaching**: *Mulonzi + Mwane icol/learner. (Here Mulonzi can include a Bwiti master other than your trainer.)* or **Sponsorship**: (*Bwiti patriarchs, ancestral tradition holders + Bwiti master and his learners*)	**Teaching & learning time:** *Mulonzi (farmer teacher) + Mwane icol/bane ba icol (learner/learners)*
Lesson	Difference between tribal society education and state society education	Knowing medicinal plants, medical care, codes of communication with the spirits of plants or the forest, techniques of knowing the origins of diseases, etc.	Eggplant planting, spinach planting, okra planting, etc.
Method of teaching & learning	Face-to-face contact, blended, online learning, focus-group discussion, practical, etc.	Observing; Practical, communicating with the spirits of nature, proscriptions, submission, system of grades, songs, fire, power transfer, etc.	Observing; practical, proscriptions, continual assistance, etc.
Assessment	Homework, essay, quiz, test, presentation or practical.	Doing and practising, continual discussion, continual assistance, or public presentation (official ceremonies)	Doing and practising; continual assistance.

From Table 5.28 above, regarding the participants' clarifications, the following emerge:

- The example of the Western school model is taken from the Department of Language Education in the Faculty of Education at the University of the Western Cape.

- The example of the indigenous school model is taken from the process of knowledge transfer within Bwiti and indigenous agriculture.

- The term 'activities' includes practical or experimental activities, theoretical activities, and spiritual or mystical activities.

- Coaching is not an imperative in all activities related to the process of knowledge transfer. Coaching is demanded only in the context of spiritual or mystical knowledge transfer. Coaching includes only one coach and one learner because it is not recommended in terms of good performance or relevant skills to coach learners simultaneously. All learners do not have similar capacities and attitudes to learning. This can delay the knowledge acquisition process or cause it to fail.

- Sponsorship is non-imperative like coaching. It is mostly attached to the perspective of promoting and perpetuating indispensable ancestral traditions. In this table, the purpose of sponsorship is doubled. First, in the context of religion, it serves to promote and perpetuate the religion (i.e., Bwiti, Mwiri). Second, in the context of Bwiti as an illustration of indigenous school functioning, it serves to promote and perpetuate the form of school that Bwiti itself is.

- All of these methods are not necessarily used at the same time. The use of the method depends on the type of lesson and the conditions of teaching and learning (time and space).

- The term curriculum refers to activity or a set of similar activities (i.e., activities of healing).

- Each category (field, module) is a system and each element of the category (module, lesson) refers also to a system. As such, the indigenous system of knowledge transfer or in the larger sense, the indigenous school system, is a set of systems.

5.6.2 Notion of generic terms within the indigenous school model

In the context of the indigenous school model, the notion of 'generic terms' or 'generic names' is identified. For instance, indigenous knowledge, indigenous lesson, and

indigenous method are terms that are highlighted as generic terms. These are representative terms. The following table is an illustration.

Table 5.29 below presents the categorisation of generic terms. The aim of this table is first to demonstrate that there are terms whose use includes a set of other terms or items. Secondly, the table indicates the existence of the category of generic terms which is shaped by the three terms: 'indigenous knowledge', 'indigenous lesson', and 'indigenous method'.

Table 5.29: *Categorisation of generic terms*

Generic term categories	Set of included terms
Category of indigenous knowledge	• Indigenous activity • Indigenous curriculum • Indigenous field • Indigenous being • Indigenous know-how • Indigenous lesson • Indigenous method • Indigenous practice, etc.
Category of indigenous lesson	• Indigenous activity • Indigenous assessment • Indigenous field • Indigenous subject • Indigenous teaching and learning time, etc.
Category of indigenous method	• Indigenous assessment • Indigenous lesson or sub-lesson • Indigenous materials or instruments for knowledge transfer • Indigenous practical exercises in the knowledge transfer process • Indigenous techniques of knowledge transfer process • Indigenous way of knowledge transfer, etc.

Table 5.29 above reveals the following:

- Indigenous knowledge is a generic term that represents a set of terms that includes indigenous activity, indigenous field, indigenous lesson, indigenous method, etc.

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- There are terms that can be included in different categories, i.e., indigenous activity, indigenous field, and indigenous lesson. So, the notion of a generic term is also characterised by a principle of subdivision. For example, 'indigenous lesson' and 'indigenous method' are also generic terms, even though they are incorporated in the generic term 'indigenous knowledge'.

- Each category represents a semantic field. For instance, indigenous knowledge refers to a semantic field which includes meanings such as indigenous practice, indigenous method, indigenous lesson, indigenous field, indigenous activity, etc.

- A category can be included in another category. For example:
  - Category of indigenous lesson in the category of indigenous knowledge
  - Category of indigenous method in both the category of indigenous lesson and indigenous knowledge

5.6.3 Summary of Theme 5

To summarise, with regard to what indigenous people think about indigenous methods of knowledge transfer compared with Western methods, the data suggests:

- Indigenous teaching and learning methods of knowledge transfer refer to the traditional home-education model and are considered an indigenous school model.

- The indigenous school model and Western school model are structurally similar. However, functionally or in terms of procedures, the indigenous school model is best adapted to Gabonese realities and social needs.

- Indigenous methods of knowledge transfer are resourceful, while Western methods mainly alienate local social mores or cultures.

- Indigenous methods of knowledge transfer appear more appropriate than Western methods in terms of responding better to values and competencies that Gabonese people need to face their daily social challenges in rural areas particularly.

- Indigenous methods of knowledge transfer are all-inclusive and/or unlimited. Unlike Western methods of formal schooling, indigenous teaching and learning methods of knowledge transfer are characteristically complex and offer a diversity of alternative ways of knowledge production in rural contexts.

5.7 Theme 6: Impact of indigenous teaching and learning methods in education and sustainability

This section provides data on the impact of indigenous teaching and learning methods on education and society sustainability as perceived by the participants in this research study. The research question highlighted in this frame was first asked individually before it guided the group interviews or focus-group discussions.

Researcher: What do you think about indigenous teaching and learning methods of knowledge transfer with regard to education and sustainability? What is their impact on education and sustainability?

With regard to this question, the participants confirmed that indigenous teaching and learning methods are more appropriate than Western teaching and learning methods regarding knowledge production, education quality, and sustainability. This is revealed in the excerpts below.

Trainee EGGB: From my personal experience and from what I see at school in our country, I think indigenous methods of accessing education are more resourceful than Western methods because indigenous methods are more adaptable and applicable in Gabon. We are not in Europe to be taught or to learn like Europeans. The more we do like Europeans without considering local realities, the more our education system will be in trouble. That is why there are usually strikes, bad results in national examinations in education. Change is needed.

Trainer EM: Indigenous teaching and learning methods influence formal school here in Kery village. In this village, teachers at school have no other choice to draw on their indigenous skills and capacities to transmit knowledge to our children due to the lack of Western teaching and learning materials such as books, science instruments, etc. So, if our children in rural communities pass the *Certificat*

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d'Etudes Primaires (national examination in the final year of primary school) and the *Brevet d'Etudes du Premier Cycle* (national examination in the final year of middle school), it is because the majority of the work and preparation is done through indigenous teaching and learning methods. Therefore, I think the indigenous methods contribute to quality education and sustainability.

Trainee HM: Western school is closely linked to modernity in all its senses. It's a good thing, but it further detaches us from our own culture. It perverts mainly young people. For example, many young people today want to look like American stars. They no longer speak their mother tongues well, even here in Kery village. They no longer participate in traditional dances. It is rather Western culture, including Western dance and music that attracts them. On the other hand, indigenous forms of education are what perpetuate our existence.
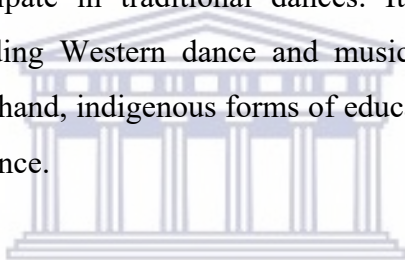
Trainer LM: I think indigenous teaching and learning methods are more resourceful and advantageous in a country like Gabon because this model of school is based on our cultural identity and social realities. Therefore, [the] indigenous model of school is the most appropriate way to preserve our culture and it favours suitable development of the country.

Trainee HDI: [If the] education system of a country must reflect the culture of this country, then [the] indigenous model of school must be more promoted in our country. Formal school must also deal with indigenous science as well as indigenous teaching and learning methods. This will increase the quality of education and suitable development in our country.

The above-presented excerpts are illustrations that the participants in this research think that indigenous teaching and learning methods are sources of relevant knowledge production and therefore have a positive impact on education and sustainability.

5.7.1 Summary of Theme 6

The participants' responses given above reflect the following insights:

- Indigenous teaching and learning methods of knowledge are resourceful in terms of adaptability and applicability with a kind of education that is in accordance with local cultural values. For this reason, participants think that these methods are a source of quality education and sustainability in Gabon.
- Indigenous teaching and learning methods contribute to the promotion of indigenous education systems as well as local culture. This is a factor in sustainable development.
- Indigenous teaching and learning methods are main systems of knowledge production which provide people with skills that enable them to create activities and businesses that reflect and/or support the economy in rural communities particularly.
- Indigenous teaching and learning methods contribute to young generations' success in national examinations in rural formal schools. Hence, these methods contribute to quality education and the increase of human capital in rural communities.

5.8 Conclusion

This chapter presented the data and their analysis. The chapter dealt with indigenous teaching and learning methods employed in the process of transferring knowledge. The chapter investigated the responses to the research questions. In response to RQ1, it discussed a diversity of forms of indigenous knowledge engaged in the process of knowledge transmission and acquisition. It also discussed the names, definitions, and various roles of a total of 23 indigenous teaching and learning methods of knowledge transfer as well as a total of five of their characteristics.

In response to the last three research questions (RQ2, RQ3, and RQ4), it examined how indigenous teaching and learning methods affect indigenous people. It also examined the impact of these methods on education and community progress after determining the

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opinions of indigenous people in comparing these methods to Western methods. In addition, the chapter employed a descriptive-interpretive approach to data analysis based on a categorisation system with an explanation of the aspects of this categorisation system. This explanation is amplified and discussed in the next chapter.

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CHAPTER 6:
DISCUSSION AND INTERPRETATION OF DATA

6.1 Introduction

In this chapter, I discuss the findings of the data I gathered from personal observation and from the interviews with the participants in this research study. This chapter provides an interpretation of the findings with reference to the research questions. The main aim of my study was to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. I investigated the outcomes of the indigenous methods used in the process of transferring knowledge and the impact of these outcomes on education in Gabon particularly.

The discussion of data is presented under the research questions, more specifically through the same themes highlighted in the preceding Chapter 5 regarding the presentation of data. In this chapter, I present my discussion of the findings under the following themes:

Theme 1: Types of indigenous knowledge

Theme 2: Types of indigenous teaching and learning methods

Theme 3: Nature of indigenous teaching and learning methods

Theme 4: Impact of indigenous teaching and learning methods among indigenous people

Theme 5: Comparison between indigenous methods and Western methods

Theme 6: Impact of indigenous teaching and learning methods in education and sustainability

6.2 Types of indigenous knowledge

6.2.1 Understanding the concept of indigenous knowledge in Gabon's rural communities

Regarding the understanding of the concept of indigenous knowledge, the findings of the study reveal that speaking about indigenous knowledge implies to speak about a generic or representative term. This representative term can include indigenous activities,

practices, fields, lessons, and methods of knowledge transfer. All these elements constitute a system. Hence, indigenous knowledge is a set of systems.

Described as such, indigenous knowledge can be understood as a holistic system of thoughts and skills that is at the centre of indigenous peoples' lifestyles. This confirms the assertion that indigenous knowledge is not exclusive. It is rather inclusive and located at the heart of indigenous societies' existence (Nande, 2016:142). Thus, the findings of the study demonstrated that Western knowledge is not at the centre of life in Gabon's rural communities. The findings deal with the decolonial view of representing indigenous communities. Instead of silencing or dehumanising the knowledge and practices of indigenous people, this study consists of restoring and promoting their value. Likewise, the decolonial approach consists of considering the value of indigenous forms of thinking, practising, and being that have been dehumanised through colonisation (Maldonado-Torres, 2011:2).

As a result, the findings suggest that among indigenous communities, indigenous knowledge refers to or includes modes of thinking, doing, being, and living. This is in line with research done by Mpofu and Miruka (2009:85). The results of this research reveal that indigenous knowledge covers a diversity of types of knowledge.

Figure 6.1 and Figure 6.2 overleaf display an understanding of the concept of indigenous knowledge among Gabon's indigenous communities. They also show the significance of indigenous knowledge.

Figure 6.1: *Indigenous knowledge (a generic term)*
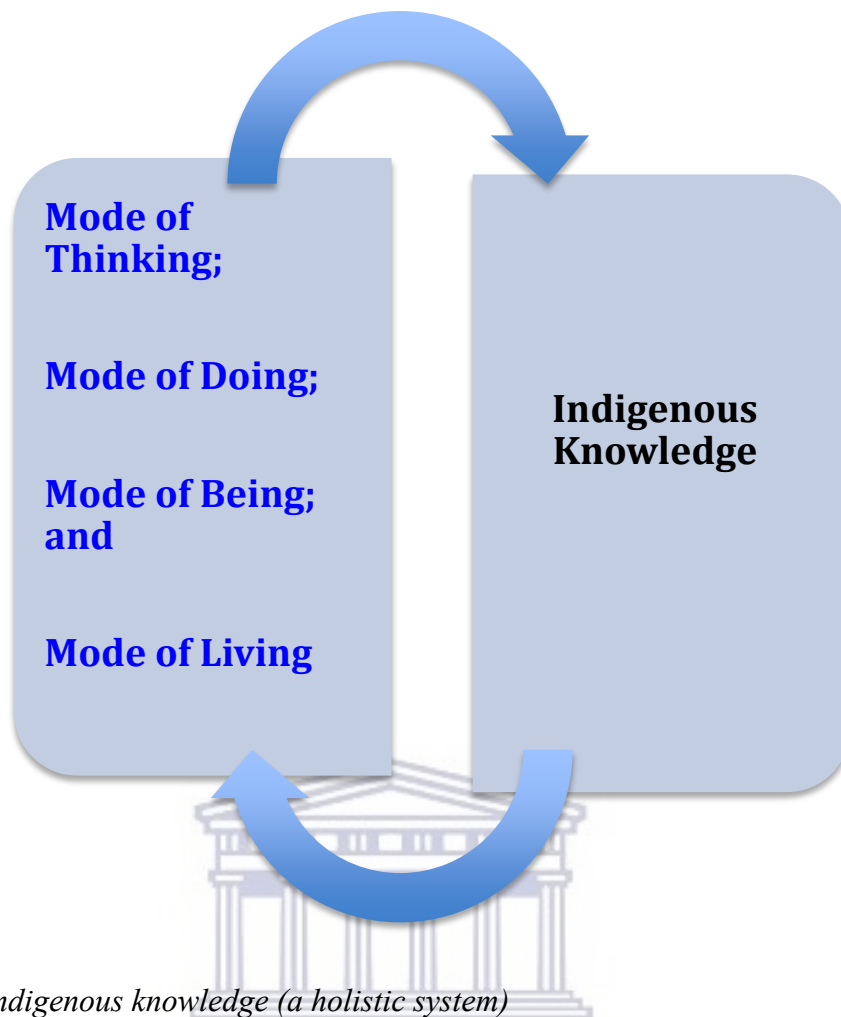
Figure 6.2: *Indigenous knowledge (a holistic system)*

Indigenous knowledge is therefore represented in both singular and plural forms. The singular form is when it represents one activity, one knowledge, or one system. In this sense, I believe it is preferable to label the term 'indigenous knowledge'. The plural form is when it represents a set of activities, knowledges, or systems. In this second sense, it is appropriate to label the term 'indigenous knowledge systems'. In view of the above and drawing on the anthropological perspective, I conclude that indigenous knowledge refers to traditional know-how and know-being that are a set of systems. These systems are the principal modes of thinking, doing, being, and living that serve to resolve any issue related to existence, particularly in a limited environment or for the entire humanity in general. These systems are both material (techniques) and immaterial (thoughts, beliefs, symbols or representations) constructions.

6.2.2 Indigenous knowledge as a set of overlapping systems

In the education context, indigenous knowledge functioning refers to a set of overlapping systems. The findings of this research study reveal three fundamental characteristics observed between indigenous activities or lessons, and between different indigenous methods of knowledge transfer. These fundamental characteristics are as follows:

6.2.2.1 Interconnectivity

The description of indigenous knowledge as a generic term and holistic system supposes that all the terms included in the lexical field of indigenous knowledge are interconnected. This also means that all systems that comprise indigenous knowledge are interconnected. For example, in Chapter 5, Table 5.29, it is illustrated that indigenous knowledge is a generic term that covers the following:

- indigenous activity
- indigenous curriculum
- indigenous field
- indigenous being
- indigenous know-how
- indigenous lesson
- indigenous method
- indigenous practice
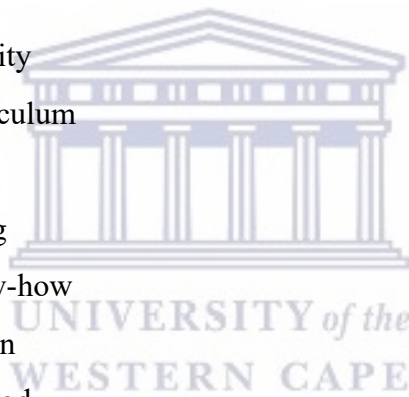
This means all these terms are interconnected and can be considered synonyms in this context.

Similarly, indigenous teaching and learning methods appear interconnected within the process of knowledge transfer. This interconnection is perceived or established when the different terms (names of activities, fields or lessons), systems, or methods have the same characteristics such as the same meaning, the same role, and similar functioning. This interconnection is also established when these elements provide similar outcomes. For example, in the sense of indigenous knowledge production or education acquisition, indigenous activities such as fishing and hunting can be interconnected respectively with indigenous lessons on how to fish and how to hunt. This is because these activities and lessons are both systems of knowledge that have the same outcome, e.g., production of knowledge about fishing and hunting or offering qualifications in fishing and hunting.

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Mpofu and Miruka (2009:85) note that indigenous people acquire knowledge and education within the activities that they practise every single day. According to Mugwisi (2017:160), these activities or practices constitute simultaneously indigenous knowledge and fields of activities as well as teaching and learning content.

6.2.2.2 Reinforcement

A closer look at the interpretative analysis of the methods of knowledge transfer indicates that many teaching and learning methods can be used in the same defined process of transferring knowledge. In this context, one method constitutes the main method and the others refer to the substitute methods. The substitute methods serve to reinforce the main method. For instance, all the participants in this study agreed that the collecting method (i.e., in the process of collecting medicinal plants) can include the 'observation method', 'method of calling the spirits', and 'method of communicating with the spirits of nature' in order to complete a lesson related to traditional medicine. Therefore, the three latter methods reinforce the first method.

In addition, the data show that the observation method and the practical method are types of methods that are both teaching and learning methods. These two methods can also be used in all types of lessons to transfer or acquire knowledge. This indicates that these two methods are an additional way of knowledge transfer. As is the case in many processes of training or knowledge acquisition, observing and practising are usually the kinds of approaches used in the training process. The objective is either to improve teaching and learning skills, or to complete the training process effectively.

6.2.2.3 Overlapping

The results of the data analysis show that the overlapping characteristic is justified by the fact that indigenous activities or lessons as well as indigenous methods can complete or substitute each other. These elements may have multiple specifics which make them similar (e.g., involved in the same category) or different from each other (e.g., involved in a separate category).

An indigenous lesson is taught and learned through the indigenous method of teaching and learning. Regarding the interpretation of the participants' interviews and the series of teaching and learning moments that I attended in Kery village, it appears that the use of additional methods can make the first method become a kind of second lesson to be

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taught and learned. For example, in the case of teaching and learning about indigenous healthcare, the 'method of communicating with the spirits of nature' can be used. This method can also be reinforced with the method of songs. The reinforcement here creates automatically a new lesson that is *'how to communicate with the spirits of nature'*. In other words, this is an epistemological system that underlines that when two indigenous methods are involved consecutively in the process of teaching and learning a lesson, the first method becomes another lesson.

Similarly, the method of continual assistance is sometimes used in the perspective of performing the practical method. This can be illustrated in the context of learning a 'lesson of iboga purification' (i.e., in Bwiti) through double 'methods of practical' and 'continual assistance'. The practical method here does not refer to a method, but rather it refers to a lesson on *'how to practise iboga purification'*.

These observable status changes or interactions indicate that the indigenous teaching and learning methods overlap. The characteristics of interconnectivity and reinforcement determine the overlapping characteristic. The overlapped structure indicates that the pedagogical elements can become largely the curricula or vice versa. In this perspective, the data of the study deal with a decolonial approach of teaching and learning because it is undeniably different from the Western pedagogical systems. For Mbembe (2016:37), this decolonial approach is about other pedagogical principles that propose another philosophy of knowledge and education. This philosophy is purely an African tradition.

The overlapping system is a form of flexible, adaptable, unrestricted and optimal education system on behalf of learners. Indigenous learners thereby acquire a generalised education. This education allows them to be able to develop personal skills to manage their environment as well as to be able to adapt to a foreign environment. Ndwandwe et al. (2017:272) note that indigenous knowledge systems contribute to the development of the human intellect and to morality. Additionally, Nande (2016:142) notes that this resourcefulness enables indigenous people to manage their existence and their adaptation in multiform environments and life conditions. That is why indigenous learners are capable of performing in both indigenous and Western school systems (e.g., in Keri village), while Western learners could find it difficult to succeed in an indigenous school system. Similarly, young villagers indigenously educated could be able to adapt in urban areas, while young people in urban areas with a Western education could be incapable of adapting to rural areas where conditions of living are

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challenging. Hence, it can be concluded that indigenous knowledge contributes to relevant education.

Aspects such as this may confirm the important role of indigenous pedagogies regarding knowledge production and education acquisition. Mlambo and Rambe (2021) propose that the ways of transferring knowledge must reflect relevant learning settings constructed by educators. They term it 'constructivist pedagogy'. For Mlambo and Rambe (2021:80), constructivist pedagogy refers to a paradigm of learning that provides motivation and determination to learners. It is a sort of learning condition that enables learners to participate actively in their learning process through tasks that improve their 'real-world skills' rather than just promoting Western knowledge recall. What Mlambo and Rambe (2021) term 'real-world skills' can be understood as intellectual aptitudes acquired from life experience, including activities and realities that learners face daily in their social environment.

6.2.3 Indigenous knowledge as a decolonial source of knowledge

As noted earlier, the finding of this study indicated that indigenous knowledge is all-inclusive, including lessons to produce knowledge in general. Therefore, data from the current research study suggest that indigenous knowledge is part of the sources of knowledge production in the world as is the case for Western knowledge. In the same sense, the data of the study reflect a decolonial mode of thinking that challenges the colonial vision of producing or considering knowledge. In fact, the concern with the decolonial source of knowledge in this context is that the data propose new paradigms of considering knowledge that suggest alternative worldviews of producing knowledge and generate a diversity of codes and sources of knowledge (Maldonado-Torres, 2011:1).

In addition to this, Tuhiwai Smith (1999:28) argued that indigenous knowledge is naturally a decolonial knowledge as it reinforces the attachment between indigenous people or communities with their origins as well as their modes of thinking and interacting with the world. This on the one hand contradicts erroneous ideas about the knowledge of indigenous people promoted through the supremacy of Western knowledge (Ramoupi, 2014:271), and on the other hand the unique authenticity or veracity of Western knowledge.

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6.3 Types of indigenous teaching and learning methods

6.3.1 A diversity of indigenous teaching and learning methods

As presented in Chapter 5, the findings indicate in general an indigenous pedagogical system which is complex through a diversity of indigenous teaching and learning methods. These indigenous methods refer singularly to the integration of indigenous knowledge into the teaching and learning processes. In simple terms, these methods are indigenous ways that indigenous people use in order to transmit and acquire education.

The description of these methods demonstrated that indigenous pedagogies play a significant role in education in both the traditional home education model and in rural formal schools. This is in line with Hoadley and Jansen (2009:158) who stated that all significant ways of transferring knowledge should be relevant and meaningful to learners' lives. Undeniably, the data of this research revealed that the indigenous pedagogical system does not detach learners from their realities during the process of training. It allows learners to perform with reference to their realities. In addition to this, the data confirm the theoretical thought that supports the present research study. The findings reflect a decolonial approach which considers that the essence of knowledge is linked to the place where that knowledge is expressed. Hence, decolonial education entails knowledge that maintains the connection between people's real history and the existing reality (Hoadley & Galant, 2019).

At the heart of this decolonial approach, the present study demonstrates and points to the objectives that knowledge and education cannot be only produced or evaluated through a unique mode of thinking which is Western thought. Additionally, there are various educational and particularly pedagogical systems employed in the process of knowledge transfer. These pedagogical systems are different from one another in terms of the context, space and time of their utilisation. For this reason, there is a necessity in science education for a diversity of alternative ways of knowledge transfer.

As the theoretical frame of this study suggests, the data gathered reflect a decolonial approach of validating knowledge and/or education. In fact, the findings demonstrated that knowledge production must be considered, evaluated or validated on the basis of an ideological pluralism. The very knowledge production process is about combining appropriate tools and skills to overcome any contextual misunderstanding. Therefore, knowledge production is first contextualised before being generalised. In this sense, the Western education system or particularly Western pedagogical systems cannot be simply extended as far as the African continent (Mbembe, 2016:35). As stated by Mignolo

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(2007:469), the very knowledge transfer system points to many pedagogical systems that co-exist (e.g., indigenous and Western, traditional and modern, Gabonese and French, African and European together).

6.3.2 Importance of indigenous pedagogy in the context of education in Gabon's rural communities

The effectiveness of the education system is evaluated by the efficient role played by the elements that comprise the education system. Indigenous knowledge is part of the education system in rural communities. In this section, the expression 'importance of indigenous pedagogy' refers to the role played by indigenous teaching and learning methods in the context of education in rural communities. This role implies the functioning of and contribution to indigenous pedagogy in education in rural communities. Education in rural communities comprises, on the one hand, an indigenous education model which includes traditional home education as well as the forms of indigenous school observed through Bwiti, traditional medicine school, etc. On the other hand, a Western education model refers to the formal school system established in rural areas like Kery. In simple terms, this section discusses how indigenous pedagogy is engaged in education in rural communities, and the outcomes of this engagement.

6.3.2.1 Contribution of indigenous pedagogy to the indigenous education model

In the context of the indigenous education model, indigenous activities refer to the indigenous education system put in place in rural communities for children and/or future generations. This is in line with Magara (2015:26), who noted that family, clan, community, and daily activities constitute the educational frames for teaching and learning indigenous knowledge. In addition, Odunlade and Okiki (2018:150) note that indigenous pedagogies include the way parents teach their children in terms of education transfer. Seroto (2011:78-80) specifies that these indigenous pedagogies transfer knowledge about morality, ecology, history, religion, etc., through proverbs, ancestral board games, weaving techniques, ballads, songs, ceremonies, initiation, music, dance, and poems.

Moreover, the data collected show that indigenous teaching and learning methods play an important role in the indigenous school model. Data from the current study suggest that an indigenous pedagogical system is a self-evaluated system because this

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pedagogical system allows assessing both teaching aptitudes of teachers and learning aptitudes of learners through their respective training feedback. In traditional education, parents or indigenous teachers have to ask children or learners if they understand the lesson and the way in which that lesson is taught. This kind of assessment helps to perform the training process in terms of appropriate methods of teaching and learning.

Also, the findings suggest that indigenous pedagogies naturally link the subject taught to the appropriate learning conditions. In fact, indigenous teaching and learning methods also play a role that consists of connecting the subjects taught with the correct learning environment. This learning environment includes appropriate places to learn, appropriate learning materials or instruments, as well as physical, natural (landscapes) or existing illustrations. Such basics serve to perform the process of learning or acquiring knowledge.

Furthermore, I observed how young learners (primary and secondary school) were comfortable with learning both the history of the migrations of Gisir and Galoa peoples and the French Revolution through the combined fire and story methods (Table 5.13 and Table 5.14). Additionally, their interactions and feedback during the lessons around the fire as well as during my interviews with them showed that they had assimilated their lessons well. At formal school, this seems a lesson that is not related to their level of study. Rather, this comprises the curriculum that is taught only at university, informally and unilaterally, as for Gabonese local languages (Ndinga-Koumba-Binza, 2016:46). The experience above and the fact that indigenous teaching and learning classes are done by word of mouth, observation, as well as the capacity of memorising, demonstrate that indigenous pedagogies contribute to stimulating the memory and developing the capacity to memorise things. This is conducive to an exceptional ability of learning and improves indigenous people's intellectual skills. It is also important to note that indigenous pedagogies deal with all forms of knowledge in order to provide an all-embracing education. In fact, the indigenous pedagogical system is at the centre of community knowledge production about community history, social organisation, ecology, morality, economy, religion, architecture and building, indigenous chemistry, etc.

6.3.2.2 Contribution of indigenous pedagogy to the formal school system

In most of Gabon's rural regions, there are primary school establishments. Secondary schools and higher education institutions are essentially located in Gabon's cities. In Kery, the existing primary formal school is named Public School of Kery. Pupils attend school from Monday to Friday. Weekends and days with no classes are reserved for indigenous activities such as the events or occupations presented in both Chapters 4 and 5.

Additionally, in the process of transferring knowledge, the teachers usually illustrate their lessons through the examples taken from the environment of the learners. This is also the case in the primary school in Kery. One of the participants explains as follows:

> At school, I compare what the teacher teaches us with what we learn from the traditional education. I see that there is a big difference. But when the teacher takes examples from our indigenous activities in order to explain a lesson, we are all interested in class and understand better the lesson. Or again, when the teacher gives us homework related to art (e.g. making art objects and presenting it at school), we all have excellent marks. For we practise this every single day in our occupations and we like doing that. (Trainee HDI)

From the excerpt above, I note that learners in rural areas usually face two different systems of school that inevitably influence each other and impact learners' intellectual capacities or skills. But predominantly, the formal school system is here more influenced by the indigenous education system because it is about a formal school in a rural environment. Accordingly, geographical or social context can influence the choice of particular objectives for teacher education (Robinson & Mogliacci, 2019:1). This can suggest that the thinking mode in a particular social environment can influence teaching and learning methods. Also, pedagogies should be interesting or attractive for learners with reference to their concerned lives (Hoadley & Jansen, 2009:158). Consequently, in Gabon's rural communities, the role of indigenous knowledge is known for being at the centre of an indigenous school, and for being engaged in the Western school in terms of indigenous pedagogy.

The data-collection activities or actions of this research study included visits to the Public School of Kery. I observed how teachers and pupils at a formal school deal with practical teaching and learning in a classroom. I saw the interaction of teachers and learners drawing on indigenous pedagogy to explain or argue an idea with clear illustrations. During the lessons in natural science and mathematics, teachers and

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learners use local material or objects manufactured with indigenous technology. From this experience, I assert that indigenous pedagogies contribute significantly to the process of transferring knowledge at formal school.

When I reflect on my own experience, I note that:

> I have been myself an indigenous pupil in a Catholic rural school. The teachers took examples from the landscape of the village and from our activities in order to explain appropriately the lessons of natural science, physical science, religion, and mathematics. This way of teaching is similar to the way of teaching that my parents were using for my home education about ecology, economy, morality, religion, history, etc.

Odunlade and Okiki (2018:150) note that indigenous pedagogies include the way parents teach their children in terms of education transfer. Seroto (2011:78-80) specifies that these indigenous pedagogies aim to transfer knowledge about morality, ecology, history, religion, etc., through proverbs, ancestral board games, weaving techniques, ballads, songs, ceremonies, initiation, music, dance, and poems. As a result, my own experience reveals that sometimes teachers in rural formal schools use indigenous pedagogies to transfer or produce knowledge.

In rural schools (e.g. Public School of Kery), teachers usually illustrate their lessons through examples taken from the environment of the learners, from their activities or their practices. As argued by Canbay and Beceren (2012:71), teachers' conceptions shape their management of the classroom, because what a teacher does in his classroom is directed by his conception of pedagogy, which derived from his cultural origins and beliefs, including prior experiences that shaped the teacher's personality. In this regard, indigenous pedagogy influences the Western knowledge engaged in teaching and learning in classrooms. In other words, indigenous pedagogies influence Western pedagogies in formal rural schools. Similarly, indigenous teaching and learning methods provide alternative pedagogical systems and are able to impact the content of the curriculum in rural schools. In the particular case of Gabon, this contributes to transformative education or a decolonial education system.

From the data analysis, it can be understood that decolonial education refers to an education system that is concomitant with local culture. Ngulube and Lwoga (2007:126) note that knowledge and/or education must be systematised and engaged with local society. I argue, when this is not the case, sometimes environmental realities impose,

and create naturally a desire to restructure things. That is why indigenous pedagogies are engaged significantly in rural schools.

In view of the above, it can be understood that indigenous pedagogy is inevitably introduced into (rural) formal school. Indigenous pedagogy favours integration of the double education model (i.e., indigenous and Western) among learners. This has a positive impact on quality education in rural communities. Therefore, the role of indigenous pedagogies in rural schools reinforces the discourse of decolonising school pedagogy and the curriculum. I believe that what remains to be done in this regard is to materialise the reality related to the connection between indigenous pedagogies and rural schools through introducing indigenous knowledge into the national education system. Here, the partnership between indigenous and Western knowledge shows a positive effect on society. Additionally, sustainable development seems reliable when it is supported by a system that combines both indigenous and Western knowledge systems (Shiruma, 2004). This approach is at the source of growth in many new emerging countries in Africa and beyond as demonstrated by Hove and Matashu (2021).

In addition to this, Mignolo (2020:614) notes that a nation like China was influenced by Western scholarly knowledge regarding cosmology or worldview, although this nation had its own civilisation. This affected their education systems. However, the partnership of both indigenous and Western systems in terms of knowledge production, enabled them to engage with the project of de-Westernisation and to delink completely from a Western universalisation of knowledge.

6.4 Nature of indigenous teaching and learning methods

6.4.1 Pedagogical system based on respect for the local culture

Regarding the question of the nature of indigenous methods of knowledge transfer, the findings of this study demonstrated that these methods are multifaceted. Indigenous methods of knowledge transfer refer to observation, practice, spirituality or beliefs, traditionalism or total respect for ancestral cultural heritage and oral civilisation. Similar findings were noted by Shava and Manyike (2018:36) with regard to indigenous knowledges integrated in formal education processes. Their study reveals that indigenous knowledges are transmitted orally, visually, practically, and spiritually.

The findings of this study particularly suggest that oral and spiritual aspects govern or dominate the nature of the indigenous ways of knowledge transfer. Transferring

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knowledge orally includes visual and practical characteristics of knowledge acquisition, while transferring knowledge spiritually involves the immaterial and/or invisible characteristics of knowledge acquisition. These two aspects represent the roots of the indigenous culture as well as the pillars that support social life within indigenous communities. However, it is important to note the difference between oral nature within knowledge transmission and oral culture (compared to written culture) which characterises indigenous culture globally. An oral culture or orality is a culture with no knowledge at all of writing (Ong, 2002:1).

In the context of oral cultural transmission, some orality theorists, particularly from the Milman Parry school of thought defend the idea of a certain passage from orality to writing by the transcription of vestiges of oral accounts into written texts. These texts are now taught in schools and higher education in terms of literature (Cerri, 2010:86). This is not the case in Gabon. Oral culture in Gabon still remains in its ancestral form. That is, officially there are neither written texts, nor material (e.g., a notebook) to write on in the process of teaching and learning. Undeniably, this detail is a disadvantage for transformative basic and higher education in Gabon. The transcription of oral vestiges into written texts and their integration in pedagogy and curriculum could enhance the documentation and promotion of Gabonese literature.

As mentioned earlier, the findings of the study indicate that the indigenous process of knowledge transfer is done orally. Similar findings were revealed by Masango and Nyasse (2015:54), who stated that the knowledge transmission process in indigenous communities is done by word of mouth from generation to generation, through experience and repetitive doing (Sillitoe, 2000:4). For example, O'Donoghue et al. (2019:11) reveal that when the trainer speaks or tells stories, the learner listens, memorises, and practises. All knowledges are stored in the head. The daily doing or practice of these knowledges helps to memorise them. It is for this reason that Amadou Ampâté Bâ, in a speech at the Congress of UNESCO in 1960, declared that "in Africa, an old man who dies is a library that burns" (UNESCO, 1960).

The participants in this research study attested that spiritual organisation is more reverential than physical organisation. They argued that the indigenous community authorities are first the authorities in the spiritual world before becoming authorities in the physical world. For this reason, the majority of heads of village in rural areas are first traditional religion or mystical world authorities (e.g., in the village of Kery, the head of the village is also priest of Bwiti). These authorities are at the same time holders

of the indigenous culture. The culture holders are the culture guardians and also those who are authorised to integrate new customs into the ancestral tradition in accordance with local culture.

Nel (2006) demonstrates that there is a connection between indigenous knowledge holders or guardians with the spiritual world in which they seem to hold important positions. Nel (2006:99) asserts that indigenous knowledge systems include practices of cultural tradition, customary law, rites that affect social cohesion, and spirituality that connects cosmos and being in general. In addition to this, Masango and Nyasse (2015:56) reveal that traditional healers consult the spiritual world to find solutions to treat their patients. Moreover, traditional healers who are mostly ancestral cultural guardians as well as members of community elder committees are in interaction with supernatural creatures. These creatures are in the form of ghosts or ancestral spirits (Masango & Nyasse, 2015:58). From these assertions, it can be understood that cultural guardians have knowledge and skills of both indigenous social and spiritual laws. Hence, they are usually elected to govern villages, like in the case of Kery village.

Also, the findings of the study revealed that indigenous pedagogies could be in accordance with the philosophy of *ubuntu* which emphasises respect for the lives of others and respect for society as a whole (Khupe et al., 2016:17). Indigenous teaching and learning methods of knowledge transfer rely on respect for ethics and procedures that are based on indigenous cultural values. This includes respect for one another and obedience to elders. For example, trainees must respect one another and they should always be obedient to their trainers' orders. In addition, the new trainees (younger generation) must obey the old trainees or trainees from a higher grade (older generation). This rule enables learners to cultivate the importance of acceptance of the other in order to facilitate their understanding of 'unity is strength', which is an important assertion in indigenous societies (Martin-Hill et al., 2008). This principle or philosophy of respect has been at the origin of defining learning methods of knowledge acquisition such as 'method of submission' and 'method of system of grades' (Chapter 5, Table 5.8 and Table 5.11).

6.4.2 Notion of categorisation within the indigenous pedagogical system

In the current study, the findings indicated that an indigenous education system, particularly indigenous pedagogies, is naturally connected with a system of categorisation. The categorisation of things is a natural phenomenon that presumably

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exists in all societies. This phenomenon, as explained by Lévi-Strauss (1962:22), presents itself as a requirement for the order or classification which is at the base of all thought. In other words, everyone can categorise, and sometimes people categorise without knowing it.

The essential concern of categorisation in this study is the role and nature of indigenous pedagogies, as well as the activities that constitute indigenous lessons or curricula during teaching and learning times. There is reason here to believe that in the context of an indigenous education system, indigenous teaching and learning methods and indigenous curricula are interconnected and influence one another for transformative and quality knowledge-production processes. This is observed through the system of grades within the model of the indigenous school of traditional healers in Chapter 5. However, Figure 5.1 in Chapter 5 also is a perfect illustration of first, the interconnection between indigenous pedagogies and indigenous curricula, and second, the system of categorisation within an indigenous education model or system.

From Figure 5.1, it can be understood that an indigenous education system is designed with an in-depth consideration of the process of knowledge production. That is why indigenous education is a system that relies on categorisation, for according to Creswell (2009:71-72), the purpose of categorisation is to elicit details to eliminate misunderstandings or to increase quality information. Undeniably, as seen in Figure 5.1, the process of categorisation of pedagogies or curricula reflects a mathematical operation of fractions (i.e., sub-method, sub-lesson) until a simple fraction is obtained (i.e., final sub-method, final sub-lesson), one that can no longer be reduced.

6.5 Impact of indigenous teaching and learning methods

6.5.1 Decolonial enthusiasm for indigenous education

The findings of the study demonstrated that indigenous pedagogies create a positive effect on indigenous people, characterised by an enthusiasm for promoting indigenous knowledge and an indigenous education model, and to effect changes to formal schooling. Indigenous teachers in this study testified that indigenous pedagogies reflect the resourcefulness and value of an indigenous education system. This encourages them to pay greater attention to indigenous education research and innovation. Some, especially indigenous tradition holders, could argue that their major mission in the community consists of promoting and perpetuating indigenous education systems. This

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includes indigenous pedagogies and curricula, as well as an indigenous theoretical understanding of the world. As such, indigenous education should no longer be marginalised in education systems across many societies and civilisations in the world. Therefore, the data of the current study propose, as Behari-Leak and Chetty (2021:3), the introduction or consideration of indigenous or African voices into the decolonial discourse of education.

Furthermore, the study of indigenous pedagogies has obviously impacted trainers and trainees. This impact has generated an echo in the rural community of Kery and beyond. The participants in this study perceive indigenous ways of transferring knowledge as the basis of promoting indigenous schooling in Gabon. In Kery village, an indigenous school is taking form with nine trainers and more than 20 trainees from diverse fields. This could be the starting point for increasing government awareness of the importance of effective reforms in the Gabonese education system in terms of education policies, pedagogies and school curricula.

6.5.2 The effect of indigenous pedagogies

A number of interviews I conducted revealed that the understanding and perception of indigenous methods of knowledge transfer by both trainees and trainers reflect justification for integrating indigenous pedagogies into formal schooling. This means that at formal school, both Western and indigenous teaching and learning methods should be employed in the process of knowledge transfer. This means, for example, that history lessons in formal schools could be also taught through the indigenous 'method of stories'. Natural science could be also taught in the forest through the 'method of observation' and 'method of practical'. This includes illustrations and instruments of teaching and learning that are respectful of local traditions or culture.

This illustration is in accordance with what Connell (2021:12) terms 'mosaic epistemologies' and 'solidaristic epistemologies' in the process of knowledge production. Similarly, this illustration reveals the interaction between two forms of knowing systems: from the Global North and Global South (Connell, 2021), described by Mignolo and Walsh (2018:70) as reciprocal pedagogical systems based on complementarity, lived experiences, and cosmologies.

Trainees and trainers in this research study automatically associated indigenous pedagogy with the most relevant education system. They argued that an indigenous

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pedagogy is an appropriate way of knowledge and education transfer. It is an appropriate model for schools in Gabon:

> Indigenous methods of knowledge transmission and acquisition are methods that allow learners to be directly connected to the studied subject. This connection includes the location (environment) and the culture in which the object of the study is defined. For example, at the School of Agronomy of Masuku (in Gabon), students should spend the most of their time out of the classroom. Instead of learning soil fertility in the classroom, they should be in gardens and plantations to observe and analyse the characteristics and the qualities of soils. Similarly, for studying geography and ecology, learners should visit the landscape for fresh knowledge and experience. In addition, these methods do not require writing in notebooks. Learners are directly engaged in their ability to memorise and keep things in memory as long as possible. (Trainer EM)

From the above excerpt, indigenous pedagogies appear more appropriate in the knowledge transfer process than Western pedagogies because they link the teaching and learning system with both the context in which teaching and learning occur (space, time, and place) and interest in the studied subject. This does not mean that Western pedagogies are irrelevant. Rather, as Mignolo (2021:8) explains, Western pedagogies are estimable. However, they are more appropriate to a Western context

6.5.3 Claim for reforming formal schooling in Gabon

From the participants' understanding and perception of the impact of indigenous pedagogy, it appears that indigenous pedagogy is perceived as a significant way of knowledge transfer that should be considered by the government as part of educational reform. According to the participants in this study, indigenous pedagogies are applicable at all levels of education, including the elementary level which involves children who start learning the mother tongue. In doing this, it should be considered in the national education system in the same way as Western pedagogies. Heleta (2018:48) indicates that imposed knowledge, including pedagogies and curriculum content, must end in order to observe the co-existence of other sources of knowledge transfer or sources of education acquisition.

Therefore, reforming formal schooling requires rethinking the education system in terms of teaching and learning approaches and content (Heleta, 2018:49). In the case of Gabon,

it could be, as stated by Lebeloane (2017:2), about reintroducing in formal schooling the norms, practices, values, and worldviews of Gabonese people that were marginalised by the French colonisers and neo-colonialism of the current regime. This does not mean that education in Gabon should suppress Western knowledge traditions or necessarily deal with separate education systems (an indigenous system on the one hand, and a Western system on the other).

This is about rather improving existing national education through additional educational tools and resources from Gabonese cosmology. This favours diversity, plurality, or open knowledge that science and education in general needs. As Mignolo (2021) contends, there is no scientific 'universality value' of knowing. There is rather a 'pluriversality value' of knowing. Therefore, the national education system in Gabon must be flexible and open to local or indigenous ways of knowing.

6.5.4 Decolonial vision of interaction between teachers and learners

Indigenous teaching and learning methods of knowledge transfer go beyond the (Western) standard of pedagogy. In the indigenous school system, the teachers are not simple pedagogues in the Western sense. Learners consider teachers in and out of 'indigenous classrooms' as family members who have the same duties in terms of education as their parents. Learners usually do not call their teachers by name. They call them fathers and mothers. Therefore, the findings of the study revealed that indigenous pedagogies create a familiarity, kinship, and/or parenthood between teachers and learners.

In rural communities like Kery village, it is customary that a younger person should not call an older person, an adult or an old man by his name. This is synonymous with rudeness or lack of respect. There are appropriate terms known in the Gisir language for elders, adults, and old people. Those terms are, for example, *Yaya* (big brother or big sister), *Tate* (adult man), *Mame* (adult woman), *Kak* (old people).

Moreover, the created parenthood results in ethics and respect, and confidence in the knowledge transfer process. This makes the classroom more interactive and attractive in terms of attendance. In fact, this parenthood contributes to the creation of an excellent learning environment and consequently contributes to the improvement of learners' skills. Thus, it can be understood that indigenous pedagogies are some of the ways of

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promoting good human relationships. This can have a positive impact on the social organisation of the community.

It is important to note that the purpose of indigenous educational bodies is primordially quality education in the interests of the community. This vision is different from Western educational institutions, especially at present. According to Mbembe (2016:30), Western educational institutions are increasingly focused on generating income rather than on producing knowledge. The current focus of these institutions is economic, rather than the acquisition of knowledge and provision of quality education. For this reason, Western educational institutions endorse the ambitions of global capitalism (Mbembe, 2016:37) which are also known to favour the construction of different social classes (Woons & Weier, 2017).

As capitalism continues to influence the Western educational model in the sense of losing the essence of knowledge and education, there is reason to believe that the consideration of indigenous educational values in the discourse of knowledge and education transformation will have a positive impact on the provision of quality education in African schools and universities. Hence, in the present study, the data suggest that the focus on indigenous people's voices regarding indigenous pedagogies deals with decolonisation of knowledge and/or education.
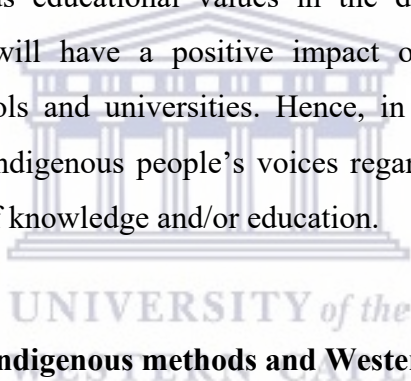
6.6 Comparison between indigenous methods and Western methods
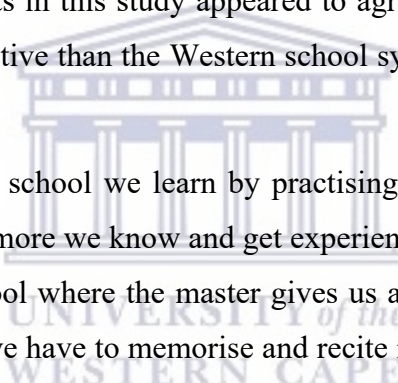
6.6.1 Structural similitude between indigenous school and Western school

The term 'method' here refers to a way of doing something systematically (Mignolo, 2021), for example, something like transferring knowledge. That can also refer to the term 'model', as in a model of school (Sayed et al., 2019). In other words, speaking about education methods refers in this section to the kind of school system or model of education system revealed earlier. The data of the study revealed that fundamentally indigenous school is structurally similar to Western school (e.g. the fields, disciplines, programmes, curricula, modules, lessons, methods, etc.) that compose the two school systems. With this in place, the indigenous school deserves a more respectable status in Gabon. It could at least be formalised or officialised as is the Koranic school in Senegal (Lozneanu & Humeau, 2014). Koranic school refers to a type of indigenous school based on the study of the *Koran*, the religious text of Islam. It helps to introduce learners to Islamic societal life (Dia et al., 2016:106).

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6.6.2 Comparison of indigenous school and Western school in terms of pedagogy and curriculum

The findings of this study clearly reflect the comparison between indigenous and Western pedagogies. This also addresses the content of curricula. The data gathered revealed what indigenous curriculum can refer to, and how it differs from a Western school curriculum. According to the participants in this study, indigenous pedagogies are more flexible and adaptive in terms of knowledge acquisition because these pedagogies draw on the local worldview for local purposes. For example, the study of Ndwandwe et al. (2017:272) demonstrated that Western and indigenous methods of learning were integrated with the specific intention to generate and develop the intellectual capacity of smallholder farmers. The results revealed that smallholder farmers were more comfortable to learn with indigenous methods compared to Western methods.

Furthermore, the participants in this study appeared to agree that the indigenous school system could be more attractive than the Western school system. One participant argued in the interview as follows:

> In traditional school we learn by practising all the time. [The] more we practise, the more we know and get experience in the field. It is not like at Western school where the master gives us a long lesson of geography or history that we have to memorise and recite in the classroom. Usually it is not [the] geography or history of our country. For me, indigenous school is more appropriate than Western school. (Trainee HDI)

From this excerpt, it can be deduced that indigenous people find what is taught to them in formal school less interesting, due to its being far from their daily focus of interest. In such a context, going to formal school can feel like a kind of alienation, since it is a requirement, although no longer interesting. The comparison of the two forms of school is due to the resentment manifested by communities who are forced to consider a model of school that is alien to their values and customs, and that does not contribute sufficiently to their social capital:

> The appropriate school system is indigenous school which is our educational ancestral heritage. Here at Kery, children go to formal school. As parents we know [the] difficulties our children deal with at formal school. Their adaptation at Western school takes a long time. What they

learn at school is good but not sufficient to make them men and women that the community needs with more wisdom and responsibilities.

But, the education we transmit to them helps them to become rapidly and efficiently more intelligent, courageous, professional, respectful, wise, and able to take care of or support their respective families. For example, in this village, there are young men of 12 years old who master techniques of hunting, fishing and farming. They sometimes go to hunt and fish alone. They learn architecture and design by making themselves houses and many other necessary things with simple local materials. A young woman of 12 years old also knows how to cook, how to wash clothes, how to shower her young brothers and sisters. She knows how to clean the entire house, how to manage a plantation. All of this is not taught and learnt at formal school. (Trainer JBP)

The insights given in the extract above were also examined and confirmed in focus-group discussions. It appears that indigenous people recognise the fact that indigenous school is more resourceful in a rural life context than Western school, as noted earlier.

6.6.3 Critical observation of the impact of the Western school model on socio-economic life in Gabon

It is significant to note that the majority of Gabon's citizens are from villages or rural areas. Their presence in cities is essentially linked to their occupation and the search for jobs and business opportunities. As such, the lifestyle of Gabonese people remains the same as in rural areas, where forms of thinking, doing, being, and living are deeply rooted in traditions except for some adaptation with certain urban realities or conditions linked to modernism. Thus, in this study, discussion of Gabon's culture or traditions includes people living in both Gabon's villages and cities.

From the experience of young learners at the Public School in Kery village, a Western school model seems inappropriate in terms of a resourceful education model for Gabon. The Western model of school does not appear responsive to the educational needs of the local populations in terms of school programmes, pedagogies, and education politics. Schools in Gabon reflect the reality that Ndlovu-Gatsheni (2013:37) described as the control of the education system by continued colonialism. This control of education includes the control of pedagogies and curricula. In the former French colonies,

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schooling and education consisted of training indigenous people to be solely employees executing tasks for France. This form of schooling still exists in Gabon. Hence, Moussavou (2014:1) points out that formal schooling in Gabon still reflects the colonial model and purposes.

Certainly, indigenous schooling consists rather of training learners in a way that makes them creative in order to accentuate their capacity for being more autonomous. This aspect of autonomy is what an indigenous model of school offers as educational outcomes as Kery village's experiences reveal. That is why it is not surprising to observe that Gabonese people living in rural areas are economically more and more independent. There are farmers, fishermen, sculptors, basket makers, etc. In Gabon, food, sculpture, baskets, and traditional medication come from rural communities.

But in urban areas, Gabonese people are less autonomous. They were trained at colonial schools as faithful administrative staff. Most of them work for the government. The economy is left in the hands of foreigners. Foreigners, mostly French, Chinese, Libyans, Moroccans, Mauritanians, Nigerians, Ghanaians, Senegalese, Malians, Burkinabe, Beninese, Togolese, and Congolese, control public contracts, transport, commerce, hotels and restaurants, rental property and banks, as well as tourism.

It therefore can be understood that for Gabonese people, an indigenous school model is the model of school that appears to be more resourceful in terms of competencies and capacity.

6.7 Impact of indigenous teaching and learning methods on education and sustainability

The current section discusses the effect of indigenous pedagogies on education and sustainability in Gabon. It discusses what indigenous pedagogies suggest in the context of the national education system and sustainable development. Essentially, it discusses what indigenous knowledge and/or indigenous education imply in this frame particularly. In this perspective, the findings of this study have shown that indigenous knowledge is at the heart of life in rural communities. In the context of education, more specifically, indigenous knowledge is the source of all intellectual abilities and skills of indigenous people that play an important role in economic and social life in rural communities.

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Even as a formal school, the Public Primary School of Kery has no books in classrooms, no library, and has not enough teachers. There are only two teachers who are also the administrative staff of the school. The participants in this study testified that the two teachers rely on indigenous pedagogies to complete the formal school programmes and better prepare the pupils for the national examinations. Therefore, the indigenous pedagogies contribute significantly to the formal school results in rural communities in the country.

As a result, an indigenous education model deserves more attention in Gabon. There is reason to consider that knowledge and education should be decolonised in Gabon. Knowledge and education can no longer simply be defined and applied solely according to Western rules. Gabon is not part of the European continent or Western culture. Additionally, many studies conducted (Idiata 2005; Moussavou 2014; Markovits et al., 2021) concur that the Western educational methods that characterise the current national educational system date from the colonial era. All this constitutes reasons why the Gabonese education system should be decolonised.

6.7.1 Decolonising knowledge and the national education system in Gabon

Decolonising knowledge and education in the context of Gabon is about achieving the objective of reforming or restructuring the national education system. This involves questioning the source of knowledge and model of education system. The purpose of this questioning is to verify the interaction between the education system and the concerned community or society.

For countries like Gabon, Ngulube and Lwoga (2007:117) note that indigenous knowledge is key to its development and the preservation of its societal identity in terms of education and sustainability. This raises the question of shaping and maintaining the education system according to the local or indigenous model rather than the foreign or Western one. In this sense, the model of education in Gabon must interact with Gabonese social needs and cultural values.

Decolonisation is complex in the sense that it reflects multiple meanings (Behari-Leak & Chetty, 2021:1). That is why speaking about decolonisation must clearly state the frame in which it is spoken. The decolonial lens engaged in this case study of Gabon relies on the triangular theoretical approaches of Mbembe, Mignolo, and Tuhiwai Smith which emphasise decolonisation as Africanisation, de-Westernisation, or indigenisation.

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I discuss decolonisation in this study by drawing on colonisation and its effects which still influence Gabon in many ways. Tuhiwai Smith (2021) states that it is fundamental to understand the decolonial perspective by thinking about colonialism as not a myth but a reality for indigenous people and indigenous communities. In Gabon, as described by Tuhiwai Smith (2021), colonialism is a set of known facts that have become modern-day ideas and strategies that continue to deny the indigenous aspirations of sovereignty, self-determination and self-control of land and natural resources, economy, and particularly, education.

In this discussion, and in accordance with Tuhiwai Smith (2021), I investigate and address critical views of eradicating the ways in which science and knowledge production in Gabon has implicated colonialism, as well as how modernity in the national education system is rooted in colonialism. I discuss this point outside of the regulation of a discipline, because the approach attached to a discipline is a way of control (Mignolo, 2021).

Therefore, I propose in this discussion a way of thinking about knowledge and education that is detached from westernisation of thinking and knowing (Mignolo, 2021) and that is rooted in Africanisation of modes of thinking and knowing (Mbembe, 2019). More specifically, Ngugi wa Thiong'o (1981) notes that decolonisation is about representing the local perspective at the centre – in this regard, the current study's claim for placing Gabon at the centre of knowledge production and education. This implies that the knowledge taught and learned in Gabonese schools and higher education institutions must reflect Gabon's cultural values and interpretations of the world for its own education development, and largely for its social, economic, and political development.

Additionally, whether the term 'decolonising' makes sense with terms like 'localising' or 'contextualising' according to Ngugi wa Thiong'o (1981), I argue that the decolonial lens I highlight in this study is in accordance with what I term *Gabonising* modes of thinking and producing knowledge and education. This is not about expunging the existing Western source of knowledge production on which the education system in Gabon is based. As argued by Connell (2021:13), it is about proposing other sources of knowledge production that bring additional skills or resources in order to advance the national education system.

Mignolo (2021) notes that decolonisation of knowledge deals with epistemic disobedience and points therefore to the reconstitution of different cosmologies in the world. As such, there is no longer one model of thinking or universality of knowledge,

but rather a plurality of sources of knowledge (Mignolo, 2021). Mignolo (2021) notes in addition that Western ways of producing knowledge consist of responding to Western questions only. Therefore, it is an aberration to believe that Western universal knowledge should be universal for all peoples in the world (Mignolo, 2021). That is why decolonisation in this study points to delinking from the Western philosophy of knowledge and claims the reconstitution of Gabonese cosmology. This means re-engaging with the way of thinking, doing, and being of Gabonese ancestors.

The decolonial turn in Central Africa began at the start of 1970 with figures like Mongo Beti (*Main basse sur le Cameroun: autopsie d'une décolonisation*) and Sony Labou Tansi (*La vie et démie*). Today, Achille Mbembe is one of the major scholars of the region. There are also scholars like Joseph Takougang (nationalism and decolonisation) and Frederick Ebot Ashu (decolonising the curriculum at Cameroonian universities). Except for Sony Labou Tansi, the Congolese, the rest are Cameroonians. In Gabon particularly, Joseph Tonda is the most referenced.

In this study, the essentials of decolonising knowledge and education entail:

- demonstrating the existing natural interaction between indigenous local knowledge and the domain of education in Gabon;
- justifying the need for decolonising the source of knowledge and education through the integration of indigenous science and local languages into the national education system; and
- emphasising the challenges of decolonising knowledge and the national education system.

6.7.1.1 Integrating indigenous science into the formal education system

The interviews indicated a call for integrating indigenous knowledge into formal schooling with a view to decolonising the national education system. One could interrogate oneself about the necessity of continuing to deal with a national education system that marginalises Gabonese culture, particularly traditional ways of knowing or ancestral art. Shava and Manyike (2018:46) proposed restructuring education that causes loss of identity and alienation from one's society and one's place in it.

The participants in this study called for introducing indigenous science in schools and higher education by drawing on the arguments based on the outcomes of indigenous techniques of agriculture and traditional medicine:

We practise more a slash-and-burn agriculture, but it is not for the purpose of destroying the forests. Those that destroy the forests are French and Chinese forest companies. Since the age of our ancestors to this day, we practise this agriculture method and we never complain about the fertility of soil becoming poor. We struggle with the poor fertility of soil since research laboratories and big companies pollute the soil with chemical products. They spill chemical products in the village and beyond for the benefit of their scientific experiments and personal resources. Nonetheless, these … refer to the Western knowledge! When Western knowledge destroys our lands and agriculture, it is applauded and validated. But when we burn small parts of our lands, and despite indigenous knowledge of conserving the fertility of the soil, this is unappreciated. We know a lot of indigenous techniques to conserve the fertility of the soil and to get more benefits in agriculture. It is not normal that those techniques are not taught at school. (Trainee AM)

Another participant expressed the same sentiment. She defended the integration of traditional medicine into formal schooling:

Traditional medicine must be studied at formal school because of its importance in our society. Traditional medicine resolves multiple health problems. For many cases, traditional medicine is sometimes better to use than Western medicine. I am a traditional doctor of cataracts and epilepsy, although I have never been at formal school. People who live in the capital come for treatment here in Kery village. Today I have more than 20 healed patients for cataracts and two for epilepsy. Then, I think traditional medicine deserves to be taught in high school and universities for the good of our country. (Trainer JO)

Regarding the participants' arguments, it is important to note that the education system within a given society must be closely interwoven with local population beliefs and practices. This can result in an increased balance of education and sustainability. In simple terms, research, curriculum, pedagogy and ontology, and other pillars of the education system, should be connected to indigenous knowledge or local values and traditions. In this way, Mamdani (2019:16) describes decolonising knowledge and education as academic freedom. He demonstrated the importance of connecting the production of knowledge and education to the 'local' (e.g. identity, philosophy, or needs

of Gabon, Africa) before engaging with the 'global' (e.g. knowledge traditions of France, Europe).

Participants' call for integrating indigenous techniques of agriculture in teaching programmes corresponds to what Moussavou (2014) proposed for the education sector in Gabon. In addition to this, Magara (2015:35-36) developed strategies and mechanisms of how to integrate these indigenous techniques or knowledges into the university curriculum. Moreover, Moussavou (2014:5) stated that indigenous knowledge systems embody traditional lifestyles. This is related to the conservation of biological diversity and sustainability. For example:

> There are community forests dedicated to spirits or ancestors. We do not hunt and we do not plant in these forests. They are consecrated for healing rituals of the sick or for initiation rituals. These are techniques that allow us to conserve biodiversity or the pure environment. (Trainer EM)

In summary, what the three transcriptions above reveal, is that indigenous science contributes significantly to agriculture and traditional medicine as well as the conservation of biodiversity. In this perspective, Mugwisi (2017:172) described indigenous agriculture practices as crop science, soil science, animal science, and post-harvest science, and stated additionally that these indigenous sciences contribute to the growth of agriculture and sustainability Similarly, Mammino and Tshiwawa (2017:221) demonstrated how indigenous chemical knowledge contributes to agriculture and the commerce of cosmetic products for the benefit of growth and sustainable development in rural areas.

All these indigenous knowledges or indigenous sciences emphasised in the studies of Mugwisi (2017) and Mammino and Tshiwawa (2017) exist in Kery village as illustrated in the findings of this study. That is why I agree with the participants in this study who argued that the distinctive quality of indigenous knowledge or science could not be ignored in the teaching and learning of science in formal schooling.

6.7.1.2 Integrating indigenous languages into the formal education system

The opinions of trainers and trainees indicated that the question of decolonising Gabon's education system cannot be divorced from the valorisation of vernacular languages. It can consist of integrating indigenous languages into the school curriculum as well as using them as one of the official languages of transferring knowledge in formal schools.

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Lebeloane (2017) demonstrated that there is more value in education when the learners learn from a young age. In this sense, native languages must be taught and employed as languages of teaching and learning from pre-primary and primary school.

According to Shava and Manyike (2018:44), languages provide access to epistemologies because languages embody the culture, knowledge and associated practices of any group of people. Therefore, integrating indigenous languages into teaching and learning systems could have implications for epistemological access and academic performance of indigenous learners (Shava & Manyike, 2018:40). However, the integration of indigenous languages into the formal education system does not mean their simple symbolic accommodation in the academy. But rather, it means their legitimisation as official languages of teaching and learning and part of the literacy curriculum (Shava & Manyike, 2018:48). This remains a problem in many African schools and in higher education, particularly in Gabon:

> I am still questioning myself why our languages are not taught in schools and universities. There are departments of French, English, Spanish, German, Italian and Arab in our schools and universities except for Gabonese vernacular languages. This is not normal. The languages of teaching and learning at school must change. Or the place of local languages must be found in the education system. (Trainer LM)

Like many African countries, Gabon is a multilingual country. There are more than 40 indigenous languages, but only French, a Western language, has a valorised status for school, business, administration, and media (Ndinga-Koumba-Binza, 2016). This derives from the language policy inherited from colonisation. The colonial language policy states:

- The French language is the only official affairs language used in all French territories.
- General school is based exclusively on the use of [the] French language, while religious teaching is based on the use of indigenous languages (Ndinga-Koumba-Binza, 2016:39).

Even after the proclamation of Gabon's independence in 1960, these colonial statements have been maintained and reinforced through inhuman attitudes encouraged in schools by colonial masters or teachers. For example, pupils who tried to speak indigenous languages at school were punished:

I remember when I was a young pupil at a Catholic school in 1968. We were forbidden to speak our mother tongues. We should only speak French. If the master or the priest found you speaking vernacular language, he punished you. Either he forces you to wear an animal skull around your neck, or he puts you on your knees in the middle of the schoolyard under the sun with stones in your hands. The objective was to humiliate us so that we would not be able to try to speak our local languages. Sometimes the teacher or the priest promised sweets and cookies to learners who would have to denounce other learners who spoke local languages in secret during the break or the recess. We had become veritably mute since we did not know how to speak French yet. (Trainer LM)

Apparently, this colonial strategy of silencing or marginalising indigenous languages was observed in many countries in the Global South. Shava and Manyike (2018:39) noted the same colonial barbarism in southern Africa. They stated that punitive measures were taken against those learners found to be speaking indigenous languages at school. One of these measures was the vernacular medal system in which class monitors would give the medal to the first victim in the class who was found to be speaking in a local language instead of English. Then, this individual would pass the medal to the next victim and the process continued. The last person found possessing the medal at the end of the school day would be punished severely, like a slave.

Since 1983 (the date of the first major national conference on education), there have been numerous and significant events regarding language policy in Gabon. These are:

- Seminar on scientific alphabet of Gabon's local languages in 1986.
- First panel on language policies and the teaching of Gabonese local languages in 1997.
- Session of reflection on the orthography of Gabon's local languages in 1999.
- Creation of the Department of Language Sciences at the Omar Bongo University in 1994 and of the Department of Applied Linguistics at the École Normale Supérieure (Teacher Training College) in 1998 to train school teachers in local languages.
- Creation of the Department of National Languages at the National Institute of Pedagogy in 1999 to introduce local languages in education and commission and produce books for local language teaching (Ndinga-Koumba-Binza,

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2016:40).

However, all the above have failed to attract sufficient attention from successive governments. Their adoption and ratification by the government are still suspended. This seems due to the lack of political will of the government (Idiata, 2002). Many calls for introducing Gabonese local languages in the national education system have been made, but no concrete action has indicated change or progress. This status quo persists until the present day and continues to separate the culture from the education system. Shava and Manyike (2018:37) note that language plays a significant role as a medium of communication and a conveyor of people's knowing, doing and being. In other words, the integration of local languages into the national education system points to the recognition of Gabonese cosmology.

Appiah-Opoku (1999) reminds us that education must be appropriate for learners and should engage with the growth and sustainable development of society. To illustrate this, China, India, and South Korea have valorised their indigenous languages and have integrated them in their education systems. Consequently, the level of development of these countries is more advanced than that of several European countries (Shava & Manyike, 2018:45).
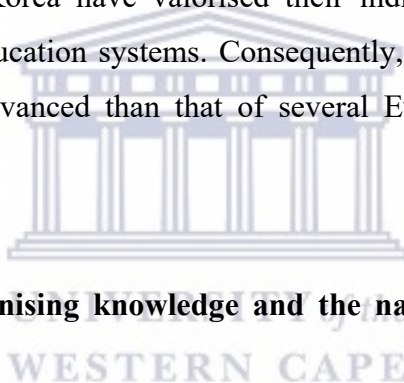
6.7.2 Challenge of decolonising knowledge and the national education system in Gabon

6.7.2.1 The politics

By the politics must be understood the politicians, authorities, government, and their influencers or lobbies. Their principal objective is to reduce or silence the call for decolonisation in order to maintain their personal interests. This produces a context of confrontation which implicitly emphasises two opposing sides. On the one side there is the movement of decolonisation demanding change. On the other side there is the anti-decolonisation group that comprises those who want to maintain the status quo for multiple individualistic reasons. In line with this, Jansen (2017a) stated that the call for decolonisation may be a sort of weapon used by a group of people to protest against the authorities (Jansen, 2017a:6). In other words, there is within the term 'decolonisation', the idea of fight or struggle.

Trainers were asked why, since 1990, the date of the advent of multiple political parties and democracy and the first significant moments related to the call for decolonising

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schools in Gabon (Ndinga-Koumba-Binza, 2010), nothing has been done? All the trainers agreed that the problem lies with the politicians who are also the authorities. To confirm this, it is important to review briefly how schools specifically or the education system in general is presently characterised.

It can be summarised that the education system in Gabon needs fundamental reformation that will lead to disengaging from Western domination. The ongoing European hegemony in Africa emphasised by Ndlovu-Gatsheni (2013) and Langer (2017) exists in Gabon through the presence of France. France still has control of politics, economy, and education in Gabon (Moussavou, 2014). The Gabonese economy is in France's hands through its multinational firms and companies, and the control of Gabonese currency and decision making on public procurements (Ndjambou, 2013; Kohnert, 2022). European or French citizens are also involved in the system of governance in Gabon. They are political and economic advisors. Many of them are French army officers working as advisors in the security unit of the President of the Republic and the Ministry of Defence (École d'État Major Libreville-EEML, 2018). In the context of education, French citizens are involved in education institutions as directors or main officers. A decade ago, one of them was the president of the Office National du Baccalauréat (in the South African context, CEO of the National Senior Certificate examination.

Schools in Gabon, as argued by Letsekha (2013:9), require fundamental renovation of the whole model underlying the current educational system. In Gabon, syndicates in higher education and middle school always disagree with the government about the French school model imposed since the colonial period. The syndicates have always denounced and tried to disrupt the existing colonial education system. However, there are many powerful individuals and interest groups which resist this change. These individuals and interest groups work for what Sardar (2008) terms the 'whiteness' or more specifically the 'Frenchness'. For this reason, education in Gabon has for a long time suffered various strikes, as was the case recently in 2020 and 2021.

In fact, the National Conference on Education in 1983 approved innovative actions to improve the quality of the education system. The Conference decided on the following improvements:

1) The transformation of the primary school into a structure that favours traditional values and technologies, as well as indigenous languages.

2) The systematic revision of curricula at all school levels (primary, secondary, and higher education), with a view to strengthening science and technology in education, and better adaptation to the job market (BIE-UNESCO, 2001:40).

This innovative project suggests the integration of indigenous knowledge systems into the national education system. A mandate was given to the officials of the Ministry of National Education, more specifically, to those of the National Pedagogical Institute, to develop appropriate curricula. Dodo Bounguendza, National Education Ministry Advisor in charge of the innovative project in collaboration with the National Pedagogical Institute, stated:

> We wanted to build a society that promotes and defends social justice, equal opportunities, freedom, international understanding, in terms of education. We also wanted to train citizens of action, fully fulfilled, aware of their responsibilities, and reconciled with themselves and their history (BIE-UNESCO, 2001:40).

However, two decades later, this is still in the form of a project and starting to generate protests among educators and academics. For this reason, the government organised a national workshop on education in 2010 to review all projects and actions as well as develop strategies for improving the national education system (Ndiaye, 2018). Similar to the national conference in 1983, the national workshop of 2010 also failed, owing to the lack of concrete realisation of the decisions taken. This encourages problems in the domain of education such as protests in primary and secondary school, as well as in higher education. According to the BIE-UNESCO (2001) report and Wali Wali and Ossé (2021), the most current and relevant demands of educators and academics consist of:

1) The integration of indigenous knowledge and its associated systems into formal schooling.
2) The reconsideration of curricula and pedagogies in schools and higher education.
3) The regularisation of the administrative problems of the personnel in the education sector. This includes their positions, salaries, advancement, and grants.
4) The restructuration of the École Normale des Instituteurs (ENI) and École Normale Supérieure (ENS), two higher education institutions for teacher training.

In 2018, the President of the Republic, Ali Bongo Ondimba, recognised in his speech to the nation, '*L'éducation est sinistrée*'. It means the state of the education system is a

disaster (Wali Wali & Ossé, 2021:1). This disastrous situation remains, despite the creation of an Education Task Force (ETF) in 2018. The ETF is a department of the Ministry of National and Higher Education which controls and monitors policies and actions for the development of education. Moreover, the consequence of the disaster in education has been the extension of the duration of degrees. In public universities, the bachelor's degree has been extended to five years instead of three years. The master's degree takes eight years instead of five years (Wali Wali & Ossé, 2021:1-2).

Formal schooling in Gabon reflects three main types of schools. The first type concerns the public sector which is experimenting with a number of protests or strikes. There are strikes led by teachers as described above and strikes led by students, usually requesting the teachers to return to classrooms. The second type concerns the small private schools with small budgets, many gaps in the quality of education, and no strikes. Wali Wali and Ossé (2021:2) assert that more than 52% of citizens who have dealt with these types of school testified that it was very difficult to get the service they needed and a total of 34% testified that they had to pay a bribe or give a gift or favour to obtain any service. Also, more than 81% of Gabonese affirm their dissatisfaction with the quality of education (Wali Wali and Ossé (2021:2).

The third type refers to large or wealthy private schools which follow the training programmes of the Republic of France. There are, for example, the following institutions:

- the *Lycée Français Blaise Pascal*
- the *Lycée Michel Montaigne*
- the *Lycée Abraham Lincoln*
- the *Lycée Paul Valérie*
- the *Lycée Victor Hugo*
- the *Écoles Conventionnées de Gros Bouquets*
- the *École Conventionnée de Charbonnages*
- the *École Primaire et Lycée Ruban Vert*, etc.

These schools are considered the best training structures in Gabon. The learners who are educated at these schools are automatically seen as the elite of the future of the country because they obtain French qualifications. In these wealthy schools, the majority of learners are children of politicians, members of government, judges, senior officers in public administration, senior officers in the army and the police, and heads of big public and private companies. In simple terms, they are the children

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of those who govern in Gabon. I was an employee as discipline general supervisor in one of these wealthy schools in 2016. I know the families of these learners. They are the kind of families that are considered the bourgeois class in Gabon.

This description of the third type of school is the result of the existence of what Ngugi wa Thiong'o (1981:2) calls the African neo-colonial bourgeoisie. The Gabonese elite creates its own world with all the privileges, such as the best jobs, education, healthcare, and other social services. This favours the division of society into social classes as in the time of colonisation and imperialism.

Access to formal education comes up against significant difficulties which suggest an uncertain future for education in general. It is not equitable, and consequently all learners do not have equal opportunities of access to progress. Therefore, schooling in Gabon is merely selective and creates a dominant class or group that will reign over the rest of the population. Undeniably, after high school, learners who are children of wealthy people benefit from scholarships to study in Europe and the United States of America. Most administrative command posts (high administration) in the country are already reserved for them at the end of their studies. These wealthy children are convinced that they are more educated and civilised than those Gabonese citizens that have studied at the poorer schools and universities in the country. This is the cycle observed in Gabon for decades as illustrated below.

> When I was an employee in this kind of rich schools in 2016, I was working from 06:30 to 18:30. Several times, I stayed working until 19:00 and over because I would wait for the children who had been forgotten to be picked up at the end of classes by their parents. [These kinds] of parents believe that everything is allowed to them as they occupy high positions in their respective work. They also have a lot of business in the country. Despite their black skin, they do not see themselves as black people; rather they think they are like white people.

> It was during the time I was waiting for parents to come that the students liked to tell me their stories. Many of these stories were terrible to hear. When a teacher was absent, I was authorised to teach students something (revising lessons or teaching them culture). This was my second moment to hear from students' stories or testimonies. Their dreams were like already realised by their parents. Some of them told me they are future judge, director, deputy, senator, mayor, minister, public or state prosecutor, etc. The students were confident because

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their parents told this to them. They were absolutely convinced to replace their parents and grandparents. Others told me they get salaries from the government already while they are still students at high school. This phenomenon is known in the country in the terms of '*les fonctionnaires fantômes*' (ghost employees).

From this testimony, the consequences of an education system badly defined and managed in the postcolonial era can be understood. This education system is a heritage from France's colonisation. So, this education system simply reflects what it was created for. According to Moussavou (2014:2), the education system imposed by France favours the supremacy of certain cultures and people over other cultures and people. This reinforces the existence of social classes and many contrasts in Gabonese society.

But above all, the consequences of neo-colonialism in Africa, which aims to fracture African societies internally and externally in order to easily control Africans and to accentuate the pillage of their various riches, can be discerned (Ngugi wa Thiong'o, 1981). In sub-Saharan Africa especially, neo-colonialism raises corrupt black people controlled by the Westerners to dominate and mistreat fellow black people. This is what Tonda (2015:127) terms black imperialists that are, in other words, local elites with Machiavellian visions of governance. This Machiavellian mentality of local elites is also described as the conversion of activists into the national bourgeoisie (Fanon, 2004:76). The national bourgeoisie is the bourgeoisie of the colonised people which is under the control of the Western bourgeoisie, with the main aim of perpetuating colonialism and imperialism (Fanon, 2017:37).

As long as the national education system still reflects the colonial education system, the scholastic achievements of children will not improve. The colonial education system encourages inequality through the division of social classes in the same society. France is itself a society composed of several social classes among which it is possible to distinguish the nobility, bourgeoisie, middle class, working class, or the disadvantaged class (Bouffartigue, 2004). Hence, decolonising education in Gabon must point to a transformative education system that includes the eradication of racial, class and spatial inequalities.

Decolonising the education system in Gabon is therefore about restoring justice, impartiality, ethics, integrity, and humanity in education in order to offer equal school opportunities to all learners, rich and poor. It is about re-examining and eradicating the dark part of the colonial vestiges from the national education system. It is in line with

what Zeleza (2009:127) called the 'deconstructionist movement'. The ideas of Zeleza derive from the deconstruction theoretical views of Jacques Derrida, which consist of rejecting or challenging the Eurocentric definition of truth and knowledge (Derrida, 2012:19-20). In his studies, *Psyché, Invention de l'autre* (Derrida, 1987) and *Le monolinguisme de l'autre* (Derrida, 1996), Derrida questioned himself on the definition of deconstruction. He demonstrated that it is non-pertinent to argue 'deconstruction exactly is...' because the definition of deconstruction itself refers to a kind of deconstructive evaluation. The deconstructive perspective or deconstructing refers thus to a kind of development of mistrust or vigilance towards the assurance of concepts or theories (Derrida, 1996:14-15). Deconstruction is therefore an ongoing questioning as is the case with decolonisation (Maldonado-Torres, 2016; Mignolo, 2020).

For this reason, deconstruction is preferably referred by Derrida (1988:38) to a movement which deals with what he terms *'plus d'une langue'* (more than one language). Therefore, it can be understood that deconstruction points to many different voices or alternative modes of thinking. In this sense, the deconstructive perspective proposed by Derrida reflects the relevant decolonial orientation Gabon needs to decolonise its education system. It thus points to considering thinking and knowing differently from France. Most of the new white educators and academics in Gabon (those who have been trained in France or Europe) are intellectually and academically out of touch with the integration of indigenous knowledge into the national education system. They see themselves as the reproducers and defenders of 'whiteness culture' (Maserumule, 2015).

In addition, as described in Mbembe (2001), numerous Western academics and researchers maintain that the African continent and its people are nothing but misery, repulsion, obscurity, and unreasonableness. For them, Africa cannot exist without the Occident or white foreigners. Books and other publications by these kinds of colonial academics and researchers are also frequently used as references to teach about Africa to Africans and the rest of the world. In Gabon, the idea that Western knowledge constitutes the only basis for appropriate education is still favoured and promoted. Thus, the appointment of white academics to teach at local high schools and universities is perceived as a considerable advance in education. But this reinforces the ongoing colonisation of the education system and refers to the status quo that I described above.

In this time of globalisation and modernism, the 'big nations' will maintain their influence to dwell at the top position of the world system of governance (the North).

They have no interest in losing their domination of 'the little nations' (the South or the Third World). For example, France is the 'big' nation that continues to dominate its ancient colonies with colonial strategies and actions, particularly the colonies from sub-Saharan Africa. The Republic of France trains the indigenous elites and their progenies for its own interests. This country has implanted a political system in Gabon since independence that continues to influence local elections and shape successive local governments. This is about the construction of an underdeveloped bourgeoisie (Fanon, 2017:37). This bourgeoisie imitates colonialist and imperialist political regimes, and encourages various forms of crimes, including corruption, maladministration, stealing public funds, and oppressing the population, mainly the poor (Fanon, 2017:37)

Hence, the origin of the decolonisation blockage is linked firstly to the political determination of rejecting change. For this reason, decolonising Gabon's education system also refers to delinking from the politicians' will, which comes from the Republic of France.

6.7.2.2 Devaluation of indigenous knowledge and indigenous education model in Gabon

From the arrival of the colonisers until this era of post-independence, indigenous knowledge and indigenous education has been resisted in Gabon through governmental measures such as those that favour the phenomenon of acculturation. *La fête de la culture* is one of those measures. Colonisation has spread untruths that African indigenous knowledge systems and particularly Gabon's ancestral traditions and philosophy are poor, bad, dangerous, and inappropriate for development (Seroto, 2011). Most of the older participants in this study testified that when they were young (in the 1960s–1980s), they were forced to go to church (Catholic church) and to accept the priest's advice, rather than to take part in traditional ceremonies and be enrolled in indigenous training centres or ancestral circles of reflection. The reason for this, Ndinga-Koumba-Binza (2016:39) notes, is that during the post-independence years (1960–1980), the Gabonese government rigorously monitored the application of the colonial laws of 1839 and 1922. These laws had respectively established that French remained the only language of school and work, and Western religions (e.g. Catholicism) to be taught in indigenous languages.

Indigenous knowledge systems are considered in the colonialist and modernist sense as savage life, barbarism, lack of civilisation, and black witchcraft. Chetty (2019a: 197)

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notes that Western hegemonic knowledge generates a discourse that considers indigenous people and their knowledges simply as anthropological knowledge about the natives or the 'barbarian others'. This negative discourse is what Mbembe (2015) calls the negation of time. The negation of time refers to the colonial or Western point of view that labels the natives as a group of people without history, located outside of time, outside of civilisation, and ontologically incapable of change and creation (Mbembe, 2015:13). Unfortunately, many Africans, and particularly Gabonese, still believe these Western philosophical assumptions.

Consequently, the lies of colonisation and neo-colonisation or modernity have penetrated Gabonese people's minds. People have started to reject their own culture and embrace Western culture. In fact, the more indigenous people engage with Western knowledge, the more they devalue their own knowledge and customs (Angoué, 2009). For example, Canal +, a French multinational firm, is the main television channel in Gabon. Its programmes promote Western culture more than local culture. Thus, Canal + is a matrix that continues to inscribe the superiority of Western culture in the mentalities of the local populations or indigenous people. This is what Ngugi wa Thiong'o (1981:3) calls 'the cultural bomb'.

6.7.2.3 Imprisoned minds

Nowadays, Gabonese young people are more and more involved in numerous activities in which they learn passionately about Western culture. They are mostly interested in Western music and dance, Western fashion, and Western beliefs. Young people living in urban areas bring these Western habits to rural areas to influence other young people. In simple terms, young people are influenced by Western modes of thinking and being, which sometimes they defend as the best lifestyle and the future. Thus, the fact of denigrating indigenous culture and upholding Western philosophy makes Gabonese young people be part of those who devalue indigenous knowledge in Gabon.

All of this corresponds to the consequences of the cultural bomb. It can be understood from Ngugi wa Thiong'o (1981:3) that a cultural bomb consists of destroying people's thinking, doing, being, and living. In other words, it detaches people from themselves. It points to dehumanising indigenous people (Tuhiwai Smith, 1999). In addition to this, Mignolo (2021) notes that Occidental paradigms are projected to construct unique thought or understandings of the world. Therefore, it aims to change the existence of local people. In simple terms, they want to Westernise the non-Western.

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Apart from local young people, there is the diaspora that relegates indigenous culture to lack of progress. They exalt Western culture as the top culture of the entire world and the future of humanity. In the context of Gabon, the diaspora, particularly diaspora from Europe, reject indigenous knowledge systems as they live and experience Western culture daily. Participants could argue that the diaspora even considers Gabon a big village. When they visit the country, they look at others as subalterns or inferiors.

Shava and Manyike (2018:44) note that the diaspora and many indigenous people living in urban areas think that those indigenous people who have no formal school qualifications and who live in rural areas are ignorant, non-educated, or stupid. On the contrary, I argue that stupidity is when you ignore yourself or when you detach yourself from your cultural roots and become 'lost'. Cabral (1979:44) demonstrates that culturally the mind (cultural thought) and the land/place (cultural place and physical place or the home) are inseparable. According to Cabral (1979:44), the land and place comprise reality. Reality is a set of things seen, touched, felt, experienced, and with which we live. Reality can be the consequence of what a human being has in his mind, but this does not mean that what we have in mind defines or impacts reality. People are part of reality, they are within reality. Thus, reality defines or impacts rather the things that people have in their mind. Therefore, the Gabonese diaspora can be identified as lost because they are losing both their indigenous mind and their indigenous land or home.

In the present day, some Gabonese citizens who previously comprised Gabon's diaspora in France occupy high positions in government. They unfortunately reproduce and defend as well what coloniality and modernity systems have transmitted to them. That is, indigenous knowledge is inferior, nonsense, and consequently could not be a source of knowledge and education in Gabon. For Fanon (2017), these people are the new local elite. Their mode of governance is similar to the one inherited from neo-colonialism or Western modernity.

From the arrival of the colonisers until this era of post-independence, it appears that there are no satisfactory governmental measures that encourage indigenous knowledge and indigenous education. According to Angoué (2009:56), the festival of culture is one of the main governmental measures in this respect. However, it is far from characterising the true culture of Gabon. Rather, it is about a represented culture, a copy highlighted by the neo-colonised political elite in order to eradicate Gabon's culture.

Culture is the way through which social identity is expressed. When Angoué (2009) summarised that the culture of Gabon is put to death by the political authorities, it means that Gabon is being dispossessed of its social identity. The dominant class combats local culture to create identity fractures inside society for the purpose of controlling and imposing on people its ideology or worldview. The dominant class in Gabon refers to those persons who see themselves as superior to others. They have control of everything, and have the final decision on everything. This group of persons constitutes local political authorities and their close partners. In addition, they are all under the control of the colonialists.

Therefore, the festival of culture in Gabon is an illusion, a project deriving from the strategy of destroying indigenous culture with the purpose of maintaining local people in ignorance, obscurantism, and dominance (Angoué, 2009:61). The saddest aspect in this matter is to see the other Gabonese citizens (the neo-colonised) inflicting suffering on their own country. At the time of the colonisation of Africa, colonialism employed white people to oppress black people. Now, neo-colonialism trains black people and employs them to oppress other black people. It is for this reason that Tonda (2015) calls them the 'Black imperialists'.

Also, when the national festival of culture includes an exhibition of foreign cultural aspects from Benin and Togo, i.e., the ritual of Vodou, it means a blended representative culture. It is rather a rejoicing ceremony among friends, a spectacle, than a national festival of traditional knowledge and values (Angoué, 2009:86). The objective here is to denaturalise the authentic culture, and to make local people deprecate and disconnect from their own culture. In doing this, the local people reject their personal culture, lose their identity, and become vulnerable and accessible to any form of dominance.

6.8 Conclusion

The chapter presented the discussion of data. I discussed the data with regard to the interpretation of the responses to each research question related to this research study. The configuration of the discussion was based on the same themes highlighted in Chapter 5. Finally, I presented the concluding remarks of the chapter.

More specifically, the discussion centred on an interpretation of the findings. The chapter indicated that the outcome of this interpretation deals with the important value of indigenous knowledge in education and provides ways that can justify the decolonisation of knowledge and the national education system in Gabon. Additionally,

the chapter demonstrated the link between the theoretical framework which underpins this research study and the findings.

CHAPTER 7:
CONCLUSION AND RECOMMENDATIONS

7.1 Introduction: A reappraisal

The discussion of the findings presented in the preceding chapter served numerous functions. It pointed out the connection between the research questions, literature review, theoretical framing of the study, and my perception of the decolonial teaching and learning process. In addition to this, it referred to the key issues that comprise the reviewed literature of my study which aided in the orientation and construction of my arguments. More importantly, it reveals the essential substance of my study, that is, the close link between indigenous knowledge and decolonisation of knowledge and/or education.

Furthermore, my study entitled *A Decolonial Study of Indigenous Teaching and Learning Methods of Knowledge Transfer in Gabon's Rural Communities* attempts an appraisal of decolonising pedagogies through recognising an indigenous model of producing knowledge and education. I believe that the talk of decolonisation of pedagogy in African basic and higher education consists of decolonisation of knowledge and education, and it points to the voice of the Africans in the talk (Behari-Leak & Chetty, 2021). Hence, I defended in this study that decolonisation is contextualisation. It deals with indigenisation (Tuhiwai Smith, 1999), Africanisation (Mbembe, 2015), as well as de-Westernisation (Mignolo, 2020). The discussion of the findings also reflects this appraisal by pointing out the link between indigenous pedagogies and the data gathered in relation to the research questions of the study.

This chapter is structured into nine sections, presented as follows.

7.2 An overview of the study

My study is a descriptive and interpretative study conducted in rural communities in the district of Ogooué et Lacs, in Gabon. Also, my study aimed to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. More specifically, it aimed to demonstrate the educational and social values of indigenous pedagogies in education in rural contexts, particularly where formal schooling is confronted with many difficulties related mainly to pedagogical resources and social environment. Therefore, the study

provides some indigenous teaching and learning methods and their role in both indigenous forms of schooling and formal schooling which is Westernised. The study suggests that if indigenous pedagogies have a positive impact on formal schooling, then these pedagogies can bring a significant reinforcement of the formal pedagogical system in the national education system.

The literature review discussed the significance and application of indigenous knowledge in education. The literature review also described indigenous ways of teaching and learning. This emphasised the indigenous education system as an alternative education model to the Western education system. As such, the literature review gave some insight in accordance with the rejection of the hegemony of Western knowledge. From this perspective, the literature review deliberated some approaches to decolonising knowledge and education that appear basically aligned with the understanding of decolonisation as anticolonial and anti-imperialist education (Maldonado-Torres, 2011) or reconstructive and transformative education (Jansen, 2019).

In addition to the above-mentioned point, this study adhered to decolonial theory. More specifically, the study was guided by an orientation towards three theoretical perspectives, which were Mbembe's view, Mignolo's insights, and Tuhiwai Smith's key thoughts. The concern of these three theoretical perspectives points to the fact that both knowledge and education are connected to people or societies. Thus, the procedure to design and validate knowledge or education must not exclude the concerned social and cultural milieu. The study relied on a decolonial theoretical perspective that considered the local before the global. The three theoretical perspectives also point to the call for detachment from the universal idea of knowledge and education production, because the existence of many cultural civilizations suggests the existence of many different sources of knowledge and diversity in perception and conception of education.

The current study used qualitative methodologies to gather data, particularly personal observations and interviews. These methodologies helped me to go through the participants' practices and lives in order to explore and understand how indigenous people teach and learn regarding the process of knowledge transfer. Therefore, the findings dealt with the researcher's participative observations and largely the participants' own experiences and voices. The observational and interview methodologies also helped me to determine the indigenous perception of knowledge and education.

7.3 Alignment of the outcomes of the study to the research questions

7.3.1 Main research question of the study

The main research objective of this study was to determine the nature of the indigenous teaching and learning methods of knowledge transfer in Gabon's rural communities. Drawing on the particular case of the two villages of Kery and Inguendja, where a number of different ethno-linguistic groups live together, the findings of the study revealed that the nature of these methods comprises different characteristics. Five characteristics were determined:

1) Visual nature
2) Practical nature
3) Spiritual nature
4) Traditional nature
5) Oral nature

7.3.1.1 Recommendation 1: Integrating the activity of writing into indigenous schools

From the data I gathered through personal observations and participants' experiences, it was deduced that indigenous teaching and learning methods are based largely on oral and spiritual aspects which influence the knowledge transmission process by word of mouth and the capacity to memorise. Undeniably, the problems of memory and the lack of notes constitute a disadvantage for the indigenous pedagogical system. Although governed by oral culture, I recommend that indigenous schools integrate notes or writing during teaching and learning classes. Even if writing in the vernacular languages in Gabon is not developed (Hubert & Mavoungou, 2010), nevertheless the possibility to write Gabonese vernacular languages using the French alphabet (Hombert, 1990) exists. This can help significantly to improve the quality of the indigenous pedagogical system. Also, the integration of writing constitutes an innovation that will aid the documentation and formalisation processes of indigenous schools.

7.3.1.2 Recommendation 2: Moving from secrecy of knowledge to open knowledge

The findings of the study showed that the spiritual nature of indigenous knowledge is a vector of the reality that indigenous knowledge is too sacred and thus kept secret. This secrecy makes some types of indigenous knowledge to be seen as a magical or mystical

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knowledge that should be specially held by a small group of indigenous people. That is why I recommend that the indigenous knowledge that refers to spiritual knowledge must also be desacralized, open and beneficial to all local people. There is an important need to open up this kind of indigenous knowledge and appropriate it before it is taken from indigenous people by Westerners. Because, while this supposed mystical knowledge is kept secret in Gabon, on the contrary, it benefits modern science in the West. For example, the ritual of initiation through which the candidate meets his ancestors in the afterlife confirms the existence of a supernatural life with the spirits. It is not just Hollywood fiction (e.g., *Black Panther* or *Avatar*). The other example is related to the fact that the practice of indigenous healthcare through the *iboga plant* is not secretive, as this plant is used in Europe and the United States in the process of detoxification of cocaine dependent individuals (Mash et al., 2018).

7.3.2 Sub-research question 1: What indigenous teaching and learning methods are used in rural communities for knowledge transfer?

The concern of this sub-research question points to the identification of indigenous teaching and learning methods. In light of the discussion of the findings of the study presented in Section 5.3 of Chapter 5, I confirm that a total of 23 indigenous teaching and learning methods are used for knowledge transfer. Apart from their exact number, these indigenous teaching and learning methods are named and described.

The description of these indigenous methods demonstrates the veracity of an indigenous pedagogical system that is at the centre of knowledge production and education in rural communities. This also generates significant skills to adapt beyond rural communities.

7.3.2.1 Recommendation 3: Documenting indigenous teaching and learning methods

Based on my literature review and my initial findings, I note that indigenous knowledge in education, specifically indigenous teaching and learning systems, is not sufficiently documented. Therefore, I recommend that indigenous pedagogies be documented. The documentation will contribute enormously to the promotion and conservation of indigenous knowledge and/or education systems. Thus, we will no longer be forced to believe with Amadou Ampâté Bâ that an old man who dies refers to an entire library that burns. Also, this will provide more local or African literature and science which is still lacking in several African national libraries, in Gabon especially.

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7.3.2.2 Recommendation 4: Evaluating the effectiveness of indigenous pedagogies

The findings revealed that learners were comfortable with studying the school curriculum through indigenous pedagogies. So, I recommend that teachers in African formal schools, particularly in Gabon, should step beyond the exigencies of Western pedagogies in classrooms. They should teach Western curricula in classrooms with the use of indigenous methods in order to evaluate the effectiveness of indigenous pedagogies and to ensure the use of alternative pedagogies. This will favour the implementation of a mixed pedagogical system (indigenous and Western pedagogies) that education in Africa needs (Le Grange, 2007).

7.3.2.3 Recommendation 5: Integrating indigenous pedagogies into the formal education system

The findings of the study demonstrate that the use of indigenous pedagogies by teachers in rural formal schools has a positive impact on performance in classrooms. My personal experience of teaching Western practices of water treatment in rural communities demonstrated that the use of indigenous ways to communicate or to transfer knowledge are more appropriate for those types of learners living in an indigenous environment. Indigenous pedagogies successfully ignite actual learners' aptitude for learning and enthusiasm, culminating in better scholastic performance. Also, with reference to Ndwandwe et al. (2017:273), these learners' aptitudes and enthusiasm are seen in their behavioural change and reactions. Therefore, I recommend that indigenous pedagogies be integrated in formal schooling in order to employ a mixed pedagogical system which results in quality education in African academies (Shiruma, 2004; Le Grange, 2007).

7.3.2.4 Recommendation 6: Creating training in pedagogical programmes for teachers

In Gabon, qualified teachers are trained at two higher education institutes: ENI for teachers in primary schools and ENS for teachers in middle and high schools. The goal of a teacher in a classroom is to successfully transmit knowledge to students. The teacher must be prepared to use a variety of methods to help students to perform in classrooms. In this context, it can be necessary to adapt the teaching method to the best way for students to learn. In other words, it is important to adapt pedagogy to the environment of the student, because education refers to a science that is locally and

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culturally produced (Le Grange, 2007:577). I thus recommend that primary and secondary school teachers also should be trained in indigenous pedagogies. I recommend that ENI and ENS should create teacher training programmes that include modules or curricula related to indigenous pedagogic skills. The goal is to teach student teachers how to use a mixed pedagogy comprising indigenous and Western methods. This can be one of the solutions to teaching and learning difficulties encountered especially in schools in Gabon's rural regions.

7.3.3 Sub-research question 2: What is the impact of those methods among indigenous learners and teachers?

The findings revealed that the impact of indigenous teaching and learning methods is considerable among trainers and trainees. This impact generally resulted in determination to promote indigenous school systems and their integration into the national education system. The study of indigenous education, and particularly the indigenous teaching and learning methods of knowledge transfer, allowed the participants to revisit in depth their proper culture; this created among them a revival of local culture appropriation and valorisation. Therefore, the reaction of trainers and trainees shows that the impact of indigenous methods of knowledge transfer was considerable.

7.3.3.1 Recommendation 7: Implementation and development of a multitude of indigenous training centres

Based on the findings of this study and their interpretation (indigenous education is important and contributes to both intelligence quotient and quality human development), I recommend the creation of a significant number of official indigenous training centres or indigenous schools throughout the country to promote indigenous education and engage with a relevant process of preserving local culture. This will aid the struggle against modernism/neo-colonialism and its systems of acculturation. Modernism would like to eradicate the cultures of peoples in order to impose a single or universal thought and to end self-determination of societies (Mignolo, 2017; Tuhiwai Smith, 2021). A country like Gabon, still under the yoke of neo-colonialism, would totally lose its cultural identity if the Western project of acculturation is maintained. In this sense, I also recommend the implementation of indigenous scientific research communities focusing

on indigenous science, literature, and humanities that include members with Western academic skills and other members with indigenous knowledge skills. In other words, these indigenous scientific research communities must involve indigenous knowledge systems holders or ancestral traditions and cultural guardians living in rural communities, as well as academics, scholars, researchers, etc.

7.3.3.2 Recommendation 8: Valorisation of indigenous science education

Colonialists and imperialists pretend to be providers of humanism, education, and civilisation to indigenous people (Mamdani, 1996; Tuhiwai Smith, 1999). They devalue indigenous culture and science because they conclude unilaterally that their Western and imperialist science is superior to other people's perspectives or worldviews (Le Grange, 2007:577). As such, when we speak about indigenous or African education, colonialists and imperialists consider this an aberration or nonsense. This reality is more dramatic in Gabon, where the national education system still reflects colonial thinking. Therefore, it is not entirely wrong to deduce that Gabon's national education system dates back more than 60 years.

I recommend that Gabonese scholars, researchers, and educators should give more attention to indigenous education research with a focus on the promotion and development of indigenous science education (Tuhiwai Smith, 1999). It is obvious that this would influence the position or consideration of indigenous science education in academia. Certainly, indigenous education research development might result in government's enthusiasm to officially introduce the cultural values defended by the Gabonese people into the national educational system.

7.3.4 Sub-research question 3: What do indigenous people think about their methods in comparison to Western methods?

Regarding sub-question 3, the impact of indigenous methods of knowledge transfer has created among indigenous learners and teachers a kind of instinctive comparison of the two forms of schooling: the indigenous model of schooling and Western model of schooling. Indicating a preference for the indigenous model of schooling, in accordance with indigenous modes of thinking, doing, being, and living, means that indigenous education is more relevant than Western education in terms of socialising Gabonese citizens.

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Moreover, trainers and trainees have mentioned that indigenous teaching and learning methods of transferring knowledge are considered more appropriate than Western ways to access relevant skills and abilities in the Gabonese context. For this reason, formal schooling in Gabon should include indigenous knowledge through the use of indigenous methods of knowledge transfer in order to improve Gabon's education system in terms of pedagogies and to have a significant impact on the rest of the process of producing knowledge and education in Gabonese society.

Furthermore, the results show that people in Kery village are more and more aware of the importance of involvement in indigenous education in order to preserve their identity. Indigenous people think that preserving indigenous education through the use of indigenous methods of transferring knowledge allows them to remain connected to their traditions and customs. The indigenous learners demonstrated that even in formal schooling, their understanding of Western science lessons in the classroom is effective when examples are taken from their indigenous experiences. Accordingly, indigenous people are aware that the knowledge they acquire in formal schooling is far removed from the knowledge derived from their African local modes of thinking, doing, being, and living. For this reason, indigenous people maintain that indigenous knowledge and/or education via the indigenous teaching and learning methods of knowledge transfer is a more significant way of preserving ancestral African culture compared to Western knowledge and its methods.

7.3.4.1 Recommendation 9: Creation of new learning modules that are mixed

Owing to the structural similarities between indigenous schools and the Western academy, and the effectiveness of indigenous knowledge in both the indigenous school and Western academy systems, I recommend the creation of new learning modules or curricula in basic and higher education that integrate both Western knowledge and indigenous knowledge. Incorporating both local knowledge and Western or global knowledge systems would ensure quality knowledge production in African academic institutions.

7.3.4.2 Recommendation 10: Formalisation of indigenous school

With regard to forms of indigenous schools such as Bwiti and Mwiri, and indigenous traditional medicine, indigenous agriculture, etc., identified, described and interpreted in

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Chapter 5 and Chapter 6, I recommend that indigenous schools be formalised in Gabon. For example, the government should formalise indigenous schools in Gabon, as Koranic schools are in Senegal. In Gabon, this formalisation would contribute to improving our capacity to appropriate and conserve our cultural heritage. Ibogaine is at the centre of Bwiti in Gabon, but is currently also highly envied in the West (Mash et al., 2018). Thus, the formalisation of a Bwiti indigenous school would constitute a kind of ibogaine protection from the usurpers of cultural identity of knowledge and science.

7.3.5 Sub-research question 4: What do indigenous people think about those methods with regard to education and sustainability?

Finally, in relation to sub-question 4, the implication of this is that indigenous people are convinced that quality education derives from indigenous teaching and learning methods, which additionally include the overlap between pedagogical elements and curriculum. In fact, the results also reveal that at the centre of indigenous pedagogies and curricula, there are notions of dignity, honour, respect, equity, solidarity, community interests, self-esteem, fraternal love, etc. These notions contribute to the socialisation of people and the construction of 'strong' nations. Consequently, indigenous people perceive in these indigenous methods the salvation of education and sustainability in Gabon.

7.3.5.1 Recommendation 11: Practical decolonial teaching and learning in the academy

The current recommendation is that Gabon's education system should include practical education cases such as engaging with indigenous teaching and learning methods in formal school classrooms. The classroom experiences proposed here consist of employing simultaneously indigenous and Western methods of knowledge transfer in the perspective of evaluating the effectiveness of the most significant way of transferring knowledge between the two types of methods in a particular context of Gabon, for example. The objective here is to deduce from the results of such research whether the hegemony of Western knowledge is scientifically justified or indigenous knowledge is also a source of producing knowledge.

7.3.5.2 Recommendation 12: Reforming the national education system

This recommendation deals with the fact that Gabon should decolonise the national education system. It is about the restructuring of the current formal school system in Gabon through the integration of indigenous knowledge. It is basically about introducing Gabonese local languages into formal schooling as not only school curricula but also as the language of study. Additionally, the practice of indigenous teaching and learning methods in the classroom proposed above in the second recommendation also reflects the integration of indigenous forms of pedagogies in the national education system. It is about bringing critical views to the existing school pedagogies in order to reform them in accordance with the cultural values defended in Gabonese society. To summarise this recommendation, these proposed reforms include primary and secondary schooling as well as higher education. The recommendation proposes reforms regarding:

a. Language of teaching and learning

I understand that one major implication of this recommendation concerns the language policy of Gabon, where French is the sole official language and thus the only language of teaching and learning. The implementation of this recommendation would undeniably require the adoption of "some native languages [that] are regionally dominant" (Ndinga-Koumba-Binza, 2007:108) as languages of teaching and learning in certain areas and provinces of Gabon. This process of adoption includes the recognition of these native languages as official languages. This also means decolonising both the official language and the language of teaching and learning in schools and universities. The example of South Africa may help in that way. IsiZulu, one of the eleven official South African languages, was integrated into the University of KwaZulu-Natal as one of the languages of communication and instruction (Lebeloane, 2017).

b. Curriculum

Drawing on Potokri (2016), curriculum can be defined as a course of study offered in schools, universities and other academic institutions. The course should be responsive to the education model emanating from the values of the concerned society. The concern with curriculum transformation consists of engaging with knowledge by critical questioning such as: "Where did this knowledge come from? In whose interest does this knowledge persist? What does it include and leave out?" (Jansen, 2017b:161).

The colonial school system and its curricula were shaped to prepare Africans to assist Europeans in the exploitation and control of the continent of Africa through their capitalist and imperialist companies (Lebeloane, 2017:5). This is the case in Gabon, where the school system still reflects the French colonial model (Moussavou, 2014). This model was set up to serve French interests and French control in Gabon (Ndong Bekale, 2016:3). Thus, the formulation of the new curricula content must remove French colonial ethics which promote the inferiority of Africans, and be shaped in Gabonese culture whose ethics promote equity and social justice.

Hence, I suggest the curriculum designers from the Gabonese National Pedagogical Institute (IPN) question the existing curriculum and elaborate the content of curricula with the native or home-grown knowledge existing in Gabon in order to address issues that face the dynamics of Gabonese society. In other words, values, philosophy, customs, and other Gabonese society factors should be considered in shaping the curriculum. Therefore, curricula must include indigenous modes of thinking, doing, knowing, being, and living. The new curricula must include Gabonese traditional civics, and integrate indigenous knowledge in existing disciplines such as biology, mathematics, chemistry, psychology, geography, science environment, etc. For example, I recommend that teachers and lecturers teach Gabonese history and geography before teaching French or European history and geography. This means the curriculum must focus first on local knowledge and/or science, which refers to knowledge and/or science from Africa, particularly Gabon.

c. Pedagogy

As it is the case for colonial school curricula, French pedagogical systems also were fashioned from French ideology and conditions, and were implemented for French society needs. French society is a society of written culture and civilization, while Gabonese society was originally based on oral culture. Therefore, the pedagogical system in the academy in Gabon must end perpetuating French colonial ideology, but rather must be adapted to Gabonese cultural norms in terms of transmission of education.

This results necessarily in integrating indigenous teaching and learning methods in the ways of teaching and learning in formal schools, because the ways of transmitting education or instruction must be adapted to the realities of learners. I recommend that IPN experts develop pedagogical systems that combine both indigenous and Western appropriate approaches. I encourage teachers and academics to engage with a process of

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teaching which accentuates Gabonese traditional practices, protocols, and procedures regarding how to educate in native communities.

d. Epistemology

Educational policies that tend to encourage imported or Western pedagogical models pose an epistemological problem in the context of setting up an education system more adapted to local realities. It is important to note that in the process of reconstructing or transforming the education system, it is difficult to distance teaching and learning from the subjects taught and learnt as well as the principles which guide the practice of teaching and learning. Hence, there is also a need for epistemological reforms. For example, I recommend that a history lesson such as World War II be taught as the practice of teaching mythical tales or the migratory movements of tribes. I also propose that teachers' methods for practising science in the classroom or outside of the classroom include traditional environmental laws that are both physical and metaphysical or natural and spiritual. This means integrating the principles that govern the indigenous perception of education or science in general.

e. Ontology

The findings generated by this study indicate that decolonising knowledge and education includes decolonising the ways of being and living. As Rhee (2021) raised the question of individuals' decolonisation, transformation of education in Gabon must start by transformation of the mindsets of actors involved in the development of education in Gabon. Therefore, I recommend the organisation of seminars and workshops on decolonial attitudes and transformative education for the benefit of scholars and academics in Gabon. This will help them to detach from the colonial discourse and behaviour inculcated in their minds through the Westernisation of knowledge and ontology. The purpose here is to create awareness among teachers, lecturers, and academics of indigenous ontology about the need to end the hegemony of France and French in instruction, and consequently lifestyle. In doing so, this can constitute a very advanced decolonial perspective of knowledge and education.

7.4 Verification of the objectives of the study

This research study aimed to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. The research study was also conducted to reach specific objectives. The findings of the study indicated that the main aim of this research, as well as the specific objectives, was attained.

7.4.1 Specific Objective 1: To investigate the use of indigenous knowledge and its associated systems in the process of knowledge transfer in rural communities

This study demonstrated that indigenous knowledge is a set of systems that includes the indigenous process of knowledge transfer. More specifically, the findings of the study reflect engagement with indigenous knowledge and its associated systems (i.e., vernacular languages, traditional customs and rituals, indigenous practices, etc.) within the process of knowledge transfer in rural communities such as Kery and Inguendja. The findings highlighted indigenous cultural identity and philosophy through indigenous teaching and learning methods of knowledge transfer.

7.4.2 Specific Objective 2: To explore outcomes of indigenous teaching and learning methods in the process of producing knowledge and education

The findings of the study also demonstrated that the outcomes of the indigenous teaching and learning methods are in line with the valorisation and promotion of indigenous knowledge. This study described an indigenous pedagogical system that is at the centre of knowledge and education production in rural communities. This system also contributes considerably to the improvement of intellectual skills that can be applicable beyond the frame of rural environment.

7.4.3 Specific Objective 3: To explain indigenous education in Gabon through demonstrating that indigenous knowledge is a source of knowledge

From many schemas and multiple probabilities, this study demonstrated how indigenous methods of knowledge transfer or indigenous models of school contribute significantly to produce knowledge and education in Gabonese society. Thus, it is justifiable that indigenous knowledge is a source of knowledge.

7.4.4 Specific Objective 4: To justify the need for decolonising knowledge and/or education in Gabon

The findings of the study showed that indigenous knowledge refers both to a system and a set of systems. Any indigenous element related or referring to knowledge and skills is indigenous knowledge. The findings exemplified that in rural communities or indigenous societies, everything can refer to indigenous knowledge. It has been demonstrated that any indigenous knowledge is a particular knowledge that answers many of society's needs in various areas. Indigenous knowledge has been emphasised as a solution that allows resolving more globalised issues. Indigenous knowledge is thus neither stagnant nor limited. Indigenous knowledge is always part of a multidisciplinary or plurality context. This brings added value to indigenous education. This has justified the need for decolonising knowledge and/or education in Gabon.

In fact, the situation in Gabon is that knowledge and education (or instruction) are only legitimised in Western modes of thinking and knowing. The validity of research or science relies exclusively on the Western way of doing science. In such a context, the concern of decolonising knowledge and education proposed in this study consisted first of decolonising policies and practices in the field of education. For this reason, decolonisation of knowledge and education in Gabon entailed decolonising the national education policies (including school and higher education policies) and official pedagogical practices. This results in decolonising the entire national educational system. Aspects such as these confirm that I attained the fourth specific objective of this study.

Moreover, the fourth specific objective of this study was reached since the study proposed a decolonial lens which engages with decolonisation referring to de-Westernisation, Africanisation, or indigenisation. This research study emphasised that the model of education must be concomitant with socio-cultural needs and values. It means the curricula taught and learned in academic institutions must reflect the cultural values and worldviews of the concerned peoples or societies. For this reason, the study also insisted on proposing to decolonise knowledge and education in Gabon through decolonising the ways of thinking, doing, knowing, being and living. This perspective allowed me to link the decolonial lens, the need to decolonise in Gabon, and the decolonial theoretical framework approach that supported this study.

7.5 Methodological and theoretical standpoints

The research process conducted aimed at determining the effectiveness of indigenous pedagogical systems related to the process of producing and acquiring knowledge as well as education in rural communities. The choice of focusing on a descriptive case study corresponded satisfactorily with the aim of the study and allowed me to describe, interpret, and determine pertinently the indigenous pedagogies related to the process of transferring knowledge.

This also enabled participants themselves to voice their perceptions of indigenous pedagogies and contributed to the investigation of the appropriate education model related to Gabonese society from which the perspective of decolonising was reinforced or found a specific orientation. The choice of the theoretical orientation indicating the need to decolonise the national education system of Gabon relies on the veracity of the positive impact of indigenous pedagogical practices on the production of knowledge.

Therefore, from the data collected as well as the analysis and discussion presented, it appears that the current study also generated standpoints that I believe could be beneficial beyond the contexts of Gabon's rural areas and education system.

7.6 Personal reflections of the study

Qualitative research is both personal and practical. In other words, a qualitative study involves practical experience. The researcher is encouraged to include his/her own personal perceptions in interpreting data (Strauss & Corbin, 1998:4). Thus, a personal judgement about the practicability of the study is expected. For my part, qualitative research is materially fulfilling. I was engaged with a reality that reflects my real cultural world and identity. I explored wide-ranging modes of thinking and doing which are engaged in indigenous teaching and learning methods of knowledge transfer. This allowed me to experience alternative ways to contribute to improve teaching and learning modules.

In 2016, when I was with my team (RISE project) teaching the inhabitants of Inguendja village how to treat drinking water by using ceramic water filter technology as well as how to clean these filters, I was pleasantly surprised to see them helping me teach them. During this time, they taught us some indigenous teaching and learning methods, that is, they told us to observe how they interpret what we have taught them and that we should evaluate if they have assimilated the lesson or the training. But earlier, they told us to

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not talk or explain a lot while teaching them the process of treating water. Rather, they preferred us to practise more so that they could observe and practise more often to better understand. This allowed me to understand that they had their own way of doing and understanding things. I thus began to question myself about indigenous methods of knowledge transfer.

Today, I have learned from indigenous communities' alternative pedagogical systems to contribute to innovations in the process of knowledge production and knowledge acquisition. Therefore, I hope that I have been for the rural communities of Kery and Inguendja, a 're-activator or engine' and a sufficient guide to resuscitate the pride and desire to implement indigenous training centres engaged in or committed to economic growth and sustainability. I also hope that this study can be considered one of the pilot studies to legitimise the indigenous pedagogical practices which are still marginalised in the education system in Gabon, particularly. This study, I hope, constitutes new insights that allow putting Gabonese cosmology at the centre of education in Gabon, and that this can reinforce the need to decolonise knowledge and education in the Gabonese academic system.

7.7 Limitations of the study

Although I have tried to address adequately the aim and the objectives of my research study, it is important to state that the study cannot be considered fully authoritative or perfect because of its environment and its context, which can also generate specific effects. In light of this statement, I address in the following segments the limitations of this study.

7.7.1 Limitation 1: Impact of the Covid-19 pandemic

I experienced many challenges while conducting this study. The most important practical challenge was the Covid-19 pandemic. Practically, with regard to collecting data, this caused many problems that included travelling from South Africa to Gabon too late, and numerous restrictions on mobility between Gabon's provinces, as well as the curfew in Gabon from 6 pm to 6 am.

7.7.2 Limitation 2: Two villages

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Even if Kery and Inguendja are two villages where several different ethno-linguistic groups live together and thus sufficiently represent Gabonese rural communities, the fact that the study was limited to two villages and consisted of only five trainers and ten trainees is a considerable limitation. Based on these two points (two villages and the small number of participants), the findings of this study may not be adequate to mirror the real number and characteristics of indigenous teaching and learning methods in many other villages or with many other participants.

7.7.3 Limitation 3: Financial resources

I made huge sacrifices to fund this research study. Owing to persistent foreign exchange restrictions that are in effect in South Africa, I was not able to use the little funding I had saved for my research data collection. Therefore, I had to find employment to fund my research, while the Covid-19 pandemic made the situation even more difficult. I spent the first three months in Gabon working as a private driver. Despite the need to extend the number of research sites or villages as well as the research period (five to six months at least), I was unable to do so because of a lack of sufficient research funding. For this reason, part of the data verification (mainly from Inguendja) was done on the phone, despite the difficulty of communication due to the instability of the network.

7.7.4 Limitation 4: Time and information access constraints

As I am not initiated, I was not allowed to attend specific rituals or ceremonies to observe the teaching and learning practices of particular knowledges. I was granted just a little time to observe the preparations or to ask some questions before the presence on the scene of the initiated members. It was the case with data collection related to the initiation method, power transfer method, consecration method, method of communicating with the spirits of nature, as well as the dance method (particularly spiritual dance or dance of the initiated people).

Participants (principally trainers) did not have enough time for me in order to carry out the interviews at home. They had various activities and community duties that occupied their time. To compensate for this, I had to follow them everywhere in their activities when they allowed me. I was with them from Monday to Sunday as much as possible on the farms, while fishing, in the forest, day and night. I had to take some risks.

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Furthermore, I experienced people's reticence. Many people in the villages also believe that a researcher would like to go everywhere, exposing their business, secrets, or weaknesses in terms of respect of state and traditional or ancestral laws. This made some potential participants refuse to be involved actively in the research project, and many others were initially reluctant. In fact, the major reasons were related to their wish to be highly paid, their limited French language skills, and the fear of being forced to speak about sacred or forbidden things. Because of these reasons, I conducted the individual and group interviews in both vernacular languages and in French. However, I also faced scenes of jealousy during the phase of selecting the participants for this research study. Some complained, 'Why do I choose others and not them?'

7.7.5 Limitation 5: Data to assess how trainees experience both indigenous school and Western school

I planned to attend some classrooms in middle and high school. My objective was twofold. First, to observe how the participants to the research study (trainees) interact in classrooms. Second, to have an idea of the contents of their courses at school to compare with their daily activities in the village. I could not get permission to attend the classrooms. The principal would agree to my accessing classrooms, but this was not formally given. The principal was always absent when I came to meet him, even though we had an arranged meeting. Therefore, I only collected such data in a primary school in Kery.

7.7.6 Limitation 6: Interview reporting

This study had 15 participants who were all interviewed. For this reason, each question asked should have 15 answers. But not all responses were reported in the data presentation for two main reasons. The first is that some participants did not answer all the questions or the answers that were given were irrelevant. The second reason is that the answers were almost identical. I therefore reported the majority of those identical responses that included more information.

7.7.7 Limitation 6: Methodological limitations

In this study, the methodology that participants employed to give me specific

http://etd.uwc.ac.za/

information that I collected is limited. This is because they cannot account for all the characteristics of indigenous teaching and learning methods due to some traditional laws related to the interdiction of revealing specific information to non-initiated people. Hence, the techniques used in this study might not be able to provide an authoritative or complete number of indigenous teaching and learning methods of knowledge transfer and their full description.

However, despite these limitations, I believe my study confers credibility to the data collected and its findings.

7.8 Recommendations for future research

As stated earlier, the findings of this study are neither conclusive nor definitive. My study has merely touched the surface in the discussion of indigenous knowledge in teaching and learning in general, as well as in the conversation of decolonising education through decolonising pedagogy. It may contribute to developing pedagogical strategies to enhance the practice of producing knowledge and education in the local academic environment. In Gabon's academic institutions and beyond, this could be advantageous for students who often wish that their learning methods be inseparable from their personalities and realities. For this reason, most of the time teachers adapt their teaching styles to students' learning styles in order to have a positive impact on their students' performance (Hawkar Akram Awla, 2014:241).

My study revealed that there are significant alternative pedagogies, sources of knowledge, and modes of thinking education science. In this regard, my study proposes a combined indigenous and Western pedagogical system as a solution to quality teaching and learning in academia in Gabon, particularly in rural formal schools. Thus, my study suggests that a decolonial pedagogical system is a system that integrates indigenous and Western pedagogies. However, extending this research study to more participants, sites, and other cases study research designs should help to pertinently explore the subject and to provide more outcomes and understanding.

In light of the above, the following recommendations for future research should be considered:

(1) Gabon is a country composed of many ethnic and linguistic groups that are distinguished by specific cultural characteristics. This is the case in the Fang ethnic group whose filiation system is patriarchal, as opposed to that of the Gisir

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community in Kery, which is matriarchal. If education is contextual and cultural (Le Grange, 2007), it is important to investigate this. Therefore, future research needs to be conducted in other Gabon rural communities inhabited by different ethnic and linguistic communities in order to discover other indigenous teaching and learning methods. This would give us a larger database of indigenous pedagogies.

(2) Similar further research with a large number of participants and mixed methodology (qualitative and quantitative) should be conducted in order to obtain respectively more individual experiences and information as well as statistical data, which should help to determine the regularity or frequency of the use of indigenous pedagogies in both indigenous and formal schools.

(3) The participants-learners of this study are from formal schools (secondary school and university) and are part of indigenous forms of schools. Also, the participants-trainers are all indigenous teachers in indigenous forms of schools exclusively. For this reason, future research should be undertaken among primary school pupils (Grade 1 to Grade 5), so that we can evaluate the effectiveness of indigenous pedagogies in younger learners. This would help to determine the similarities and differences between the way parents teach their children or the way children learn from their parents (indigenous traditional home education) and the methods used within indigenous forms of schools such as Bwiti, Mwiri, traditional medicine centre, etc. Additionally, this would help us to determine and understand how indigenous pedagogies are applied in younger children.

(4) A further study should be undertaken with only participants-trainers who are both qualified teachers working for the government in rural formal schools and indigenous teachers at Bwiti school, for example. This would help us to investigate and to understand significantly the construction and application of a mixed pedagogical system (indigenous and Western) in the two forms of classrooms (formal school and Bwiti school). ⌷

(5) Further study also should be concerned with proposing elaborate strategies and/or designs to put in place an indigenous scientific research community located in rural areas with the involvement of indigenous knowledge holders and academics as researchers.

(6) Future research should also be undertaken to devise indigenous curricula for ENI and ENS student teachers training programmes.

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7.9 Conclusion

I wish to declare that indigenous knowledge is at the centre of this study, which concerns education through teaching and learning in Gabon. Considering its importance, it has been viewed as fundamental to integrate indigenous knowledge into the education system. This has necessitated decolonising education in Gabon, because the issue of integrating indigenous knowledge into the Western model of education is linked to decolonising this model of school. Therefore, in this study, indigenous knowledge systems (1), teaching and learning methods implicated in the indigenous process of transferring education or instruction (2), as well as the concept of decolonisation (3) are the main points or questions investigated and discussed. In this sense, this study can refer to an appraisal of the role of indigenous knowledge in education science and its integration into the national education system through a process of decolonising the source of knowledge and instruction. In simple words, the main concern of this study is the value of indigenous knowledge in education science and its claim for use in academia of a blended pedagogical system shaped by both indigenous and Western teaching and learning systems.

This chapter presented the conclusion to the study. The conclusion starts with a reappraisal and an overview of the study. This part of the conclusion deals with a summation of the main points examined in the study. It concludes that this study demonstrated the connection between the research questions, the findings, the literature review, and the theoretical framework. Additionally, the conclusion evokes the outcomes of the research questions and exposes as well through a series of recommendations the scientific contribution of this research study.

The recommendations from the study I formulated are based on the findings, showing harmony between the role of indigenous knowledge in the process of producing knowledge and decolonisation of knowledge and/or education. These recommendations suggest the valorisation of indigenous knowledge and an indigenous model of schooling. The recommendations also reflect the application of blended Western and indigenous pedagogies for quality education in formal schools. In addition, these recommendations suggest a decolonial discourse and practice of knowledge and/or education production which reflect alternative modes of thinking and knowing that may contribute pertinently to development of the education sector particularly, and to self-control and self-determination in Gabon in general. In this sense, the recommendations include research

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on Gabonese cosmology and the expansion of its value.

In fact, persisting with the education system inherited from French colonisation contributes to the domination and neo-colonial attitudes of France over Gabon (Markovits et al., 2021; Kohnert, 2022). The maintenance of a colonial education system is in total discordance with the sovereignty of Gabon. The recommendations of this study address decolonial strategies and policies in the education sector to delink from French hegemony.

Furthermore, the conclusion reveals that the objectives of the study have all been reached. The conclusion also presents the outlines of the theoretical and methodological aspects or characteristics which have supported this study as well as my personal reflections on the study. These reflections or considerations rely on the methodological orientation of this research as well as its advantages. These reflections also point to the social and educational impacts of this research study.

The conclusion ends with the formulation of a few recommendations for future research.

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APPENDIX 1: Information Sheet (Head of Kery Village)

<div align="right">

Department of Language Education
Faculty of Education
University of the Western Cape
Bellville

</div>

Dear Sir

Permission to conduct a research project in the village of Kery

I am a doctoral candidate in the Faculty of Education at the University of the Western Cape, South Africa. My research project aims to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. The project will take place in Kery village in the province of Moyen-Ogooué, district of Ogooué and Lakes.
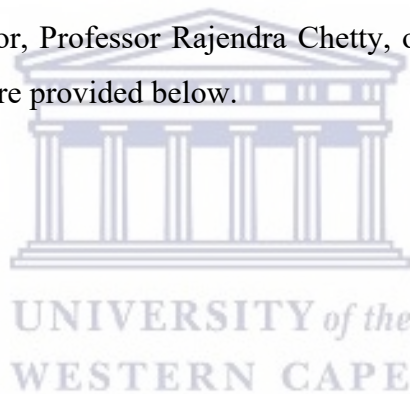
The research project involves the participation of five trainers and ten adult trainees (over 18 years old). The participants will be observed on how they engage with teaching and learning of indigenous knowledge. Each participant will be interviewed and all participants will be invited to a focus-group discussion. The interviews will be audio recorded and the observation of the lessons will be video recorded. Therefore, I hereby request your authorisation to conduct this research in your village. Please be assured that this research project will not interfere with the optimal functioning of the village.

The participants (five trainers and ten trainees) will each receive an information sheet outlining the nature of the study and the data-collection plan. Participation in the research project is voluntary. They will each sign a consent form. All information provided by the participants will be strictly confidential and no names will be revealed in the written research report, i.e., the anonymity of all participants is guaranteed through the procedure of codification of names and places of residence. Participants will

not be exposed to any risk. They will be informed that they may, at any time, without any consequences, withdraw from participating in the study. All information provided will be used solely for research purposes and participants will not be disadvantaged in any way. Videos of participants' faces are not fundamental to this research project. The taking of videos of people's faces, objects and places that makes it possible to identify them will be avoided as far as possible. The use of the video and audio recorders will be discussed and permission will also be obtained for the use of these recording instruments.

It is my sincere wish that this study will enhance the understanding of and positively contribute to the valorisation of indigenous knowledge and education in Gabon.

Should you have any questions about the research study, please do not hesitate to contact me or my supervisor, Professor Rajendra Chetty, or the UWC Research Ethics Office. All contact details are provided below.

Sincere thanks

_____

F S Binze Bi Kumbe
Researcher

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APPENDIX 2: Information Sheet (Head of Inguendja Village)

<div align="right">

Department of Language Education
Faculty of Education
University of the Western Cape
Bellville

</div>

Dear Sir

Permission to conduct a research project in the village of Inguendja

I am a doctoral candidate in the Faculty of Education at the University of the Western Cape, South Africa. My research project aims to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. The project will take place in Inguendja village in the province of Moyen-Ogooué, district of Ogooué and Lakes.

The research project involves the participation of five trainers and ten adult trainees (over 18 years old). The participants will be observed on how they engage with teaching and learning of indigenous knowledge. Each participant will be interviewed and all participants will be invited to a focus-group discussion. The interviews will be audio recorded and the observation of the lessons will be video recorded. Therefore, I hereby request your authorisation to conduct this research in your village. Please be assured that this research project will not interfere with the optimal functioning of the village.

The participants (five trainers and ten trainees) will each receive an information sheet outlining the nature of the study and the data-collection plan. Participation in the research project is voluntary. They will each sign a consent form. All information provided by the participants will be strictly confidential and no names will be revealed in the written research report, i.e., the anonymity of all participants is guaranteed through the procedure of codification of names and places of residence. Participants will not be exposed to any risk. They will be informed that they may, at any time, without

any consequences, withdraw from participating in the study. All information provided will be used solely for research purposes and participants will not be disadvantaged in any way. Videos of participants' faces are not fundamental to this research project. The taking of videos of people's faces, objects and places that makes it possible to identify them will be avoided as far as possible. The use of the video and audio recorders will be discussed and permission will also be obtained for the use of these recording instruments.

It is my sincere wish that this study will enhance the understanding of and positively contribute to the valorisation of indigenous knowledge and education in Gabon.

Should you have any questions about the research study, please do not hesitate to contact me or my supervisor, Professor Rajendra Chetty, or the UWC Research Ethics Office. All contact details are provided below.

Sincere thanks

_____
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Researcher

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APPENDIX 3: Consent Form (Head of Kery Village)

I (full name and surname)……………………………………………………..Head of the Village of Kery hereby confirm that I have been fully informed about the nature and purpose of and procedures for the study titled: *A decolonial study of indigenous teaching and learning methods of knowledge transfer in Gabon's rural communities*.

I have received, read and understood the written information about the research project. I understand that all participants will have anonymity in the final report and information collected will be used only for the purpose of the study. I also understand that participants may withdraw from the research project at any time, without any consequences.

Please put an X in the appropriate column to indicate if you allow/do not allow the following:

	AGREE	DISAGREE
I allow the research to be conducted in my village.		
I allow the participants to be interviewed with an audio recorder.		
I allow the participants to be observed with a video recorder.		

_____   _____

Signature of Head of Village   Date

Sincere thanks

_____
F S Binze Bi Kumbe
Researcher

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APPENDIX 4: Consent Form (Head of Inguendja Village)

I (full name and surname)……………………………………………………..Head of the Village of Inguendja, hereby confirm that I have been fully informed about the nature and purpose of and procedures for the study titled: *A decolonial study of indigenous teaching and learning methods of knowledge transfer in Gabon's rural communities*.

I have received, read and understood the written information about the research project. I understand that all participants will have anonymity in the final report and information collected will be used only for the purpose of the study. I also understand that participants may withdraw from the research project at any time, without any consequences.

Please put an X in the appropriate column to indicate if you allow/do not allow the following:

	AGREE	DISAGREE
I allow the research to be conducted in my village.		
I allow the participants to be interviewed with an audio recorder.		
I allow the participants to be observed with a video recorder.		

_____   _____

Signature of Head of Village   Date

Sincere thanks

_____
F S Binze Bi Kumbe
Researcher

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APPENDIX 5: Information Sheet for Participants (Kery)

<div align="right">

Department of Language Education
Faculty of Education
University of the Western Cape
Bellville

</div>

Dear Participant

Permission to conduct a research project in the village Kery

I am a doctoral candidate in the Faculty of Education at the University of the Western Cape, South Africa. My research project aims to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. The project will take place in Kery in the province of Moyen-Ogooué, district of Ogooué and Lakes.

The research project involves the participation of five trainers and ten adult trainees (over 18 years old). Participants will be observed on how they engage with teaching and learning of indigenous knowledge. You will be interviewed and you will be invited to a focus-group discussion. The interviews will be audio recorded and the observation of the lessons will be video recorded. I hereby request your consent to participate in the research project.

Participation in the research project is voluntary and you will be required to sign a consent form. All information provided by you will be strictly confidential and your name will not be revealed in the written research report, i.e., the anonymity of all participants is guaranteed through the procedure of codification of names and places of residence. Participants will not be exposed to any risk. You may at any time, without any consequences, withdraw from participating in the study. All information provided will be used solely for research purposes and you will not be disadvantaged in any way. Videos of faces are not fundamental to this research project. The taking of videos of people's faces, objects and places that makes it possible to identify them will be avoided

as far as possible. The use of the video and audio recorders will be discussed and permission will also be obtained from you for the use of these recording instruments.

I thank you sincerely for participating in the research project. It is my sincere wish that this study will enhance the understanding of and positively contribute to the valorisation of indigenous knowledge and education in Gabon.

Should you have any questions about the research study, please do not hesitate to contact me or my supervisor, Professor Rajendra Chetty, or the UWC Research Ethics Office. All contact details are provided below.

Sincere thanks

_____

F S Binze Bi Kumbe
Researcher

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APPENDIX 6: Information Sheet for Participants (Inguendja)

<div align="right">

Department of Language Education
Faculty of Education
University of the Western Cape
Bellville

</div>

Dear Participant

Permission to conduct a research project in the village Inguendja

I am a doctoral candidate in the Faculty of Education at the University of the Western Cape, South Africa. My research project aims to determine the effectiveness of indigenous teaching and learning methods in the process of transferring knowledge among Gabon's rural communities. The project will take place in Inguendja in the province of Moyen-Ogooué, district of Ogooué and Lakes.

The research project involves the participation of five trainers and ten adult trainees (over 18 years old). Participants will be observed on how they engage with teaching and learning of indigenous knowledge. You will be interviewed and you will be invited to a focus-group discussion. The interviews will be audio recorded and the observation of the lessons will be video recorded. I hereby request your consent to participate in the research project.

Participation in the research project is voluntary and you will be required to sign a consent form. All information provided by you will be strictly confidential and your name will not be revealed in the written research report, i.e., the anonymity of all participants is guaranteed through the procedure of codification of names and places of residence. Participants will not be exposed to any risk. You may at any time, without any consequences, withdraw from participating in the study. All information provided will be used solely for research purposes and you will not be disadvantaged in any way. Videos of faces are not fundamental to this research project. The taking of videos of people's faces, objects and places that makes it possible to identify them will be avoided

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I thank you sincerely for participating in the research project. It is my sincere wish that this study will enhance the understanding of and positively contribute to the valorisation of indigenous knowledge and education in Gabon.

Should you have any questions about the research study, please do not hesitate to contact me or my supervisor, Professor Rajendra Chetty, or the UWC Research Ethics Office. All contact details are provided below.

Sincere thanks

_____

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Researcher

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Prof R Chetty
Supervisor
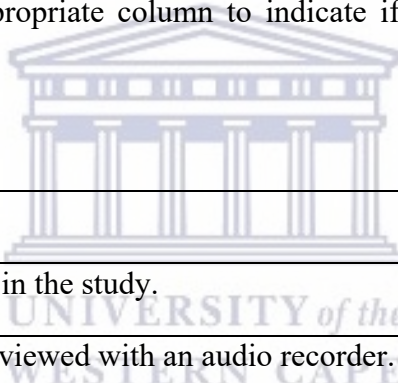+27 21 959 2449 (South Africa)
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APPENDIX 7: Consent Form (Participants)

I (full name and surname)…………………………………………………..
hereby confirm that I have been fully informed about the nature and purpose of and
procedures for the study titled: ***A decolonial study of indigenous teaching and learning
methods of knowledge transfer in Gabon's rural communities***.

I have received, read and understood the written information about the research project.
I understand that I will be anonymous in the final report and information collected is
confidential and will be used only for the purpose of the study. I also understand that I
may withdraw from the research project at any time, without any consequences.

Please put an X in the appropriate column to indicate if you allow/do not allow the
following:

	AGREE	DISAGREE
I give consent to participate in the study.		
I give permission to be interviewed with an audio recorder.		
I give permission to be observed with a video recorder.		
I give permission for the video recording to be used for research purposes only.		
The researcher has explained to me that the video recording is for research purposes only.		
I would like to participate in the focus-group discussion.		

_____   _____

Signature of Participant   Date

Sincere thanks

F S Binze Bi Kumbe
Researcher
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APPENDIX 8: Focus Group Confidentiality Form (Participants)

<div align="right">

Department of Language Education
Faculty of Education
University of the Western Cape
Bellville

</div>

Dear Participant

Thank you for agreeing to participate in a focus-group discussion as part of my research study titled, ***A decolonial study of indigenous teaching and learning methods of knowledge transfer in Gabon's rural communities***.

On the day of the focus group, all 15 participants in this research study will engage in a discussion on indigenous ways of teaching and learning. I will facilitate the focus-group discussion. The questions will be given to you a few days before the discussion.

The purpose of the focus-group discussion is to explore through information shared at a group level the nature of the indigenous process of transferring knowledge and what participants think about this process with regard to education.

Please note that there are no right or wrong answers to focus-group questions. I want to hear your viewpoints and would like everyone to contribute their thoughts and experiences.

You are asked to please be respectful towards other group members by not interrupting while they are talking. You must feel free to be honest even when your responses are different from those of the other group members.

The focus group will be audio recorded and I will make written notes. The identities and responses of all the participants will remain confidential, and no names will be included in the final report.

For any questions about the research study, please do not hesitate to contact the researcher, or the supervisor, Professor Rajendra Chetty, or the UWC Research Ethics Office. Contact details are the following.

Sincere thanks

_____

F S Binze Bi Kumbe
Researcher

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APPENDIX 9: Consent Form for Focus-Group Discussion (Participants)

I (full name and surname)…………………………………………………………..
hereby confirm that I have been fully informed about the nature and purpose of and
procedures for the focus-group discussion related to the study titled: *A decolonial study
of indigenous teaching and learning methods of knowledge transfer in Gabon's rural
communities*.

I have received, read and understood the written information about the research project.
I understand that I will be anonymous in the final report and information collected is
confidential and will be used only for the purpose of the study. I also understand that I
may withdraw from the research project at any time, without any consequences.
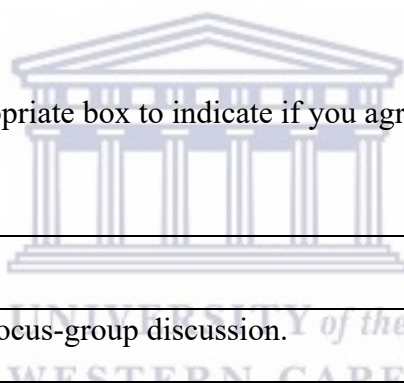
Please put an X in the appropriate box to indicate if you agree/disagree to the following:

	Agree	Disagree
I wish to participate in the focus-group discussion.		
The aims and procedure of the focus-group discussion have been explained to me.	Agree	Disagree
I understand that I can withdraw from the focus-group discussion at any time without being judged or disadvantaged.	Agree	Disagree
I understand that my identity and responses will not be disclosed by the other research participants.	Agree	Disagree
I also hereby undertake to not disclose the identities of the other research participants and their responses to anyone outside the focus group.	Agree	Disagree

_____   _____

Signature of Participant   Date

Sincere thanks

_____
F S Binze Bi Kumbe
Researcher

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APPENDIX 10: Participant Familiarisation Workshop

Workshop to Familiarise Participants with the Aspects of the Research Project Including the Use of Video Recording

<u>INTRODUCTION TO WORKSHOP</u>

Participants will be briefed on the following general guidelines before starting the workshop on ethics:

1.   Explaining the objectives of the research project and why videos are needed in this research.

2.   Explaining what will be included in the videos.

3.   Explaining how participant's confidentiality will be protected.

4.   Ensuring any concerned persons may withdraw from the research project at any time without any consequences, and encouraging them to contact the researcher (or the supervisor or university ethics committee) for further information or to voice any concerns.

<u>ETHICS WORKSHOP</u>

Participants will be informed about and discuss the issue of ethics, using examples of photos from newspapers and magazines, and videos (on traditional culture) from Gabon Television. The following questions and points will be considered:

1.   What are ethics?
2.   Why is it important to consider ethics when taking videos?
3.   What will the researcher do to ensure anonymity in the video?

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4. What are some risks of taking videos and how will the researcher prevent them?

5. Videos of people's faces are not fundamental to this research project. The taking of videos of people's faces, objects and places that makes it possible to identify them should be avoided as far as possible.

6. Videos of any potentially problematic and inappropriate situations will be avoided.

7. What are some rules we can agree to follow for our project?

8. What are the benefits of discussing/reflecting on ethics for our research project?

Preparation of Individual Semi-structured Interviews for Indigenous Trainees

1   How long have you been learning indigenous knowledge?

2   Name the indigenous learning methods you are aware of?

3   How and where do you have access to indigenous education?

4   Can anyone learn from indigenous knowledge and access indigenous education or only particular trainees? Are prior knowledge, skills, training and experience required before attending indigenous school?

5   Do you belong to an indigenous school or indigenous training centre? If yes, which one?

6   What kind of specific knowledge do you think the trainers must have to transfer to you? What should they do to make sure that they teach it properly?

7   Is there a specific place and time for learning? If yes, what is the specific place and time?

8   Can you give specific examples of how you experience, through indigenous education, everyday life in the village and beyond?

9   What type of materials are you using to acquire knowledge? Are you providing it yourself or does the trainer provide it for you?

10 Is there a difference between the indigenous ways of learning and the ways of

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learning lessons of science, for example, at formal school? If yes, can you explain the difference?

11 How do you perceive the importance of indigenous methods of knowledge transfer with regard to education?

12 How did you experience the two forms of school: indigenous school and formal school? What do you think about the ways of learning at formal school compared with learning in the village?

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Preparation of Individual Semi-structured Interviews for Indigenous Trainers

1   How long have you been teaching indigenous knowledge?

2   How and where did you acquire the knowledge you are able to transfer today?

3   What different indigenous methods of knowledge transfer are you familiar with?

4   Can anyone teach the indigenous methods of knowledge transfer or only special trainers? What knowledge, skills, training and experience should a trainer have?

5   Is there a specific place and time for teaching those indigenous methods? If yes, what is the specific place and time?

6   What type of teaching and learning materials do you use to transfer knowledge? Do you provide it or do the learners bring their own materials?

7   Is there a difference between the indigenous methods of knowledge transfer you use and those used in a formal school context (to teach science lessons, for example)? If yes, please explain the difference.

8   What is your opinion on the fact that your indigenous students, particularly those who go to formal school, have access to two forms of processes of acquiring knowledge or education?

9   What do you think about the comparison between the indigenous teaching and learning methods of knowledge transfer and the Western methods used in formal school?

10 Can you give specific examples of how indigenous education prepares young people to face everyday life in the village and beyond?

11 Do you believe that the indigenous education you give to young people is limited to rural areas? Do you think that in urban areas like Libreville indigenous education would be successful? Explain.

12 What is your opinion about the contribution of indigenous knowledge with regard to education and sustainable development?
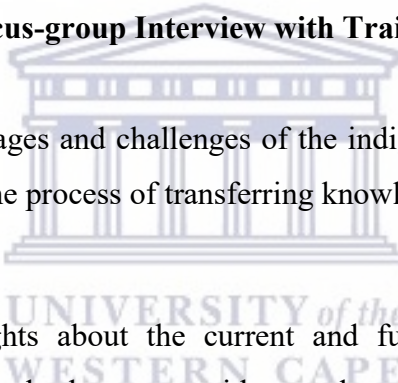
APPENDIX 13: Focus-Group Discussion Schedules

Focus-group Interview with Trainees

1   Discuss and describe the nature and functions of the indigenous methods of the knowledge acquisition process.

2   Explain your thoughts about the current and future position of indigenous knowledge in rural and urban areas with regard to education and development in the country.

Focus-group Interview with Trainers

1   Describe the advantages and challenges of the indigenous teaching and learning methods related to the process of transferring knowledge.

2   Explain your thoughts about the current and future position of indigenous knowledge in rural and urban areas with regard to education and development in the country.

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APPENDIX 14: Declaration of editing

ELIZABETH S VAN ASWEGEN
BA (Bibl), BA Hons (English language & literature), MA (English), DLitt (English), FSAILIS

Language editing | bibliographic citation

DECLARATION OF EDITING

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lizvanas@mweb.co.za

The PhD thesis by candidate **Franck Sandry Binze Bi Kumbe**, titled *A Decolonial Study of Indigenous Teaching and Learning Methods of Knowledge Transfer in Gabon's Rural Communities* for submission to the University of the Western Cape, has been edited. The references have been checked for correctness and conformance with Harvard bibliographic referencing style requirements. All items in the references have been checked against the text, and all in-text citations have been checked against the reference list. The candidate has been advised to make the recommended changes.

Dr ES van Aswegen
8 October 2022