Exploring Presence of Interactivity in Distance Education Instructional Materials Using the Community of Inquiry Model at Four Universities in Zambia

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Abstract

One of the perennial challenges distance education practitioners face borders on 'how' to foster quality interactivity within the learning instructional materials as a means to effective learning process. Thus, this article explores the presence of interactivity in instructional materials for undergraduate distance education learners from four universities using the Community of Inquiry mode in Zambia. The article rides on a non-obtrusive research approach to interrogate eight peer reviewed modules used by distance education learners for more than two years. Within the continuum of interactivity, the findings show a heavy presence of student-content while student-facilitator and student-student forms of interactions are conspicuously missing. Equally, there is more emphasis on cognitive presence while the social and teacher presences are missing. Such a state of affairs explain why distance education learners appear to be disengaged in the learning process since the instructional materials are not anchored on sound pedagogical distance education principles. This is a precursor to academic failure unknowingly induced by the three universities on unsuspecting learners. The challenge highlighted points to limited quality instructional designers of open and distance education materials in the three universities. To this extent, we recommend a tailor-made capacity building in the pedagogy of open and distance learning particularly the community of inquiry among others for all learning facilitators engaged in distance education.

Key words: *Pedagogy, Interactivity, Distance Education, Community of Inquiry, Zambia*

Background

This study interrogated eight instructional materials for distance education learners at four premier universities namely:, Zambian Open University and the University of Zambia, Copperbelt University and Mulungushi University. The named higher education institutions (HEIs) are based in Zambia. The study applied the community of inquiry model to interrogate presence of interactivity in the available study materials to distance education learners. This was in a quest to strengthen the quality of instructional materials so that learners graduated with the right learning competencies. With the exception of Zambian Open University, which is a privately owned university, the other three, University of Zambia, Copperbelt University are Mulungushi University are state owned. In addition, all the four universities are dual mode (regular study and distance learning modes co-existing while sharing resources within the same university), (Siaciwena, 2006; Simui, Chibale and Namangala, 2017).

Zambia's distance education growth can be traced at the University of Zambia

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which is the founding university from which all the others sprout from (Simui, Mwewa, Chifwepa, Namangala, Mudende and Chishiba, 2015). Currently, distance education appears to be a popular mode of study as nearly all higher education institutions offer their programmes in a dual mode setup of regular and distance learning (Mundende, Simui, Chishiba, Mwewa and Namangala, 2016). Concomitantly, proponents in the sector of distance education have progressed from a preoccupation with organisational and structural challenges to transactional (teaching-learning) concerns (Garrison, 2000). Notwithstanding the above, much of this is still in its infancy in many HEIs. The transformational shift is the upshot of development in communications technology coupled with attention on collaborative-constructivist learning theories (Garrison & Archer, 2000). Whereas distance education has been in existence in Zambia since the early 1960s, stakeholders still question the quality of education offered through the distance learning mode. Interesting enough, one of the pillars of distance education learning anchors on quality instructional materials (Muzata, 2013). The shift from preoccupation with organisational and structural challenges to transactional (teaching-learning) concerns in distance education (Garrison, 2000) has necessitated this study, which aimed at exploring the presence of interactivity in instructional materials for undergraduate distance education learners in four universities using the Community of Inquiry mode in Zambia.

This study's purpose was to explore presence of interactivity in distance education using the Community of Inquiry model at four universities in Zambia. This study contributes to the discourse of enhancing the quality of instructional materials for distance education in HEIs. The following specific research objectives guided this study:

(i) Describe the presence of interactions in instructional materials,
(ii) Identify areas of need for enhancement of quality of instructional materials and recommend possible measures to strengthen the quality of instructional materials.

Theoretical Underpinnings and Literature Review
This study was anchored on the Community of inquiry (CoI) framework advanced by Garrison *et al.* (2000). The COI framework describes critical prerequisite elements for successful educational outcome in higher education. According to Garrison et al., (2000), the COI framework advances that learning is enhanced by developing interaction among three basic elements: cognitive, social and teaching presence as illustrated in Figure 1.
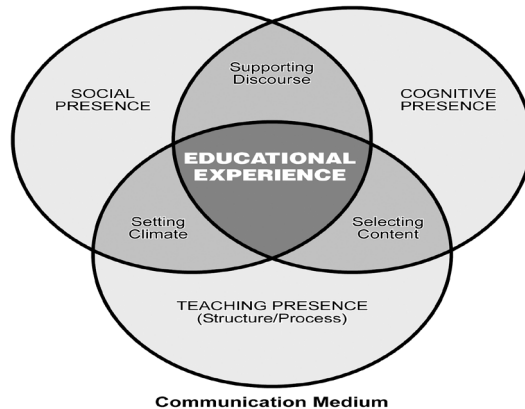
Community of Inquiry

SOCIAL PRESENCE

COGNITIVE PRESENCE

Supporting Discourse

EDUCATIONAL EXPERIENCE

Setting Climate

Selecting Content

TEACHING PRESENCE
(Structure/Process)

Communication Medium

Figure 1: The Community of Inquiry Theoretical Framework. Source: (Garrison et al., 2000).

Social presence, the first element within the community of inquiry model is defined as the ability of learners to project themselves (i.e., their personal characteristics) socially and emotionally, thereby representing themselves as "real" people in a community of inquiry (Rourke, Anderson, Garrison & Archer, 2001). Importance is attached to establishing relationships and building a sense of belonging. Social presence entails creating a climate that supports and encourages probing questions, scepticism, expressing and contributing to ideas.

Cognitive presence is second on the CoI framework. Cognitive presence is defined as the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry (Garrison, Anderson & Archer, 2001). According to Dewey, reflective or critical thinking deepens the meaning of a person's experiences and is, therefore, a core educational aim. Critical thinking both authenticates existing knowledge and generates new knowledge suggesting an intimate connection with education. Critical thinking is paramount to inquiry and viewed as an inclusive process of higher-order reflection and discourse, (Garrison, Anderson & Archer, 2001).

Teaching presence, the third element of the framework, is crucial for realising intended learning outcomes. It is the key element in integrating social and cognitive presence during the inquiry process. Teaching presence is what the learning facilitator does to create a purposeful and productive community of inquiry. Teaching presence includes design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison, & Archer, 2001:5).

A host of related literature on Community of Inquiry exist. Some critical studies that are revisited have attempted to explore presence of interactivity among learners in distance education. Saadatmand *et al*. (2017), examined learners' interaction in an Open Online Course through the Community of Inquiry Framework. Using

the Community of Inquiry framework, this study aimed at examining learners' interaction and their perceptions of teaching presence, social presence, and cognitive presence in an open online course offered for professional development in three Swedish universities. In order to understand the online interactions of the course, three presences of CoI were matched to three types of interaction (Moore, 1989). Findings showed that participants had high perceptions of the three presences in the course. Results also yielded significant relationships between teaching presence and cognitive presence, as well as social presence. The findings suggest that deploying a set of online tools combined with appropriate pedagogical approaches in designing open online courses could foster learner interaction especially learner-content interaction and cognitive presence. While Saadatmand *et al.* (2017) focused on Swedish universities, the current study focused on the Zambian higher education sector. Thus, it becomes vital to interrogate CoI tenets in a predominantly print-based learning environments unlike Saadatmand *et al.* (2017) whose study's thrust was on an Open Online Course.

Related to Saadatmand *et al.* (2017) is a study by Ice, *et al.* (2011) that explored differences between community of indicators in low and high disenrollment online courses. This study utilises a data mining approach to examine course-level disenrollment through the lens of student satisfaction with the projection of teaching, social and cognitive presence. In comparing the highest and lowest disenrollment quartiles of all courses at American public University, the value of effective instructional design and organisation, and initiation of the triggering event phase of cognitive presence, were found to be significant predictors of student satisfaction in the lowest disenrollment quartile. For the highest disenrollment quartile, the lack of follow-through vis-à-vis facilitation of discourse and cognitive integration were found to be negative predictors of student satisfaction.

In addition, Olpak, Yağci and Başarmak (2016) determined perception of community of inquiry. Within the scope of their study, they investigated different data collection tools developed by different researchers; studies aiming to determine CoI perception by means of a scale were investigated in detail. Findings revealed that CoI survey instrument developed by Arbaugh, *et al.* (2008) has been widely accepted in the literature; and has been adapted to a number of languages such as Turkish, Korean and Arabic; and employed in diverse disciplines such as education, business and health care. Beyond Olpak, Yağci and Başarmak (2016), the current study applied an unobtrusive research method to interrogate eight print-based study materials in lowly resourced universities of the Global South.

Methodology and Design
To explore presence of interactivity in instructional materials using the Community of Inquiry, the study adopted a qualitative methodology with an unobtrusive approach (Creswell, 2009). In a constructivist-interpretive approach, advocates call for identifying a plurality of perspectives, interests and values. In addition,

unobtrusive research methods offer a strong critique of positivism – the concept that truths about the social world can be determined by scientific measurement. They instead belong to the epistemological theory of interpretivism, which posit that social sciences are fundamentally different from natural sciences, requiring researchers to reject empiricism and grasp the subjective meaning of social action (Bryman, 2004). In terms of ontological considerations, unobtrusive methods fit into the constructionism theory, whereby social phenomena and their meanings are reflected upon and revised by social actors (Bryman, 2004). This approach is consistent with the thinking of the founders of the unobtrusive method (Webb, Campbell, Schwartz, & Sechrest, 1966; Webb, Campbell, Schwartz, Sechrest, & Grove, 1981), who argue that unobtrusive approaches are presumed to avoid the problems caused by the researcher's presence. Since unobtrusive methods do not disrupt others, they are easily repeatable. This enabled re-checking of findings and allowed questions of trustworthiness to be re-examined by others.

Eight instructional materials were purposively sampled based on their usefulness, currency and accessibility, (Kemper, Stringfield, & Teddlie, 2003). An unobtrusive approach was chosen to address qualitative demands such as the need for reflexivity, fit for purpose, availability and accessibility. Table 1 highlights the pseudonym of institutions sampled and titles of their respective selected peer reviewed instructional materials. Zambia being a mineral rich country, names of various minerals were used to represent each of the four universities based on their initial letters.

Table 1: Sampled Instructional Materials

University Name (Pseudonym)	Course Title of Instructional Materials	Year	Field
1. *Cobalt*	BEC 210: Intermediate Microeconomic Theory	2	Economics
2. *Cobalt*	ICT 230: Software Engineering	2	Computer Studies
3. *Manganite*	EDU 211: Educational Psychology	2	Psychology
4. *Manganite*	EDU 302: Business Studies Teaching Methods	3	Business Studies
5. *Uranium*	DEV 225: Research Methods in Development Studies	2	Development Studies
6. *Uranium*	PES 104: History of Physical Education & Sport	1	Physical Education
7. *Zinc*	AED 131: Methods & Techniques in Adult Ed	1	Adult Education
8. *Zinc*	GC 211: Counselling Theories & Techniques	2	Counselling

Source: *Researchers field data*

In carrying out this study, the following procedure was followed:
1. Four universities were purposively selected based on their experience in distance education and availability volunteered to provide two peer reviewed instructional materials each totalling to eight in the following disciplines:
    (a) Economics;
    (b) Computer Studies;
    (c) Psychology;
    (d) Business Studies;
    (e) Development Studies;
    (f) Physical Education;
    (g) Adult Education; and
    (h) Counselling.
1. The selected instructional materials were dram year 1, 2 and 3 at Undergraduate bachelors' programmes.
2. A review guide based on the CoI model was developed collaboratively.
3. Eight purposive selected instructional materials were then reviewed using the model.
4. This was followed by analysis, interpretation and write-up of the paper.
5. The findings were then shared with significant others who happened to be insiders from the four intuitions, to minimise the emic/etic related challenges.

Table 2: Community of Inquiry Model

Category	Sub-category	Indicators
Social Presence	*Affective Expression*	1) Getting to know other course participants gave me a sense of belonging in the course. 2) I was able to express my emotions and opinions to other course participants. 3) Online tools and web-based communication enhance social interactions.
	Open Communication	1) I felt comfortable conversing through online tools and communities. 2) I felt comfortable participating in the course discussions. 3) I felt comfortable interacting with other course participants.
	Group Cohesion	1) I felt comfortable disagreeing with other course participants while still maintaining a sense of trust. 2) Online discussions helped me develop a sense of collaboration.
Cognitive Presence	*Triggering Event*	1) Problems (scenarios) posed increased my interest in course issues. 2) Course activities stimulated my curiosity.
	Exploration	1) I utilized a variety of information sources to explore problems posed in the course. 2) Online discussions were valuable in helping me appreciate different perspectives.
	Integration	1) Learning activities helped me construct explanations/solutions. 2) Reflection on course content and discussions helped me understand main concepts in the course.
	Resolution	1) I can describe ways to test and apply the knowledge created in this course. 2) I can apply the knowledge created in this course to my work or professional related
Teaching Presence	*Design and Organization*	1) Course goals clearly communicated 2) Clear instructions on how to participate in the course learning activities.

	Facilitation	1) Course facilitators helpful in identifying areas of agreement and disagreement on course topics that helped me to learn. 2) Course facilitators helped keep course participants engaged and participating in productive dialogue.
	Direct Instruction	1) Course facilitators helped focus discussion on relevant issues in a way that helped me to learn. 2) Course facilitators provided feedback that helped me understand my strengths and weaknesses timely.

Source: Adapted from Garrison, Anderson & Archer, (2001)

In this study, Guba's (1981) four criteria on trustworthiness was applied. They included credibility, transferability, dependability, and confirmability. The data generation process was triangulated using document review, interviews and observations. The researchers used a reflexivity approach to decipher meaning from generated data. In addition, the researchers had early familiarity with the culture of open and distance learning prior to data generation. The data generation procedure and boundaries were documented for the purposes of ensuring transferability of the study findings to different settings.

Further, the elicited information was cross-checked by participants to avoid the usual emic or etic problems. This means that interpretation of physical traces or observations may be from the point of view of the stranger, or outsider (etic), and therefore may fail to grasp important in-group meanings (emic) (Berry, 1989). Given that the findings were presented verbatim, coupled with participant checks on the research, the study met the dependability and confirmability criteria as well.

In carrying out this study, ethical issues as guided by Cohen, Manion, and Morrison (2000) were followed. For example, pseudonyms were used to represent each participating university for confidentiality and anonymity purposes as shown in Table 1 above. In addition, permission was sought and granted from the University before the study could be conducted. Further, the findings of the policy research process were disseminated to all stakeholders as demanded for in the ethical protocols.

Findings and Discussion

Emerging from this study were three broad themes: (a) Presence of interactions, (b) Absence of interactions and (c) Areas of enhancements in the instructional materials.

Presence of Interactions

In broad terms, given the CoI model, whose presence of interactions include social, Cognitive and Teaching, presence of interactions were noted within the eight reviewed instructional materials from the four universities. For instance, at *Manganite* University, Social interaction is evident in a number of instructional materials as illustrated below.

> Welcome to Unit 1 of this module. In this unit, you will learn about the key concepts in the course. This will involve definitions of curriculum, teaching, and learning. You will further learn about why these concepts of great importance in the teaching and learning situation. The unit will also look at Business Studies teaching methods and how they can be effectively used to make learners greatly benefit from the teaching and learning situations. But before we proceed, write down your understanding of the term teaching method in the space provided, (*Manganite*, 2017).

Similar to *Manganite* University, *Zinc and Uranium* Universities provided the two extracts at least in the introduction section as showed below respectively.

> Introduction
>
> **UNIT ONE**
> **REALITY THERAPY**
> Welcome to Reality Therapy. William Glasser started the counselling approach. Glasser sees himself as a person who enjoys being a helper, one who takes an opti~istic view of life and who is good at solving problems. He loves to daydream and has little use for intellectuals who make understandable ideas difficult to grasp. Glasser has an excellent sense of humour, which he uses skilfully in his teaching and counselling. We hope that you will enjoy his vies and try some of his ideas, (*Zinc*, 2006).

> **Module Introduction**
> Welcome to our introductory module on The History of Physical Education and Sport. This course has one module. As you are well aware, the field of Physical Education and Sport has evolved over time. This module therefore traces the origins and development of … As a student; you can make a careful study of some issues that would be of interest as we examine the past, the present and the future developments in this learning area Physical Education, as we know …. We are all aware that prehistoric man was a hunter and gatherer, (*Uranium,* 2018).

In addition, a few learning facilitators facilitated interaction at cognitive level as typified by *Manganite* University below. *Manganite* University in its psychology module urged learners to provide feedback on various course elements as follows:

> After completing educational psychology, we would appreciate it if you would take a few moments to give us your feedback on any aspect of this course. Your feedback might include comments on: course content and structure; course reading materials and resources; course assignments; course assessments; course duration; course support; assigned tutors and technical help, (*Manganite*, 2017).

In addition, cognitive interaction is exemplified through creation of puzzles in the mind of learners through learning activities as demonstrated in the extract at *Manganite* University's instructional materials.

> Activity 1.3.1: Have you ever wondered why most traders usually avoid marking prices of their commodities with whole figure amounts, such as K10, 000,000 but they would rather use amounts like K9, 999,000? Which branch of psychology do such traders apply? (*Manganite*, 2017).

Further, learning objectives do contribute to teaching interaction at least at design and organisation sub-level within the CoI framework. In the case of *Manganite, Cobalt* and *Uranium* Universities, there was an attempt to engage learners in a few of their instructional materials at design and organisation sub-levels as exemplified by the extract below.

> Upon completion of Educational Psychology modules, you will be able to:
> (i)   Describe the relevance of Educational Psychology to the teaching and learning process.
> (ii)   Show an understanding of how heredity and environmental factors influence human development.
> (iii)   Discuss and compare different theories of child, language and thought development and their relevance to teaching and learning in Zambia.
> (iv)   Analyse the various learning theories and apply them to the Zambian situation.
> (v)   Use Educational statistics to collect, analyse and interpret data, (*Manganite*, 2017).

Absence of Interactions

Whereas the presence of interactions was noted in a few instructional materials, others had serious lapses as learning facilitators were absent even at introduction stage. For example, at *Cobalt* and *Zinc* Universities, the learning facilitators were absent in the Software Engineering and Adult Education instructional materials as can be seen in the two extracts below.

Cobalt University while introducing the concept of software engineering provided another example where the facilitator is disengaged from the learner.

1.0 Introduction

Computer software continues to be the single most important technology on the world stage. All countries these days rely on computerised systems for different tasks. Utility companies (e.g. telecommunication companies, water utility companies and electricity companies) rely on computerised systems for the management of the services they offer to the public.... It is important to produce and maintain software in a cost-effective manner (*Cobalt*, 2017).

Equally, *Zinc* University while introducing learners to unit 1 on instructional Methods in Adult Education shares yet another example where the facilitator is disengaged from the learner.

Introduction

In this unit and in line with Verner's classification, a distinction is made between methods and techniques to help adult educators and learners understand what is involved in the two concepts. This will bring about correct usage of the two terminologies as stipulated in the principles and theory of adult education, (*Zinc*, 2006).

Such a state of affairs, where the learning facilitators are absent, is a precursor to failure to unsuspecting learners induced by institutions of higher learning ignorantly. Other proponents of instructional deign argue that when learning facilitators are absent in the learning materials then such resources are ruined as they fall short of the desired Open and Distance Learning pedagogical tenets. Such a state of affairs is a fertile ground for academic under achievements and failure which is artificially induced by institutions of higher learning.

Cobalt University in one of its instructional materials in Software Engineering provided a wrong example on how to write a Learning Unit as follows:

Unit Objective

When you have finished this unit, you will be able to:
- (a) Explain software engineering and software engineering process
- (b) Explain the duties of a software engineer
- (c) Explain the skills required for software engineers.
- (d) Explain the ethical and professional responsibilities of software engineers, (*Cobalt*, 2017)

Throughout the entire module, activities were only in form of exercises given without providing spaces to scribble responses in or attach any incentives to the activities by *Cobalt and Zinc* Universities' learning facilitators in *Software Engineering* and *Adult Education* instructional materials respectively. Below is an extract from *Zinc* University.

> Activity
> 1. In adult education we talk about methods. What do we mean?
> 2. How does a technique differ from a method?
> 3. Identify the teaching aids or devices which promote learning in adults.
> 4. Pick four individual methods and how can you apply them in real life situations?
> 5. How many group methods have you learnt in this session and how can you use them?
> 6. Community methods are essential in education of adults. Give examples of community methods and their application.
>
> Distinguish between expository, explanatory and participatory methods, (*Zinc*, 2006).

The situation at *Uranium* University is similar to what was obtaining at *Zinc* and *Cobalt* Universities in terms of disengaged learning materials even right at introduction stage as can be seen in the example below:

> Module introduction
> Development Studies by definition is a multi-disciplinary field whose broad goal is socio-economic growth and development that manifests into improvements in living conditions of people. When a nations' GDP increases, it is expected that the socio-economic wellbeing of people also improves. The scope of Development Studies is much broader….
> (*Uranium,* 2018).

Areas of Enhancement

Clearly, if effective teaching and learning is to be attained then the identified absent areas of interactions above present opportunity for possible areas of enhancement at three levels within the CoI model as follows:

Social interaction

There was need to enhance the sense of belonging within the instructional materials among learners. Equally, learners needed to be accorded opportunities to express their emotions and opinions to other course participants. This could better be achieved with online tools and web-based communication to enhance social interactions. Once implemented, learners are likely to become comfortable to disagreements with other course participants while still maintaining a sense of trust and collaboration. Studies

by Kalinde (2016) and Kalinde (2017), present various ways in which social interactions in teaching and learning enables multifaceted ways of understanding. Empirical evidence shows that when social presence is established, collaboration and critical discourse is enhanced and sustained, (Swan & Shih, 2005; Caspi & Blau, 2008; Liu, Gomez & Ye, 2009) and social presence and satisfaction (Arbaugh & Benbunan-Fich, 2006; Richardson & Swan, 2003; Akyol, Garrison & Ozden, 2009).

Cognitive Interaction

Whereas a few learning materials had activities with problems-based scenarios embedded, the majority did not have them, hence negated the cognitive interactions within their instructional materials. There is need to embed unit activities to stimulated curiosity among learners. Learning unit activities help to construct explanations. In addition, Simui, *et al.* (2017), observed that the inclusion of learning activities made instructional materials friendly to learners. Some learning activities could be reflective in nature to foster deep understanding of concepts in the course. This calls for application of knowledge to real life or professional related (Garrison, Anderson & Archer, 2001). To this end, there is need to enhance learning outcomes to mirror the revised Bloom and Solo's Taxonomies.

Teaching interaction

Further, course facilitators were urged to identify areas of agreement and disagreement on lessons presented to enable learners learn. Similarly, course facilitators needed to keep course participants engaged and participating in productive dialogue, a situation which was absent in all the four universities. Whereas some had Learning Management Systems, very little learning related discussions across courses on offer took place. It should be noted here that course facilitators help to focus discussions on relevant issues in a way that empower learners to learn. Finally, course facilitators are urged to provide timely feedback that help learners to understand their strengths and weaknesses, (Anderson, Rourke, Garrison, & Archer, 2001; Masaiti, 2018).

Conclusion

In conclusion, within the continuum of interactivity, the study has shown a heavy presence of student-content while student-facilitator and student-student forms of interactions are conspicuously missing. Equally, there is more emphasis on cognitive presence while the social and teacher presences are missing to a large extent. Such a state of affairs explain why distance education learners appear to be disengaged in the learning process since the instructional materials are not anchored on sound pedagogical distance education principles. Overall, the CoI framework has guided this study and demonstrated how weaknesses and strengths can be identified and ways to improve and facilitate learning among distance learners. In addition, social

interaction is critical in humanising the distance learning instructional materials, a perquisite to critical thinking and higher-order learning outcomes. Thus, once instructional designers apply CoI model rightly, learners will have the cognitive map within which to learn how to learn and become self-directed.

Given the fore going above, the following are the recommendations:

i. A tailor-made capacity building in the pedagogy of Open and Distance Learning encompassing the Community of Inquiry among others for all learning facilitators engaged in distance education.

ii. In dual mode institutions, given the complex nature of the Open and Distance eLearning industry, only specialised entities in ODL be authorised to provide distance education to enhance learning in instructional materials.

iii. Further, Higher Education Authority is urged to monitor the quality of instructional materials obtaining in institutions of higher learning.

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References

Anderson, T., Rourke, L., Garrison, D.R., and Archer, W. (2001). Assessing teacher presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, 5(2), 1- 7.

Akyol, Z., Garrison, D. R. and Ozden, M.Y. (2009). Online and Blended Communities of Inquiry: Exploring the developmental and perceptual differences. *International Review of Research in Open and Distance Learning*, 10(6), 65-83.

Arbaugh, J.B. and Benbunan-Fich, R. (2006). An investigation of epistemological and social dimensions of teaching in online learning environments. *Academy of Management Learning & Education*, 5(4), 435-447.

Arbaugh, J.B., Cleveland-Innes, M., Diaz, S., Garrison, D.R., Ice, P., Richardson, J. Shea, P., and Swan, K. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *Internet and Higher Education*, 11, 133-136.

Berry, J. (1989). Imposed etics-emics-derived etics: The operationalization of a compelling idea. *International Journal of Psychology, 24*(1), 721–735. doi:10.1080/00207598908247841.

Bryman, A. (2004). *Social research methods*. Oxford: Oxford University Press.

Caspi, A. and Blau, I. (2008). Social presence in online discussion groups: testing three conceptions and their relations to perceived learning. *Social Psychology of Education*, 11(3), 323-346.

Cohen, L., Manion, L., and Morrison, K. (2000). Research methods in education

(5th ed.). London: Routledge.

Creswell, J. (2009). Research design: Qualitative, quantitative and mixed methods approaches. Los Angeles, CA: Sage.

Dewey, J. (1959). My pedagogic creed. In J. Dewey, Dewey on Education (pp. 19-32). New York: Teachers College, Columbia University. (Original work published 1897)

Garrison, D.R. (2000). Theoretical challenges for distance education in the 21ˢᵗ Century: A shift from structural to transactional issues. *International Review of Research in Open and Distance Learning*, 1(1), 1-17.

Garrison, D.R., and Archer, W. (2000). A transactional perspective on teaching and learning: A framework for adult and higher education. Oxford, UK: Pergamon.

Garrison, D.R., Anderson, T. and Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87-105.

Garrison, D.R., Anderson, T. and Archer, W. (2001). Critical thinking and computer conferencing: A model and tool to assess cognitive presence. *American Journal of Distance Education,* 15(1), 7-23.

Guba, E.G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal, 29*, 75–91. Retrieved from https://www.jstor.org/journal/educcommtech

Ice, P., Gibson, A.M., Boston, W. and Becher, D. (2011). An Exploration of Differences Between Community of Indicators in Low and High Disenrollment Online Courses. *Journal of Asynchronous Learning Networks*, Volume 15: Issue 2.

Ice, P., Curtis, R., Phillips, P. and Wells, J. (2007). Using asynchronous audio feedback to enhance teaching presence and students' sense of community. *Journal of Asynchronous Learning Networks*, 11(2), 3-25.

Kalinde, B. and Vermeulen, D. (2016). Fostering children's music in the mother tongue in early childhood education: A case study in Zambia. *South African Journal of Childhood Education*, 6(1), 1-9.

Kalinde, B. (2017). *Music Education in Zambia: Using game songs in early childhood learning.* Pretoria: University of Pretoria. Unpublished PhD Thesis.

Kemper, E.A., Stringfield, S. and Teddlie, C. (2003). Mixed methods sampling strategies in social science research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 273–296). Thousand Oaks, CA: Sage.

Masaiti, G. (2018). *Education in Zambia at 50 Years of Independence and Beyond: History, Current Status and Future Prospects*, UNZA Press, Lusaka.

Mundende, K., Simui, F., Chishiba, A., Mwewa, G. and Namangala, B. (2016). Trends and prospects of instructional material development and delivery at the University of Zambia. *Global Journal of Human-Social Science: Linguistics*

& Education, 16(3), 5-11. Retrieved from https://globaljournals.org/journals/human-social-science-journal.

Muzata, K.K. (2013). Distance Education Students' Experiences of Learning from Audio Recorded Lectures, a Case of Mufulira and Nkrumah Colleges of Education, The *International Journal of Education Chronicles*. 4 (2) 97-109.

Olpak, Y.Z., Yağci, M. and Başarmak, U. (2016). Determination of perception of community of inquiry. Educational Research and Reviews. Vol. 11(12), pp. 1085-1092. DOI: 10.5897/ERR2016.2758.

Richardson, J.C. and Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. Journal of Asynchronous Learning Networks, 7 (1), 68-88.

Rourke, L., Anderson, T., Garrison, R. and Archer, W. (2001). Methodological issues in the content analysis of computer conference transcripts. *International Journal of Artificial Intelligence in Education*, 12(1), 8-22.

Saadatmand, M. *et al. (2017)*. Examining Learners' Interaction in an Open Online Course through the Community of Inquiry Framework. *European Journal of Open, Distance and e-Learning* – Vol. 20 / No. 1 https://files.eric.ed.gov/fulltext/EJ1187832.pdf

Siaciwena, R. (2006, October 30–November 3). Challenges of a dual mode institution: The case of the University of Zambia (UNZA). Paper presented at the Fourth *Pan Commonwealth Forum on Open Learning*, Ocho Rios, Jamaica. Retrieved from http://pcf4.dec.uwi.edu/viewpaper.php?id=426

Simui, F., Chibale, H. and Namangala, B. (2017). Distance education examination management in a lowly resourced north-eastern region of Zambia: A phenomenological approach. *Open Praxis*, 9(3), 299–312. doi:10.5944/openpraxis.9.3.442

Simui, F., Mwewa, G., Chifwepa, V., Namangala, B., Mudende, K. and Chishiba, A. (2015, October). Reflecting on the drivers to increase access to education via the distance learning mode at the University of Zambia: 50 years of experience. Paper presented at the *International Council for Distance Education Conference* in Sun City, South Africa.

Simui, F., Thompson, L., Mundende, K., Mwewa, G., Kakana, F., Chishiba, A. and Namangala, B. (2017). Distance learner's perspective on user-friendly instructional materials at the University of Zambia. *Journal of Learning for Development*, 4(1), 90–98. http://oasis.col.org/handle/11599/2772.

Swan, K. and Shih, L.F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, 9(3), 115-136.