



# Contextualising the Curriculum through Local Floodplain Artefacts at Lealui Basic School of Western Zambia

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## *Abstract*

*The purpose of this article is to report on a study conducted in Western Zambia which set out to explore how Lealui Basic School could be assisted to provide contextualised environmental and sustainability education through the display of local floodplain artefacts at a school open day. A collection of floodplain artefacts was prepared in readiness for display, and this article reports on how such artefacts can be used in localised curriculum work for teaching and learning purposes. The study used a participatory action approach in which school personnel participated in the collection of artefacts.*

*It was found that connection, quality and relevance could be brought about by developing the capabilities of learners, teachers and community members through the use of floodplain artefacts. School managers could also draw relevance from the artefacts by innovatively working through such artefacts to improve the management of their school institutions. Teachers could work through 'learning as connection' in order to help their learners to make connections between a cross section of situations which are currently disconnected one from the other, such as the knowledge base of children, adults and elderly persons. Such findings can benefit school practitioners, educational administrators or university teacher educators interested in mainstreaming education for sustainable development (ESD) into education.*

## *Introduction*

In the preface to *Guidelines for the Development of the Localised Curriculum in Zambia* (Ministry of Education, 2005), the then Permanent Secretary of the Zambian Ministry of Education stated that the purpose of the Educating Our Future (1996) reforms was 'to use the Ministry's and local resources more efficiently in order to improve access to basic education and fulfill the Ministry's vision to provide *quality* and *relevant* basic education to all Zambian children' (Ministry of Education, 2005:(ii); emphasis added). Since the issuing of this statement, few studies have been conducted in Zambia to determine exactly the way in which local resources existing in a community may be used to contextualise and localise a curriculum. In this regard, this article describes a research study whose curriculum argument was that local artefacts which exist in a community are significant for contextualising the curriculum in a manner that brings about quality and relevance. This curriculum argument for contextualisation is rooted in historical dimensions which, together, influenced the research. These dimensions include the following:

1. The non-use of local resources in the vicinity of Basic Schools, in Zambian education;
2. The relatively low professional status of primary education in Zambia as compared with secondary education; and
3. The non-use of cultural, social and linguistic histories of people in southern Africa for educational purposes.

Such a curriculum thrust would be of interest to educational planners, teacher educators, university academics trying to work with schools and many others interested in environmental and sustainability education issues. The study was constituted as a small qualitative study informed by an emerging theory of 'learning as connection' (see Lotz-Sisitka, this volume).

The research, conducted from November 2009 to February 2011, was part of the Southern African Development Community Regional Environmental Education Programme's (SADC-REEP) research programme consisting of ten participating universities and a college of education in southern Africa. The main focus at a general level among these ten universities was the exploration of quality and relevance in environmental and sustainability education. In particular, the research team's argument was that education for sustainable development (ESD) involves a kind of learning that is meaningful in people's lives. Such a form of learning supports capabilities, actions and agency. As such, it improves the quality and relevance of education and introduces innovation into the education systems of southern Africa. This key argument is evident in the case study reported on in this article.

### *Statement of the Problem and General Orientation of the Study*

Schools such as Lealui Basic School are expected to design localised curricula to implement Zambian government policies on environmental education (EE) and education for sustainable development (ESD). The Zambian National Policy on the Environment, in particular, extols schools such as Lealui Basic School in helping Zambia to realise the policy objective of 'increasing public and political awareness and understanding of the need for environmental protection, sustainable natural resource utilisation, conservation and management as essential partners in development' (Ministry of Tourism, Environment & Natural Resources, 2007:23). To attain this objective, Lealui Basic School is expected, in terms of policy, to produce a learner who is capable of 'participating in the preservation of the ecosystems in one's immediate and distant environments' (Ministry of Education, 1996:5).

A situation where Basic Schools lack knowledge on how to draw up localised curricula using local resources in order to implement such government policies in their local environments, despite well-meant promulgations aimed at 'localizing the curriculum' (Ministry of Education, 2005; 2007), constitutes a problem. This is despite the fact that such schools may have a locally designed, school-based strategic and implementation plan (SIP), such as the one which Lealui Basic School had by virtue of its professional linkage to the Sefula Provincial Environmental Education Centre (SEPEEC). Lack of knowledge on how to design localised curricula could be a problem, because sustainability issues embedded within the local resources of such schools need to be identified, unwound and addressed at a contextual level. This article describes a study

which addressed such a knowledge gap within Lealui Basic School as part of the pilot project.

The aim of the study was to explore how Lealui Basic School could be assisted in offering environmental and sustainability education through the display, at a school open day, of local floodplain artefacts occurring naturally or made by learners, teachers and community members.

The specific objective of the study, as reported on in this article was:

- To explore the type of environmental and sustainability content associated with floodplain artefacts that could be used to build a localised curriculum for teaching and learning purposes.

At the time of writing this article in October 2013, a school open day had also been held in 2011, but the authors of this article did not participate in the event. This article reports on the above objective only; not on the extended programme of learning at the school. Well-conceived school open days can be very effective occasions for contextualising a curriculum, because local communities, in collaboration with schools, can innovatively articulate issues in their surroundings for members of the public. Exactly how this can be done for the purpose of contextualising a curriculum will not be examined here, as this is to be the subject of another article that may potentially expand on this article.

The research was justified for a number of reasons. The Zambian Ministry of Education acknowledges the need to raise the relatively low status of primary education in the country to a level that is comparable with secondary education. In the context of this study, one way of doing this is by finding creative ways of incorporating the rich indigenous knowledge occurring locally into learning and the curriculum in line with the Zambian education directive on localised curricula (Ministry of Education, 2005). The Lozi people of the Barotse floodplain have rich cultural, social, linguistic and historical knowledge which could be incorporated in a localised curriculum. One creative means of incorporating such knowledge is through an open-day initiative and other subsequent activities where artefacts used by local people linked with the floodplain are showcased and used for curriculum purposes.

Additionally, one of the core values of the University of Zambia, where the two researchers come from, is to engage with public institutions (as suggested by Barnett, Clark & Rees, 2001). There is, therefore, a need for active engagement between primary (basic) schools and the University (as suggested by Barth, 1990) in order to work through the central role of teacher education relating to environmental and sustainability education.

This study was framed by four main ideas that are related to one another. Firstly, the study arose from an orientation that perceives context to be a friendly phenomenon full of opportunities. In this regard, Lealui Basic School may likely discover various organisations that might be interested in collaborating with the School in order to promote indigenous knowledge, in the school curriculum, related to floodplain artefacts. Secondly, this research was theoretically guided by the idea of the strengths model described in a United Nations Educational, Scientific and Cultural Organization (UNESCO) document (UNESCO, 2005), implying that each school has areas of potential strength in need of working through. Thirdly, Namafé (1992; 1998) suggested the idea of service knowledge, by means of which university

researchers would create something new to be of direct use and benefit to both respondents (such as the community) and researchers at one and the same time. The ‘new’ thing here is a collection of floodplain artefacts to be exploited for their educational messages using the agency of a school open day and other potential activities. Fourthly, in relation to behavioural- and cognitive-learning theories, this study is located within the theory of situated learning which argues that learning is an enculturation process that affords people the opportunity to thoughtfully make meaning of their environments, to practise in situ the behaviour of members of a culture, and, gradually, to act in accordance with the norms of that culture (Brown, Collins & Duguid, 1989). Critical aspects of the situated-learning model as applied to this particular study are articulation of learning skills, reflection, coaching, and a learner observing members and practitioners of the Lozi culture in their everyday work with floodplain artefacts – in short, a learner observing the ‘community of practice’ consisting of Lozi cultural members. The main focus of this particular article, however, has been to provide articulation that enables tacit knowledge embedded in Lozi cultural objects to be made explicit for teachers. Tables 1, 2 and 3 in this article, as well as Figure 1, all aim to achieve such articulation.

As already noted, this research is serially poised in due course to use the agency of a school open day and other activities to educate people about environmental and sustainability issues. However, it concentrates on the first part of the process, as the embedded and encultured knowledge in artefacts is often missed or taken for granted (O’Donoghue & Neluvhalani, 2002), yet artefacts are critically important for the success of further learning in contextualised curriculum development. O’Donoghue and Neluvhalani (2002:124) report that ‘historical evidence illustrates how insightful knowledge was often overlooked and marginalised in the past’, and they report on the pedagogical potential of artefacts in their research by stating: ‘As knowledge-laden indigenous artefacts were sourced and used and compared with the way we do things today, further action-centred materials and methods developed.’ (O’Donoghue and Neluvhalani, 2002:133).

### *Research Methodology*

The research methodology was influenced by the following considerations:

- To generate data from local resources on how a Basic School may construct a localised curriculum in order to offer environmental and sustainability education to the public using its area of strength – in this case, floodplain artefacts; and
- To strengthen school–community relationships.

The overall design of the study was qualitative in nature and participatory action approaches were employed. The study involved a case study of only one Basic School’s approach to mobilising local artefact knowledge in, and for, environmental and sustainability education. Apart from the involvement of university researchers, the study actively involved school authorities and teachers in locating and acquiring floodplain artefacts. It can, in this regard, be appreciated that the research entailed both a data-collection and data-dissemination process, undertaken at one and the same time.

The population which was studied included learners, teachers and community members of Lealui Basic School in Western Zambia. The following steps were followed in the collection of data:

1. A letter of intent was written to the Provincial Education Officer (Western Zambia) and the District Education Board Secretary (Mongu District) seeking permission to undertake research at Lealui Basic School under the aegis of the SEPEEC. This step addressed ethical procedures to some extent.
2. A personal introductory letter for the two researchers was also secured from the Head of Department of Language and Social Sciences Education (LSSE) at the University of Zambia.
3. School managers at Lealui Basic School (i.e. the head teacher and deputy head teacher) were provided with a small amount of seed money in November 2009 to enable the school to purchase local floodplain artefacts from learners, teachers and community members.
4. An advertisement was placed with a local community radio station to broadcast a message to learners, teachers and community members in the vicinity of Lealui Basic School to submit their floodplain artefacts to the school (surrounding schools also participated in this exercise and the collection of items was therefore not restricted only to Lealui Basic School learners, teachers or community members). The focus was on collecting samples of all the available local Barotse floodplain artefacts as far as was possible.

## *Results*

As stated, the study aimed at assisting Lealui Basic School to offer environmental and sustainability education through the display, at a school open day, of floodplain artefacts occurring locally or made by people, as well as by way of other expanded curriculum activities. Lealui Basic School managed to make a collection of floodplain artefacts (presented in Table 1), despite the fact that some teachers were reported by the school head teacher to have been somewhat reluctant to collect the artefacts for reasons this research did not delve into. Table 1 provides a summarised classification of all of the collected floodplain artefacts by using:

- Categories of basic raw material from which the artefact is made;
- The floodplain artefact itself;
- The genre (major family grouping of the artefact); and
- The vernacular language associated with the artefact.

The collected items in Table 1 form a basis for extracting information to be used in drawing up a skeletal, localised curriculum. Some of the names of items in Table 1 have been presented directly in the indigenous Lozi language as they were received from respondents in the field, because they do not have a direct linguistic or translation equivalent in English. All the artefacts reported here are from the floodplain environment of Western Zambia.

**Table 1.** Local floodplain artefacts collected for educational purposes at Lealui Basic School, Western Zambia

Basic raw material	Floodplain artefact	Genre	Associated language
Papyrus ( <i>ikuma</i> )	<i>Miseme, Lishasha</i>	<i>Liluka, Sikololo</i>	<i>Mitila, Kulitela, Sibikeleli</i>
Reeds ( <i>mataka</i> )	<i>Libinda/mainda/liinda</i> <i>Mashasha/lshasha</i> <i>Mabuko, Lizuma</i>	<i>Lin'gele</i>	Weaving <i>Kupunya, Lutabo, Mihala</i>
<i>Limbinda</i>	<i>Lizuma, Miseme</i>		<i>Kuluka, Mashandi</i>
<i>Matutu</i>	<i>Miseme, Mututo</i>		<i>Kuluka, Kupunya, Mihala</i>
Palm family ( <i>mukuluvani</i> )	<i>Lizuma</i> (baskets) <i>Likuwani</i> (hats), <i>Maselo</i> <i>Lipapau</i> (handbags), <i>Titumbua</i> ( <i>kattumbua</i> , a small woven basket with a lid), Table mats		<i>Mutumba, Mababa, Kuluka, Mitila</i>
Clay ( <i>lizupa</i> )	<i>Lindondo, Lipizana</i> (Niozi), <i>Tumbungele, Ting'angua, Tuhana</i>		<i>Kubupa, Kuluba, Kumambansa</i>
Grass ( <i>bucuvani</i> )	<i>Lukuko, Lufiyelo, Situwa sandu</i>	<i>Nangonya, Katondo, Lufiyelo, Muange, Matangonya, Makelele, Silenge</i>	<i>Kuluka, Kuyaha, Kubasa, Mihala, Mashandi</i>
Water	Animals	Hippo, Crocodile, Water monitor	
Subdivided into:		<i>Ng'ibi, Mbao, Lingongole</i>	
Flood water ( <i>muunda</i> );	Fish	Bubble fish, Red bream, <i>See, Mu, Njinji, Nembwe, Mbaala, Liulungu, Linyonga, Mbana, Nembwe, Njanga</i>	<i>Kiyamba, Kuwaya, Kushuta, Kushuma, Kiyalela, Kulaleka, Kupazula, Kupunya, Sihuapa</i>
Well water ( <i>lisina</i> );		<i>Mulumesi, Ngveshi, Mushuma, Ndikusi, Mutokoya, Mbanda</i>	
Canal water ( <i>liabua</i> );		<i>Simbawe</i> (frog), <i>Kanyukuta</i>	
River water ( <i>nuka</i> ); and	Amphibians	<i>Macikwi Linogolo, Kang'tumbi, Sinolo</i>	
Lake water ( <i>lisa</i> ).	Birds ( <i>linyuyuvani</i> )	<i>Sifuli, Ng'ambuamukule, Linjelele, Maiwiye, Inuyulu, Ling'ungu, Lija, Natwange, Nalukapwa, Mulombwe, Ng'ubang'uba, Simukata</i>	
Also classified into:			
<i>Manelele</i> (small waves);			
<i>Mandinda</i> (big waves);			
<i>Mapaipai</i> ; and			
<i>Silembe</i> .			
Food ( <i>lico</i> )	<i>Mhonyi, Mabele, Mashela, Makuwangala, Maoma, Linjele, Ndongo, Lituu, Manawa, Ngulu, Siboyani</i>		
Trees	<i>Sibumbu, Mukoma, Sitaka</i>		
Insects	<i>Silui, Madohbolwa</i>		

### Interpretation of results

In the first instance, the floodplain artefacts in Table 1 are all water-related and provide the Lozi people living in the locality of such artefacts with certain capabilities in terms of enabling them to choose what type of people they want to be, which, in this case, is to be water people as a matter of cultural identity. Over the centuries, water people have existed in many lands and have been recognised as such by scholars. Choosing to be water people is a capability attribute related to identity creation. Capabilities, as defined by Sen (1999), are ‘valued beings and doings’ or those things or ways of being that people have reason to value. A capabilities lens was found in this study to be a useful construct for conceptualising a contextualised curriculum. Unfortunately, since the 16th and 17th centuries, many water cultures across the world have become extinct as a result of drainage projects designed to create dry agricultural land (Swift, 1983). The Lozi culture is, therefore, fortunate to still be able to maintain water-based lifestyles and artefacts and, by so doing, challenging educationists to plan curricula to sustain such water lifestyles.

The other capability facilitated by the artefacts is the opportunity for Lozi individuals to choose a specific floodplain lifestyle they wish to lead, that is, whether or not they wish to weave reed objects, to fish or to mould clay objects. These dimensions of capability are a springboard for innovation and modernisation among the Lozi community, in that they enable Lozis to engage in trade, with a cross section of the international community, around the artefacts.

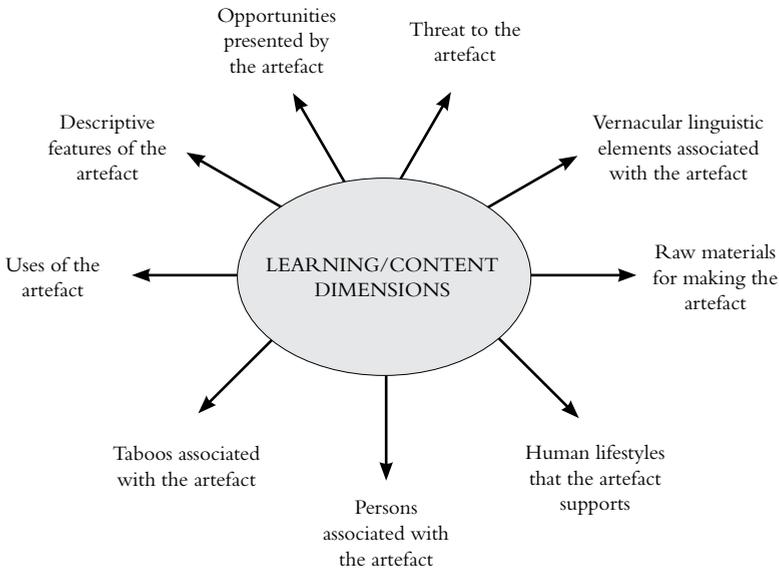
The second reason why the artefacts in Table 1 are of significance relates to their relevance in pedagogy and in curriculum design, that is, to the richness of environmental messages which each artefact radiates for possible classroom use by teachers or learners in an educational setting. For instance, an item such as the *katumbwa*<sup>1</sup> may be educationally studied from the following vantage points:

1. *The vernacular linguistic elements* associated with the process of making it. Some of these elements are faced with extinction owing to various factors and, therefore, there is a need to sustain them educationally.
2. *The raw materials* required as prerequisites or co-requisites when making it. The environmental sources of such raw materials may be threatened in various ways, such as by agriculture, construction or drainage.
3. *The specific human lifestyles* supported or threatened by such an artefact (e.g. the *katumbwa* is normally kept by elderly persons for specific purposes). For such elderly persons, this relates to their capability in respect of privacy (e.g. to live a lifestyle away from the knowledge of young ones).
4. *The specific persons* associated with it, for instance elderly people (when using it), young people (when collecting raw materials to make it), young adults (when making it) or the specific gender roles associated with it.
5. *The taboos* associated with the process of making the artefact. Some of these taboos could be rationally explained, could be scientifically justifiable or could simply be ethical in their nature.
6. *The uses* of the artefact, that is, what the object can be used for (this relates to the capability to do certain things with the objects which may not be done successfully with other objects).

7. *The descriptive features* of the artefact in terms of its shape, colour, size, smoothness, durability, strength, fragility, and so on.

The above features are indicated in Figure 1 for further clarity regarding the parameters which can be the bases for generating content from the artefacts.

**Figure 1.** Teaching–learning/content dimensions of local artefacts



The third aspect of Table 1 challenges us to answer the question: how can the artefacts be handled in a formal school system so that such artefacts assist teachers to make ‘connections’? Learning as connection has teaching implications and such implications can be generated with the aid of a matrix that addresses issues of sustainability. Such a matrix consists of guiding themes of knowledge, issues, skills, values, challenges, opportunities and action points, as shown in Table 2. By employing the illustrative sustainability matrix in Table 2, teachers can make connections using a questioning technique and so help learners to make connections between school knowledge and everyday knowledge, between past, present and future worlds or between different sectors of society (e.g. the needs of the hospitality industry and those of local artefact producers).

Similar challenging questions related to ‘learning as connection’ can be posed with respect to assessment. How can teachers assess the kind of learning taking place with regard to the floodplain artefacts in Table 1? Would this kind of learning improve learner performance in ‘mainstream subjects’ like Civic Education, Home Economics, Biology, and so on? However, as regards the floodplain artefacts and Lozi indigenous ways of making artefacts, there are a lot of Western ways of knowing to be found in mainstream subjects (paraphrased from Lotz-Sisitka, 2011).

**Table 2.** Teaching/learning dimensions on *katumbua*

Outcomes	Natural	Economic	Social	Political
Knowledge	Identification and collection of all varieties of <i>katumbua</i> with a view to describing the natural materials used in making them.	Of what economic use can the <i>katumbua</i> be for various clients?	What stylistic preferences can be identified and sustained by the <i>katumbua</i> among the people?	Why are the local traditional leaders not encouraging the use of the <i>katumbua</i> ?
Issues	How can the natural environments support various types of <i>katumbua</i> so that they are conserved?	Of what potential value is the <i>katumbua</i> to hotels and lodges?	How can the local community and individuals be empowered to produce <i>katumbua</i> ?	Who has the power within the office of the Provincial Education Officer (PEO) to create projects to conserve the <i>katumbua</i> ?
Skills	How will we revive the lost skills of making <i>katumbua</i> in the environment?	What trading skills should teachers and learners acquire in order to sell the <i>katumbua</i> ?	What family skills should be introduced to learners so as to sustain the <i>katumbua</i> ?	What skills are needed when using <i>katumbua</i> in order to avoid conflicts in the home?
Values	How will we revive indigenous traditional objects like <i>katumbua</i> and value them?	If improved, how can <i>katumbua</i> become a source of entrepreneurship in its local areas of production and a means of poverty reduction?	What family values can be used in the functional processing of <i>katumbua</i> ?	What solutions would the availability of <i>katumbua</i> provide?
Challenges	Why are local people disregarding <i>katumbua</i> in preference for exotic handbags?	How would local people know how to innovate <i>katumbua</i> to suit the dictates of time and the needs of society?	How would the local people know how to use <i>katumbua</i> in traditional activities?	Why would the choice of <i>katumbua</i> over exotic handbags by one married partner cause conflicts in the home?
Opportunities	What research projects can be generated to investigate the pool of natural objects that may be exploited in order to improve <i>katumbua</i> ?	What teaching and learning materials can be produced and sold based on <i>katumbua</i> ?	How can skill, knowledge and values regarding <i>katumbua</i> be taught in all school-learning areas? How can a localised curriculum on preserving, marketing and selling <i>katumbua</i> be created?	How could the area Member of Parliament (MP) be enlisted to support the cause of reviving and sustaining the <i>katumbua</i> ?
Action points	How can we investigate different natural environments which support the growth of <i>katumbua</i> and conserve them?	How can we create a comprehensive data bank of all types of <i>katumbua</i> ? Can we invite hotel and lodge managers to an open day to market the <i>katumbua</i> so as to sell it for its cultural value and to make a profit?	How can we contact relevant individuals and organisations within and beyond Zambia that are interested in <i>katumbua</i> (e.g. the SADC Cultural Centre)?	How can we lobby relevant decision-makers to revive the value of the <i>katumbua</i> ? Can we write to the area MP or the <i>Post</i> newspaper?

**Table 3.** Managing a school for innovation by means of local floodplain artefacts

Educational aspects	Organisational aspects
<ul style="list-style-type: none"> <li>• As a group (learners, teachers and community members), the school should complete the sustainability matrix in Table 2, focusing on floodplain artefacts in line with their context.</li> <li>• The school should determine how individual learning areas of the curriculum could be addressed by means of various dimensions of the matrix.</li> <li>• How could learners, teachers and community members be organised so that they research the identified elements of the matrix?</li> <li>• What teaching–learning materials can be created from the matrix elements?</li> <li>• What types of collaborative ventures among learners, teachers and community members could be initiated based on the matrix?</li> <li>• What about collaborative projects (ventures) undertaken together with other schools or offices?</li> <li>• What kind of expertise is needed to tackle aspects of the matrix?</li> <li>• How can elements of the matrix facilitate different types of professional development among environmental–education teachers (i.e. cater for practitioner development, professional development, professional training and professional support)?</li> <li>• How could one use elements of the matrix to address the various needs of the stages of a teaching career (i.e. the needs of a novice teacher, advanced beginner teacher, competent teacher, proficient teacher and expert teacher)?</li> <li>• How could the matrix elements be applied to meet the requirements of the different periods in the career of Basic School teachers (i.e. initial professional development, early professional development and continuing professional development)?</li> </ul>	<ul style="list-style-type: none"> <li>• The school needs to nominate one person (a learner, teacher or community member) to spearhead and coordinate the perfection of the identified strength.</li> <li>• The school needs to market and publicise the strength beyond the school.</li> <li>• The school needs to strategise how to increase the identified strength so that it becomes even stronger than before.</li> <li>• The school should seek out appropriate partners, alliances or networks based on the identified strength.</li> <li>• The school must have special days on which to celebrate the identified strength in the form of a school ceremony or open day.</li> <li>• The school should clarify how to involve learners, teachers and community members as active participants in the identified strength.</li> <li>• The school should maintain an active communication channel between itself and the zonal, district and provincial education offices regarding progress, challenges and problems in respect of operating within the identified strength.</li> <li>• The school needs to arrange visits to and from the school based on the identified strength. Contact with the Barotse royal establishment and other key stakeholders in the community could be made.</li> </ul>

The fourth point to be made is that education for sustainable development (ESD) as embedded in the artefacts of Table 1 involves a kind of learning that is meaningful in people's lives. As such, it improves the quality and relevance of education and introduces innovation into the education systems of southern Africa. This can be illustrated by the work of school managers. From a panoramic perspective of managing a school for the purpose of innovation, school managers could employ the artefacts in Table 1 to implement educational and organisational activities as illustrated in Table 3. The essence of Table 3 is, as we saw in Table 2, to use the agency of the 'strengths model' and apply themes of 'educational aspects' and 'organisational aspects' to it in such a manner that we generate relevant ideas in line with such aspects.

### *Conclusion*

This article has reported on an ongoing study conducted in Western Zambia which set out to explore how Lealui Basic School could be assisted in conducting contextualised environmental and sustainability education by means of a school open day and other curriculum activities. The specific objectives of the part of the study reported on here were, firstly, to explore the type of environmental and sustainability issues associated with floodplain artefacts that could be used for creating a localised curriculum for teaching and learning.

Secondly, the study sought to explore specific activities which the said school could engage in to enable its learners, teachers and community members to educate successfully by way of a school open day and related activities associated with the artefacts. The intention of the research was to explore the potential of the objectives noted above for contextualising and localising the curriculum in a manner that reveals the possibilities whereby 'learning as connection' is achieved, capabilities are recognised, and quality and relevance in education are potentially enhanced. Although the school open day and other activities that took place during course of the study have not been included in the report in this article, the article has shown that the artefacts have considerable potential for mobilising and supporting learning as connection. Through this, issues of quality and relevance are likely to result by developing the capabilities of learners, teachers and community members as explained in this article in relation to the floodplain artefacts in Table 1. Monitoring of this could be the focus of another research paper. School managers could also draw relevance from the artefacts by innovatively working with such artefacts to improve the management of their institutions. As for teachers, they could work through 'learning as connection' in the context of the questioning method in order to help their learners to make connections between a cross section of situations which are currently disconnected one from the other, such as the knowledge base of children, adults and elderly persons.

### *Notes on the Contributors*

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### *References*

- Barnette, R., Clark, P. & Rees, A. (2001). *Engagement as a Core Value for the University: A Consultation Document*. London: The Association of Commonwealth Universities.
- Barth, R.S. (1990). *Improving Schools from Within: Teachers, Parents and Principals Can Make a Difference*. San Francisco: Jossey-Bass Publishers.
- Brown J.S., Collins, A. & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32–42.
- Lotz-Sisitka, H. (2011). *Research Programme and Network Progress Report*. Grahamstown: SADC-REEP Education for Sustainable Development Research Network.
- Ministry of Education. (1996). *Educating Our Future: National Policy on Education*. Lusaka.
- Ministry of Education. (2005). *Guidelines for the Development of the Localised Curriculum in Zambia*. Lusaka: Curriculum Development Centre.
- Ministry of Education. (2007). *Teaching Community Studies*. Lusaka.
- Ministry of Tourism, Environment and Natural Resources. (2007). *National Policy on Environment*. Lusaka.
- Namafe, C.M. (1992). An exercise in environmental education: Investigating, disseminating and evaluating two contrasting floodwater metaphors. Unpublished PhD thesis, Institute of Education, University of London, England.
- Namafe, C.M. (1996). The Research Method Behind a Discovery in Floodwater Studies. In Van Der Zijpp, T., Van Der Schee, J. and Trimp, H. (Eds), *Innovation in Geographical Education*, Proceedings, The Hague, August 4–10, Netherlands: Huidrukkerij Vrije Unviversiteit.
- O'Donoghue, R. & Neluvhalani, E. (2002). Indigenous knowledge and the school curriculum: A review of developing methods and methodological perspectives. In Janse van Rensburg, E., Hatting, J., Lotz-Sisitka, H. & O'Donoghue, R. (Eds), *Environmental education, ethics and action in southern Africa*. Cape Town: HSRC Press.
- Sen, A. (1999). *Development as freedom*. Oxford: Oxford University Press.
- Swift, G. (1983). *Waterland*. London: William Heinemann Limited.

UNESCO (United Nations Educational, Scientific and Cultural Organization). (2005). *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability*. Technical Paper No. 2. UNESCO: Place de Fontenoy

### *Endnotes*

1. A *katumbwa* is a small basket with a lid. The basket is kept by elders to hide some important personal items for them, items which should not be seen by youngsters. It is woven by both men and women.