

## TOWARDS A CARTOGRAPHY OF INDIGENOUS KNOWLEDGE SYSTEMS IN LIBRARY AND INFORMATION SCIENCE TRAINING AND EDUCATION IN ANGLOPHONE EASTERN AND SOUTHERN AFRICA

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*“Education, therefore, must begin with a psychological insight into the child’s capabilities, interests, and habits” (Dewey, 2004).*

### ABSTRACT

*The focus of this article is on mapping the inclusion of indigenous knowledge systems (IKS) content in the higher education curriculum of universities that offer library and information science (LIS) education in Anglophone eastern and southern Africa (AESA). As universities in sub-Saharan Africa (SSA) are being encouraged to “adapt” and to become more “societally relevant” in their production, transmission and acquisition of knowledge, they should include hitherto subjugated IKS. The main argument is that the inclusion of indigenous knowledge (IK), with its emphasis on context and the holistic nature of human experiences, in higher education may partly offer knowledge that resonates with Bernstein’s (2000) horizontal discourses and Dewey’s (2004) notion of education that addresses the disposition of the learner holistically. Although some studies on higher education curricula have focused on a diversity of issues, including improved pedagogy, assessment strategies, low achievement, student throughput, content, institutional autonomy and public accountability (Bester, 2011), the scope of this article is limited to the content aspect of the curriculum. Content is at the centre of the relevance of a curriculum in a specific context. A meaningful coverage of IK content in the curriculum may equip information and heritage management professionals with skills and knowledge to preserve the declining IK and elevate it to a respectable level in Africa. The results of this quantitative study confirm that the end of foreign domination in AESA did not bring about a new cartography in the LIS curricula of the universities, as colonial pedagogic practices that undervalued IK have continued to dominate the higher education landscape at the expense of the inclusion of IK.*

**Keywords:** Curriculum, higher education curricula, indigenous knowledge, indigenous knowledge systems, library and information science education, restorative epistemology.

### INTRODUCTION

Higher education in postcolonial and neo-colonial sub-Saharan Africa (SSA) in general, and eastern and southern Africa in particular, is faced with the difficult

tasks of deciding what to teach, selecting knowledge that is worthy of inclusion in higher education programmes and courses, and justifying how knowledge might be constructed, facilitated, mediated and learnt without fostering colonial hegemonic education. It is against this background that higher education institutions in SSA are being urged to transform and contextualise their curriculum to suit the African context. Higher education in SSA has been encouraged to include the African episteme in curricula so that learners may appreciate the contribution of all knowledge systems to the development of society (Higgs, Higgs and Venter, 2003; Roodt, 2004; Van Wyk and Higgs, 2011).

In that respect, the curriculum discourse in higher education should change the dominant Western perception of what counts as knowledge and bring about a university that is based on the universal notion of humanity, a notion which resonates with indigenous knowledge systems (IKS)<sup>1</sup> and their perception of the essence of humanity, *Ubuntu*.<sup>2</sup>

New maps should be drawn to reflect the relationship between higher education and the curriculum in sub-Saharan regions such as Anglophone eastern and southern Africa (AESAs) if indigenous communities are to reclaim their position and have an input into the education system. The tensions and changes in the curriculum as a result of changes in political realities have been conceptualised as the “reterritorialisation of the curriculum field” (Dussel, Tiramonti and Birgin, 2000: 538). These authors further assert that “reterritorialisation implies a site of contestation, change and growth, a challenge to boundaries” (Dussel, Tiramonti and Birgin, 2000: 554).

To speak about cartography, therefore, seems to be a fitting way to understand the restructuring of boundaries and relations in higher education curricula in postcolonial and neo-colonial SSA in the context of library and information science education. Did a new cartography emerge as a result of the end of colonial domination? Has the cartography of the philosophical foundations of the curriculum in SSA changed as a result of the quest for a university that reflects the contours of the society and culture in which it is located? These questions resonate with the reconceptualist approach which informs the theoretical framework of this study, as explained in the section on the review of the body of scholarship.

Using library and information science (LIS) education in AESAs as a case study, the purpose of this quantitative study was to demonstrate the extent to which indigenous knowledge (IK) has been incorporated into the curricula and raised from the level of being regarded as “ignorant, primitive, superstitious, and inferior pseudoscience” (Shizha, 2008: 81) to being an integral part of the curricula in

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1 In this article, IK and IKS are used interchangeably.

2 Originating from the Nguni languages, the term *ubuntu* denotes human relations that value humanness and the good of the community above self-interest, and in which a high premium is attached to helping and respecting others on the basis of trust and honesty.

postcolonial AESA. The focus is on higher education curricula because universities can facilitate the recognition and validation of IK as an educational tool (Dei, 2000). For Mbeki (2005), “higher education has an important role to play in the economic, social, cultural and political renaissance of our continent and in the drive for the development of indigenous knowledge systems (IKS)”. Therefore, universities as producers and generators of knowledge are well positioned to be key role players in the promotion and preservation of IK through research, teaching and documentation (Moahi, 2012: 543). Historically, universities have played a central role in knowledge production; “they have the most privileged places for the advancement of thought and culture” (International Association of Universities, 1977: 8), and they play an important role in “delivering the knowledge requirements for development” (Cloete *et al.*, 2011: 3). It is crucial that their curricula rise above selective traditions that sanctioned “forms of knowledge, interpretations of events, and perspectives or worldviews that are tied to the interests of those with social, economic and cultural power in the wider society” (Beyer, 1994: 4).

LIS was selected because it is concerned mainly with organising, preserving and disseminating information and knowledge resources irrespective of format: this makes LIS programmes the most ideal candidates for the teaching of IK appreciation and preservation. Obviously, LIS professionals should be exposed to IK theories and practices if they are to preserve and organise it for access and posterity and to save it from disappearing. That partly explains why in 1975 the Standing Conference of African Library Schools recommended the indigenisation of the curriculum by offering courses in IKS (Kigongo-Bukenya, 2002). Further, the inclusion of IKS presents a unique opportunity for LIS schools to extend their curricula (Ocholla and Bothma, 2007: 74).

Lastly, the focus was particularly on the content of the curriculum because it is core in preparing LIS professionals for their work when transacting and interacting with society. The content of the curriculum projects what knowledge is considered important and valid. However, curriculum is under-researched in AESA and it is “a neglected terrain in higher education” in SSA (Le Grange, 2012: 89). This statement continues to be valid, as corroborated by Ngulube, Dube and Mhlongo (2013). The limited research that has been undertaken in higher education in Africa has not adequately delved into understanding of the curriculum in AESA as an indigenous text. The only research to have been undertaken in this regard is that of Tumuhairwe (2013), who called for the inclusion of IK in the curricula of LIS schools and went on to conclude that most LIS schools had not integrated IK into their curricula without marshalling empirical evidence to back up the assertion. The same approach was used by Higgs, Higgs and Venter (2003) and Roodt (2004) in the context of the education curricula.

## **THE REVIEW OF THE BODY OF SCHOLARSHIP**

The review of the literature begins with a discussion of the concept of indigenous knowledge, followed by the theoretical framework that informed the study, the challenges facing higher education in the region, and the advantages of a curriculum that is informed by IKS.

### **Concept clarification**

The notion of IK is widely contested. It is necessary to define the concept of IK, as this will facilitate understanding of its multifaceted nature and what should be taken to signify it throughout this article. The conceptualisation of IK varies according to cultural, social, political and ideological inclinations, so its definition is not philosophically or politically neutral. Ngulube and Onyancha (2011) considered various definitions of IK from the literature and concluded that the diverse alternatives that exist give scope for continuously redefinition.

Following Odora Hoppers (2002) and Onwu and Mosimege (2004), we conceptualise IK as tacit know-how that is community based, unique, complex, dynamic, eclectic, non-formal and transmitted from one generation to the next in various contexts (including cultural, ecological, economic, ethical, political, social, spiritual and technological) to support indigenous communities in solving problems and making decisions that are fundamental to their existence, survival and adaptation in their everyday direct interactions and transactions with their natural surroundings, the external world, and other worldviews and value systems in a particular geographical area.

The most significant characteristic of IK is that it adapts and evolves over time through accumulation of individual and community experiences. Therefore, it is not a static and traditional archive, as some people may think. In that regard Goodall (2012: 40) states that it can be “more effectively understood as a process rather than an archive, both before and after colonialism”. Owuor (2007: 23) expresses a similar view when she states that “indigenous knowledge is a process of learning and sharing social life, histories, identities, economic and political practices unique to each cultural group”.

The growing popularity of IK is partly due to the fact that “the high rates of poverty and widening economic divide undermined the belief that modernisation approaches based on scientific knowledge held the future for developmental programmes in the developing world where most indigenous people live” (Ngulube and Onyancha, 2011: 129). Consequently, IK is invoked in the agenda of governments and bilateral and multilateral organisations as a potential source of sustainable development (Goodall, 2012; Nwokeabia, 2004). Organisations such as the New Partnership for Africa’s Development underscore the fact that “it is essential to protect and effectively utilize indigenous knowledge that represents a major dimension of the continent’s culture, and to share this knowledge for the benefit of mankind” (National Commission on Culture, 2008).

### **Theoretical framework**

A theoretical framework is essential in research because it provides a mechanism for selecting and prioritizing variables that are to be investigated (Ngulube, Mathipa and Gumbo, 2015). Many approaches, ranging from the behavioural, managerial, systems, academic and humanistic to the reconceptualist, have been used to engage with the curriculum (Ornstein and Hunkins, 2009), and all have a contribution to make towards understanding the curriculum. This study, however, is informed by the reconceptualist approach. Reconceptualisation

represents a fundamental paradigm shift in suggesting a new curriculum predicated on critical theory (Pinar, 1980). Although the reconceptualist curricularists are not without their critics (Wraga, 1999), the attraction of this theory is that it addresses inequality, discrimination and oppression driven by class, gender and race. The reconceptualists advocate a counterhegemonic and emancipatory curriculum, as their approach is informed mainly by hermeneutics, poststructuralism, feminism, aesthetics, racial theory and politics (Hlebowitsh, 1999: 344).

The reconceptualist lens has helped us to map the inclusion of IKS in the LIS curriculum within the framework of Bernstein's (2000) forms of knowledge, namely vertical discourses and horizontal discourses. Horizontal discourses are context dependent. They are everyday or common sense knowledge that is essential for survival in the real world. Vertical discourses, by contrast, are recontextualised knowledge that is detached from a specific context. The colonial curriculum in universities discriminated against the horizontal discourses of the indigenous communities and emphasised recontextualised knowledge from the West. A combination of the reconceptualist approach and Bernstein's (2000) work in mapping the state of IKS in higher education in AESA Africa is instructive in terms of pedagogic equity, and it locates our research within a restorative epistemology and the broader debate on reclaiming cultural identity.

### **Challenges facing higher education in the region**

The transformation of African universities from colonial ivory towers into instruments of change was the preoccupation of many African academics following the gaining of democratic rule (Ngara, 1995). The new social order ushered in by independence and the democratic order compelled universities in Africa to redefine their roles and mission to produce sustainable university models which were unique and distinctly African in contrast to the Western prototype that most countries inherited from the undemocratic colonial systems. The refigured universities were supposed to play a key role in national development and seek solutions to Africa's problems.

For instance, the Mbabane Programme of Action adopted in 1985 was an attempt by African universities to tackle Africa's problems (which included poverty, inequality, a lack of self-reliance and a shortage of skilled people) by, among other things, pursuing "with more vigour the review of the curricula, course offerings and research emphasis" (Ngara, 1995: 3). It is doubtful whether the review of the curricula has been vigorous enough to change the pedagogic practices that discriminate against indigenous epistemologies, ontologies, axiologies, doxologies and methodologies in favour of Western "scientific" discourses.

Globalisation and internationalisation of higher education are constantly challenging the quest by academics in Africa for models that are unique and relevant to the continent. The backdrop to the problem is that IK was too local and was not modernised enough to have global relevance (Dube, 2012). There is scope for combining indigenous knowledge with global knowledge, as all knowledge systems are key to the promotion of knowledge-based economies that are defining the information society. The emerging information society and global

economy require interdisciplinary approaches in order to exploit the existing knowledge and achieve a holistic understanding of the world (Cogburn, n.d.).

Harding (1994: 310) points out that it is possible to have distinctive local knowledge blending with global knowledge, as “there would be many culturally distinctive scientific traditions that share some common elements with modern Western science”. That is our basis for making a strong case for the localisation of the curriculum in Africa while responding to global imperatives. There is room to think globally and act locally. This entails tapping into global knowledge discourses in order to inform local knowledge in its quest for local solutions.

In this context, localisation points to having an Afrocentric curriculum that is situated on the African continent. This envisions a curriculum that is responsive to the needs of society and to the utilitarian ideal rather than assuming an “ivory tower image” (Donoghue, 2008). In other words, the curriculum should be contextually relevant by “thinking locally and acting globally”. It must be borne in mind that the size and shape of higher education in SSA is defined not by globalisation imperatives, but by local realities. Global demands are not met at the expense of local interest, but instead the local context is used to interface with global academic cultures and practices in the process of knowledge production and dissemination.

A classical illustrative example of thinking locally and acting globally is the Bologna Process. In response to the globalisation and internalisation imperatives, twenty-nine European ministers in charge of higher education met in Bologna in 1999 to promote the European system of higher education worldwide (European Higher Education Area, 2010). This initiative aimed at changing degree structures so that they would become comparable, compatible and coherent. Universities in Africa should start their own version of the Bologna Process, the foundation of which was laid by the Mbabane Programme of Action in 1985. The process may help harmonise and Africanise the curriculum in higher education, factoring in the changing needs of Africa. As in the Bologna Process, the principles of comparability, articulation and mobility would provide a useful framework without relegating IK to a secondary position.

### **Advantages of a curriculum that is informed by indigenous knowledge**

IK is a learner-centred pedagogy that recognises that learning is a permanent and lifelong process that occurs in a variety of contexts. In contrast to theoretical and abstract colonial approaches to knowledge acquisition, IK emphasises the utilitarian use of knowledge and has a practical and skills-based approach. Learning in an African indigenous context is reminiscent of what Michael Gibbons and his colleagues have referred to as Mode 2 knowledge, which is among other things applied, problem-centred, transdisciplinary, heterogeneous, hybrid, demand-driven and entrepreneurial (Gibbons *et al.*, 1994). According to their typology, this is in contrast with Mode 1 knowledge, which colonial university education exemplified (pure, disciplinary, homogeneous, supply-driven, hierarchical and mainly university-based). The learning model in the colonial context was reproductive rather than constructive, and reminiscent of the attributes of what Freire (1972: 46) termed “banking education”.

Knowledge was decontextualised, as it did not reflect the reality of the learners, and the learning process was passive and mechanical. This was a negation of Bernstein's (2000) horizontal discourses, which recognised the context of the learner. In contrast with the progressive approach that resonates with the quotation from Dewey (2004) cited at the beginning of this article, banking education maintained that "the teacher teaches and the students are taught; the teachers know everything and the students know nothing; and the teacher is the subject of the learning process, while the pupils are mere objects" (Freire, 1972: 46). In other words, the teacher deposited the knowledge into the mind of the learner, who received it passively without transforming it, reconstructing it or adding to it. There were no multiple perspectives on knowledge.

Technically and theoretically speaking, it may be argued that colonial education lagged behind education based on indigenous methodologies and values, which were founded on participative learning during which the trainees actively constructed meaning. In contrast, the colonial type of education was a deliberate ploy to produce "civilised," obedient servants of the colonial masters, who were supposed to be exploited without asking any questions, and be very grateful about it. Thus, colonial education,

far from giving people the confidence in their ability and capacities to overcome obstacles or to become masters of the laws governing external nature as human beings, tends to make them feel their inadequacies and their inability to do anything about the conditions of their lives (Ngugi, 1981: 7).

In contrast to the abstract and ideological colonial education, the indigenous ways of learning resonated with the "problem-solving" pedagogy of Freire. The elders were facilitators, co-learners and co-constructors of meaning. In other words, learning was based on the philosophy of constructivism as espoused by Lev Vygotsky (1978). Constructivists acknowledge that learning is a mentally active process that depends on the personal interpretation of knowledge and experiences that are mediated by culture and social context. A curriculum that is based on an indigenous theoretical foundation is likely to be learner-centred and responsive to problems faced by societies in AESA. In fact, the "adaptability, vitality and agency of indigenous knowledges open the horizons of human thought, practice, action and possibilities" (Dei, 2008: 6).

## **STATEMENT OF THE PROBLEM**

Philosophical and pedagogic foundations of higher education in Africa are based on the West. IK is generally excluded from the curricula as a result of the Western positivist and rationalist epistemologies. Consequently, LIS schools in Africa produced professionals who were to some extent "aliens or changelings" (Minishi-Majanja, 2012), lacking an understanding of the indigenous context they operated in. After many countries gained independence attempts were made to Africanise and indigenise the curricula to redefine and reconfigure the pedagogic space in order to accommodate indigenous epistemologies along the lines of Western scientific knowledge. There is therefore a need to find out the extent to

which higher education institutions in SSA in general and AESA in particular have become inclusive in their approach to the curriculum since various countries were freed from foreign domination.

- What is the placement of LIS schools in the academic programme?
- What is the understanding of LIS schools about IKS?
- To what extent do the LIS schools relate IKS to the LIS curriculum?
- What is the depth of coverage of IKS in the LIS curriculum?
- To what extent is it possible to outline a single university-wide course of education for IKS?

## **METHODOLOGY**

A positivist paradigm informed by the quantitative survey method guided this research. A pretested questionnaire with items measured on a 5-point Likert scale was administered to 25 respondents identified from websites of universities in Botswana, Kenya, Malawi, Namibia, South Africa, Sudan, Tanzania, Uganda, Zambia and Zimbabwe. Although Lesotho, Southern Sudan, Swaziland and Zanzibar are part of eastern and southern Africa, they were not included in the study because their university websites did not indicate that they offered any LIS education programmes. The respondents were leaders of the LIS schools, variously known as directors, deans, chairpersons, heads and programme coordinators, depending on the context. The Likert scale measurement was deemed appropriate because it allowed the researchers to create composite measures using multiple indicators as suggested by Babbie, Halley and Zaino (2003: 22). Using multiple indicators enhances the validity and reliability of the instruments used in research (Bertram, 2007).

Triangulation of data collection methods to enhance the validity of the results was not possible as in the study of Muma (2013) on IK and the curriculum owing to the geographical spread of the population and the associated prohibitive costs. However, Mabota, Ngulube and Wutete (2013) successfully collected data for their study on the IKS curriculum in the Southern African Development Community (SADC) using one data collection method.

The response rate was good, with 21 responses being received out of 25. To ensure confidentiality and integrity of participation, the questionnaire was coded so that only the researchers were able to identify the respondents and the institution to which they were affiliated, and data was aggregated and incorporated into the narrative analysis portion of the research.

## **PRESENTATION AND DISCUSSION OF THE RESULTS**

The placement of LIS programmes in the university may have a bearing on the inclusion of IK in the curricula. Its placement may in turn depend on how the structure of knowledge within the university is conceptualised. The assumption is

that faculties that offer “soft” disciplines (e.g. arts and humanities) are more likely to accommodate IKS, with its liberal way of viewing knowledge, than faculties that offer “hard” disciplines (e.g. natural sciences), which are believed to be influenced by the traditions of Western scientific knowledge. The findings show that the majority of LIS programmes were in the humanities and social sciences, while others were scattered across the disciplines, as illustrated in Table 1.

**Table 1:** The situation of LIS programmes in the university.

Situation of Programme	Frequency
Humanities and Social Sciences	11
Information and Communication Studies	4
Information Sciences	1
Education	4
Information Technology	2
Computer Science	1
<b>Total</b>	<b>21</b>

Perhaps this shows the interdisciplinary nature of IKS, which is often ignored by many scholars in Africa as a consequence of their colonial hangover and exposure to Western epistemologies. The results confirm the assertion by Moahi (2012) that IK may be taught across disciplines, but the arts, humanities and social sciences are the ones that are mainly interested in offering IK modules and courses.

### UNDERSTANDING ABOUT IKS

Seven possible ways in which people understand IKS that were gleaned from the literature formed part of the Likert items. The respondents were asked to indicate how strongly they either disagreed or agreed with the indicator on a scale of 1 to 5 as indicated in Table 2.

**Table 2:** The respondents' understanding of IKS.

Factor	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Mode
	1	2	3	4	5	
1. IKS is spurious knowledge of traditional and static pre-colonial societies	4	8	1	4	4	2
	19.1%	38.1%	4.8%	19.1%	19.1%	
2. IKS is simple and holistic knowledge that includes everyday interactions with the environment by indigenous communities	-	1	-	9	11	5
		4.8%		42.9%	52.4%	
3. IKS is oral traditions	1	5	4	6	5	4
	4.8%		19.1%	28.6%	23.8%	
4. IKS is largely indigenous environmental knowledge	2	4	-	5	10	4
	9.5%	19.1%		23.8%	47.6%	
5. IKS is threatened knowledge of the indigenous communities	1	1	2	3	14	5
	4.8%	4.8%	9.5%	14.3%	66.7%	
6. IKS is dynamic knowledge that results from the integration of traditional and modern practices in a given context	1	1	2	3	14	5
	4.8%	4.8%	9.5%	14.3%	66.7%	
7. IKS is ignorant, primitive, superstitious, and inferior pseudoscience	9	8	2	2	-	1
	42.9%	38.1%	9.5%	9.5%		

The mode represents the most frequent response provided for the statements. The range of the response was 3 to 4, which indicated that there was no significant variability in the responses. Although there is a diversity of opinions on what IKS might mean, the fact that items 2, 5 and 6 have a mode of 5 is revealing. The responses demonstrate that there was reasonable understanding of IKS among the participants. The fact that two respondents stated that IKS was "ignorant, primitive, superstitious, and inferior pseudoscience" is not surprising. Such (mis)perceptions of IK exist in some circles within the academy in AESA. A study by Dube (2012), which investigated the extent to which the LIS department at the University of South Africa (Unisa) had Africanised its curriculum, reveals the perceptions of some academics regarding IK. These included the view that introducing IKS into the curriculum may destabilise the agenda for reconciliation

and unity, prejudice some student groups and limit Unisa's global networks (Dube, 2012).

A perception such as this demonstrates a superficial understanding of IKS and its role in society and the curricula. It is a failure to realise that a number of transferable skills may be acquired from IKS that may be used in a variety of contexts and disciplines. The skills that immediately come to mind are team-building and problem-solving. Indigenous people were compelled to work together in order to survive and sustain their livelihoods. Resilience, creativity and flexibility were necessary for adaptation and existence. It is difficult to imagine how such skills could have a negative impact on any society and its global networks.

Limited understanding of IKS may partly explain why some LIS schools have not yet fully raised IKS to the same level as "trusted" Western knowledge. There is a need for significant changes in thinking and understanding before IKS can be made a significant part of knowledge discourses in some LIS schools in AESA. Such changes in the mindset may facilitate the infusion and integration of IKS into the LIS curricula and its elevation to the centre of knowledge construction and pedagogic practice in LIS schools in AESA.

### THE EXTENT OF THE RELATIONSHIP BETWEEN IKS AND THE LIS CURRICULUM

Respondents were asked to respond to the multiple indicators reflecting the extent to which their schools related IKS to the curriculum on a scale from "strongly disagree" to "strongly agree". Table 3 summarises the results.

**Table 3:** The extent to which LIS schools relate IKS to the LIS curriculum.

Factor	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Mode
	1	2	3	4	5	
1. IKS has long roots in LIS, and it is certainly related to LIS	3	2	1	5	10	5
	14.3%	9.5%	4.8%	23.8%	47.6%	
2. There is a significant overlap between IKS and LIS, and some elements of IKS can be found in our LIS curricula	9	6	2	2	2	1
	42.9%	28.6%	9.5%	9.5%	9.5%	

*continued*

Factor	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Mode
	1	2	3	4	5	
3. The core skills of IKS are relevant and essential to LIS, and hence LIS should respond to IKS immediately	4	9	1	4	3	2
	19.1%	42.9%	4.8%	19.1%	14.3%	
4. IKS appears to bring opportunities for LIS graduates to acquire new skills	10	5	2	3	1	1
	47.6%	23.8%	9.5%	14.3%	4.8%	
6. IKS is a domain that is distinct from LIS; therefore, LIS professionals need to expand their roles, knowledge and skills in order to work in IKS environments	3	3	-	6	9	5
	14.3%	14.3%		28.6%	42.9%	
7. IKS is a cultural concept, and LIS should leave it to the cultural sector	6	9	-	4	2	2
	28.6%	42.9%			9.5%	
8. IKS has no future in LIS, and it will disappear soon	5	9	-	6	1	2
	23.8%	42.9%		28.6%	4.8%	
9. Programme/ Department has not seriously thought of the relationship between IKS and LIS	12	6	-	2	1	1
	57.1%	28.6%		9.5%	4.8%	
10. LIS curricula must change in order to respond to the challenge of IKS	1	3	1	10	6	4
	4.8%	14.3%	4.8%	47.6%	28.6%	

Although many respondents (42.9%) strongly disagreed that there was a significant overlap between IKS and LIS, the fact that items 1, 6 and 10 had a mode between 4 and 5 indicates that a reasonable number perceived a strong relationship between IKS and LIS. That partially explains why 57.1% of the respond-

ents strongly disagreed with the statement that their departments had not seriously thought about the relationship between IKS and LIS. The fact that some respondents stated that LIS should leave IKS to the cultural sector bears out the (mis)perceptions about IKS held by some of the respondents as discussed in the previous section.

The perception of IKS as a cultural concept is not confined to the LIS field. A study by Dziva *et al.* (2012) revealed that science teachers in some secondary schools in Zimbabwe associated IKS with cultural knowledge and were of the view that IK content should not be included in the classroom. Shizha (2008) encountered a similar situation in some primary schools in Zimbabwe.

### **THE DEPTH OF COVERAGE OF IKS IN THE LIS CURRICULUM**

Chisita and Abdullahi (2010) identified the importance of IK in promoting development in Africa and urged LIS educators to include it in the curricula in order to equip LIS students with skills and knowledge to organise and integrate IK and Western knowledge for the benefit of society. Apart from providing learners with requisite skills, the integration of IK into the curriculum is another way of implicitly preserving it. Respondents were asked to indicate, for each item, their responses to the statements pertaining to the depth of coverage of IKS on a scale of 1 to 5. Although the concept of “course” may be understood in a number of ways, depending on context, in the questionnaire it was defined as an assessment component of a degree and also as a module or unit within a qualification, even though these might not be the same thing.

With a total of 21 respondents, the following score values should reveal their perception levels: (1)  $21 \times 5 = 105$  [strongly agree] (2)  $21 \times 3 = 63$  [neither agree nor disagree]. This means the score of any attribute would fall between 21 and 105. If the score happens to be above 63 it shows that the respondent agrees with the attribute, and a score below 63 shows that they disagree, while a score of exactly 63 suggests a neutral attitude. Adding the numbers in round brackets in Table 4 for attributes 3, 6 and 10 gives a score of 94, 91 and 91 respectively. All the other attributes have a score below 63, implying that the coverage of IKS in the curricula is superficial.

**Table 4:** Perceptions of the respondents regarding the depth of coverage of IKS.

Attribute	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Mode
	1	2	3	4	5	
1. There is full IKS qualification in the LIS school	21(21)	-	-	-	-	1
	100%					
2. IKS is covered from undergraduate level	9(9)	10(20)	-	1(4)	1(4)	2
	42.9%	47.6%		4.8%	4.8%	
3. IKS is only covered at postgraduate level	1(1)	1(2)	-	4(16)	15(75)	5
	4.8%	4.8%		19.1%	71.4%	
4. IKS is covered at both undergraduate and postgraduate levels	19(1)	1(2)	-	1(4)	-	1
	90.5%	4.8%		4.8%		
5. IKS is a core module in the LIS curriculum	10(10)	8(16)	1(3)	1(4)	1(5)	1
	47.6%	38.1%	4.8%	4.8%	4.8%	
6. IKS is a topic covered as part of an LIS module	1(1)	1(2)	1(3)	5(20)	13(65)	5
	4.8%	4.8%	4.8%	23.8%	61.9%	
7. IKS is an elective module at postgraduate level	10(10)	8(16)	1(3)	1(4)	1(5)	1
	47.6%	38.1%	4.8%	4.8%	4.8%	
8. IKS is a semester module	11(11)	8(16)	-	1(4)	1(5)	1
	52.4%	38.1%		4.8%	4.8%	
9. IKS is a year module	21(21)	-	-	-	-	1
	100%					
10. There are fewer than five lectures devoted to IKS in the whole qualification	1(1)	1(2)	1(3)	5(20)	13(65)	5
	4.8%	4.8%	4.8%	23.8%	61.9%	

The fact that 61.9% of the respondents strongly agreed with the tenth statement is instructive. While the scope of the coverage of IKS in the curriculum was diverse, the findings suggest that IK was introduced at the postgraduate level

with limited background study from the undergraduate modules, as evidenced by the fact that attribute 2 had a mode of 2.

Scholars such as Mabota, Ngulube and Wutete (2013), Moahi (2012) and Schaffer *et al.* (2004) revealed that the integration of IK into the curriculum at universities in Africa was limited and superficial, making it difficult for IK to play a significant part in pedagogic and development discourses in Africa. The situation does not seem to be peculiar to Africa. Gunstone (2008) revealed that in Australia IK has not been significantly integrated into the curriculum.

### **THE POSSIBILITY OF A UNIVERSITY WIDE IKS CURRICULUM**

A number of disciplines or fields seem to be relevant to IKS education. For instance, IK cuts across many disciplinary boundaries, including medicine, biodiversity conservation, agriculture, architecture, mathematics and governance. It is therefore tempting to consider the possibility of a university-wide IKS curriculum. Although curriculum is a site of serious contestation that is dependent on time, societies and cultures, we believe that there is scope for the inclusion of IKS in higher education curricula across the board, even if it is by nature multifaceted in light of some of the transferable skills embedded in IKS, including resilience, creativity and flexibility.

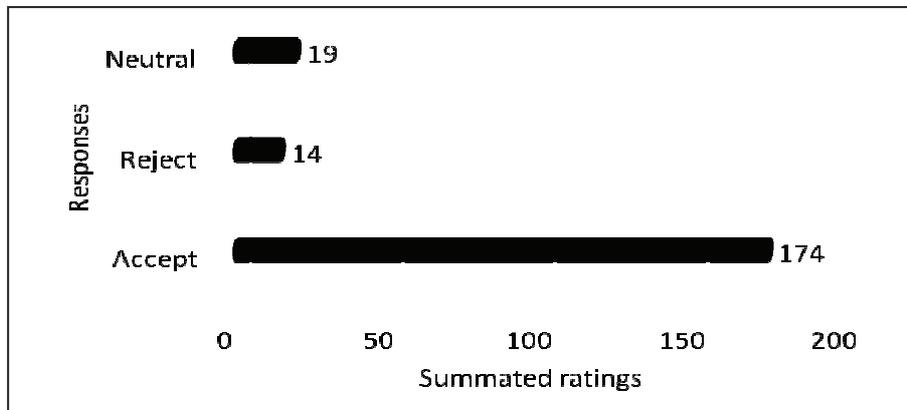
Like knowledge management, information technology and information literacy, IK may be applied in many contexts and across a spectrum of disciplines. For instance, at the University of Pretoria “the course in information literacy is a compulsory credit-bearing semester course offered by the Department of Information Science to all first year students enrolled at the university (more than 6,100)” (Ocholla and Bothma, 2007: 68).

Respondents were asked to indicate their agreement with statements on the possibility of designing a single course or module for IKS in higher education in AESA based on the characteristic of IKS that were listed. The results are presented in Table 5. The mode of all the listed factors was between 4 and 5, indicating that there was general agreement with the statements.

**Table 5:** Perceptions of the respondents on the possibility of having a harmonised university-wide IKS curriculum.

Factor	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Mode
	1	2	3	4	5	
1. IKS is multi-disciplinary and can be applied across all fields	-	-	1	3	17	5
			4.8%	14.3%	81%	
2. IKS is not only relevant to LIS	-	-	1	5	15	5
			4.8%	23.8%	71.4%	
3. IKS applies to all scientific knowledge so it may be integrated across the curriculum	-	-	-	7	14	5
				33.3%	66.7%	
IKS is compatible with other knowledge systems	1	1	-	9	10	5
	4.8%	4.8%		42.9%	47.6%	
4. A common IKS curriculum may produce IKS-literate students	1	1	1	10	8	4
	4.8%	4.8%	4.8%	47.6%	38.1%	
5. IKS must be embedded in the curriculum rather than included as a separate topic	4	5	2	6	4	4
	19.1%	23.8%	9.5%	28.6%	19.1%	
6. Students must complete an IKS module prior to graduation	-	-	2	12	7	4
			9.5%	57.1%	33.3%	
7. Universities should make commitments to teach IKS	-	1	3	12	5	4
		4.8%	14.3%	57.1%	23.8%	
8. A university-wide IKS curriculum is desirable	-	-	3	7	11	4
			14.3%	33.3%	52.4%	

When the Likert scales were reduced from the ordinal level to the nominal level by combining all “agree” and “disagree” responses into two categories of “accept” and “reject”, the resulting picture shows that the level of agreement with the factors was relatively high, as illustrated in Figure 1.



**Figure 1:** Reduced Likert scale arrived at by combining responses.

While acknowledging that IKS is amenable to application across disciplines, the majority of the respondents (19) agreed that students must complete an IKS module prior to graduation. Writing about the Australian context, Gunstone (2008) suggested compulsory implementation of an IK curriculum. In Africa, the introduction of a common compulsory first-year module that promotes indigenous epistemologies has been suggested (Moahi, 2012). The implementation of a university-wide IKS curriculum may also be possible if universities sign a declaration committing themselves to promoting IKS and producing IKS literate graduates in the same fashion that universities in British Columbia and Canada pledged themselves to graduating environmentally literate economics students (Green, 2013).

The common curriculum could be based on the application of IK in different contexts. The focus would not be on transmitting facts and information about IK; rather it would be on engaging learners to think about how indigenous practices play out in a specific social, economic and political context and how IK may stimulate and support mainstream scientific knowledge in the process. The indigenous ways of knowing would engage and connect with Western scientific knowledge in an embracing fashion rather than in an assertive and domineering way. There should be true partnership between the two knowledge systems, and it should not be the partnership of a horse and rider. That way the mistake of the colonial approach that privileged one way of knowing and dichotomised knowledge systems will not be repeated. The need to move beyond such binary antagonisms in a creative manner is nicely explained by Harris (2007: 124):

It is in the both/and, the holding of these apparent opposites in creative tension, that there is liberation. For instance, a liberation for the indigenous in being open to engagement with the dynamic of globalisation. A liberation for the global in respecting the indigenous.

In this context, the liberation lies in recognising the weaknesses and strengths of both knowledge systems and tapping their advantages and the tensions between them to enrich the LIS profession.

### WHAT DOES IT ALL MEAN?

A new cartography has not emerged in LIS education in AESA. IK is still marginalised in the higher education curriculum. The LIS curriculum is still based mainly on Western epistemological foundations that marginalise IK and view the world from one viewpoint. The curriculum should be reconceptualised and reterritorialised in order for IK to have “a place in the sun”. IK should be promoted and affirmed as a pedagogic tool to restore it to its rightful place alongside other knowledge systems and dominant discourses in the corridors of LIS schools in AESA.

A curriculum that is inclusive of IK is likely to address the United Nations Millennium Development Goals as they relate to the promotion of education for all and science for all. The inclusion of IK in the curriculum will bring it to the centre of knowledge construction and afford indigenous learners a space to engage, stimulate, support and explore the boundaries of academic discourse beyond the dominant grammar and text of Western knowledge. Indigenous learners may be exposed to both the Western scientific worldview and the everyday worldviews that recognise horizontal discourses as conceptualised by Bernstein (2000). This may enhance the relevance of LIS education by contextualising it and restoring its role as a valid knowledge system.

The future status of IK and the contribution it will be allowed to make will depend on how it is perceived to address the challenges facing Africa today, namely a high level of unemployment, moral degeneration, poverty, crisis in democracy, and low literacy and numeracy standards. Thus the focus of IK education should not be on its features and theories, but on its potential to address these problems and contribute to sustainable development predicated upon the integration of IK and Western knowledge.

As Kappelar (1986: 212) observed, we “do not really wish to conclude and sum up, rounding off the argument so as to dump it in a nutshell for the reader. A lot more could be said about any of the topics [we] have touched upon ...[we] have meant to ask the questions, to break out of the frame. The point is not a set of answers, but making possible a different [pedagogical] practice” – a pedagogical approach that embraces all knowledge systems that do not reproduce social relations of inequality. It is evident that a process of “stripping bare objective pretences of knowledge” (Giroux, 1983) is required if IKS is to take its place in the LIS curricula in the region.

There is a need for significant curriculum reform in higher education in LIS schools in AESA, as the reality of being inclusive is growing. The boundaries have to be reshaped, as Western philosophical foundations still dominate the curriculum at the expense of IK. Scholars need to “re-open crucial files that were summarily closed somewhere in the chaos and violence of colonialism” so that a science that “tells the story of all animals, and not only the lion” is re-established (Odora Hoppers, 2002: 9). The effective restoration of IKS in curricula may ensure its preservation and enrich current modes of knowledge production.

In this article, we have focused on an individual course or subject in relation to curriculum content. A study that focuses on the students as learners and creative participants in the learning process, which is currently informed by lopsided knowledge claims, may be instructive. Research is required to find out the extent to which the content and teaching produce information professionals with the competencies and skills to appreciate the contribution of IK to development and empowering indigenous epistemologies. Furthermore, the knowledge and experiences of the adopters will be helpful for those LIS schools which have not yet incorporated IKS programmes into their curricula. The implications of the placement of the LIS programme in the university system for the inclusion of IKS in the curriculum is another area in which this study has not reached a conclusion, and which therefore merits further investigation.

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