Distance Learners' Perspective on User-friendly Instructional Materials at the University of Zambia

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Abstract: This case study focuses on print-based instructional materials available to distance education learners at the University of Zambia. Using the Visual Paradigm Software, we model distance education learners' voices into sociograms to make a contribution to the ongoing discourse on quality distance learning in poorly resourced communities. Emerging from this study are the ten elements that instructional designers will need to re-consider, some of which are: (i) presentation and layout of content; (ii) use of interactive language; and (iii) inclusion of real life situations. In view of the foregoing, it is recommended that the university adhere to ODL instructional design fundamentals in all its instructional materials as a means to improved quality distance learning.

Keywords: Instructional Materials; User-friendly Modules; Distance Learning; University of Zambia

Introduction

In this case study we focus on print-based instructional materials available to distance students at the University of Zambia. Specifically, the students are drawn from a second-year cohort in a Bachelor of Teacher Education programme. The choice of the programme is motivated by the active engagement of the principal author as one of the learning facilitators in Teacher Education. A second-year cluster of 44 students were engaged in the study and focused on the four (4) modules namely: (i) PEM 2061 (Innovation in Teacher Education), (ii) PEM 2071(Organisational Skills in Teaching), (iii) PEM 2082 (Special Education Needs) and (iv) PEM 3122 (Assessment and Evaluation). This programme, of three years' duration, has been in existence for the past six years within the university. The Bachelor of Teacher Education is a modular programme available exclusively to in-service teacher educators. Predominantly, students are drawn from among school managers, senior teachers, resource centre coordinators, teacher educators at colleges of education, and teacher educator administrators at district, provincial and national levels.

The theoretical framework guiding the study is situated within Moore's Theory of Interactions. According to Moore (1989), there exist (1989)three forms of interactions in distance education. These are (i) interaction between students and teacher, (ii) interaction among students and (iii) interaction of students with content. This particular study, is restricted to the interaction of students with the instructional materials. The choice of the focus area is motivated by the Bernard,Abrami, Lou, Borokhovski, Wade, Tamin & Bethel (2009) meta-analysis, as highlighted by Gaskell and Mills, 2014), whose major finding indicates that increasing student-content interaction had the greatest effect compared to the other two typologies of Moore's interactions.

Context

The demand for teachers in Sub-Sahara Africa in general and Zambia in particular has contributed to the wholesale adoption of Open and Distance Learning approaches. Teacher educators are at the centre of increasing the numbers of teachers in schools. Hence the introduction of a tailor-made programme dubbed 'Bachelor of Teacher Education' at the University of Zambia. However, there are calls among stakeholders that while ODL does significantly contribute to increased numbers of teachers in schools, there are concerns that distance education could be increasing the quantity of teachers at the expense of their quality (Chakwera & Saiti, 2005). At the University of Zambia, print-based instructional materials are still dominant, so it becomes paramount to appraise their quality in view of the scarcity of research studies in this area.

Study Objectives

The specific objectives of this study were:

i). To identify the user-friendly instructional materials from the learners' perspective;

ii). To discuss the factors contributing to user-friendly instructional materials; and

To suggest ways in which the quality of instructional materials could be improved from the end-user perspective.

Literature Review

The Commonwealth of Learning (2005) as well as Freeman (2004) identify the following elements as critical indicators for improved quality of instructional materials: (i) learner profiles; (ii) context; (iii) aims and objectives; (iv) activities; (v) examples and illustrations; (vi) assessments; (vii) access devices; (ix) time allocation; and (x) language writing styles and layout.

Freeman's ODL instructional design quality elements highlighted above are consistent with the observations of Peat and Helland (2002), who argue that the design and development of quality instructional materials should reflect all the tenets of Open and Distance Learning. Rahman (2015) observes that assessment in instructional materials is critical as it upholds and engenders credibility and quality of the distance learning system in use. One of the ways through which instructional materials available to distance students could be crafted into user-friendly materials is through embedding interactive learning activities that are flexible and responsive to individual needs (Commonwealth of Learning, 2005). This links well with what Coleman and Anderson (2002) advocated when they argued that the type of information given to distance learners must be fit for the purpose, relevant to the moment, adequate and accessible for the development of the individual.

The success of any distance education programme is heavily dependent upon its quality of instructional materials (Padhi, 2004). A well-designed interactive instructional material is the hallmark for successful teaching and learning in all the flexible learning modes (Kuruba, 2004). However, it should be noted that ease and interest do not guarantee that students perform well. According to Kühl & Eitel (2016), desirable difficulty has a tendency to force students to invest more mental effort and hence to learn more.

In addition, Murphy (2000) argues that instructional materials for distance education are most effective if they are written with precise objectives and learning activities are woven within the learning unit. Learning activities are critical in chunking content into suitable learning segments. Murphy's observation is vital considering that a distance student is likely to be studying in isolation and so the instructional materials have to be complete. The approach to include learning activities in the instructional materials resonates well with the constructivist approach, which emphasises the learner's own activities as the mechanism for learning (Elen & Clarebout, 2001). Furthermore, there is need for instructional designers to craft the interactional situation in a friendly tone. For instance, Freeman (2004) alludes to the use of an active voice such as 'we' and 'you' and the use of short sentences as being helpful in maintaining a friendly tone.

Research Design

In order to explore 'user-friendly instructional materials' through the lenses of learners within a distance education context, this study adopted an interpretive research paradigm (Halling et al., 2006). The central endeavour in the context of the interpretive research paradigm was to understand the subjective world of the learners while studying through the distance-learning mode (Creswell, 2014). In an interpretative study such as this one, theory (grand ideas) is emergent and must arise from particular situations and 'it should be 'grounded' on data generated by the research (Denscombe, 2002).

Research Procedure

A total of 44 second-year students doing a Bachelor of Teacher Education (BTEd), were all purposively sampled based on their interaction with the modules as well as their easy accessibility by the researchers. The programme at the second-year level had four modules, namely: (i) PEM 2061, (ii) PEM 2071, (iii) PEM 2082 and (iv) PEM 3122. The participants were all invited to voluntarily participate in this study and were requested to supply the following details: full names, course codes of perceived user-friendly and user-unfriendly modules, as well as justification for their choices. Once the details were received, these were further processed as shown in Table 1 below.

Table 1: Data Capturing Model

SN	Name	Pseudonym	User-friendly Modules	Use-unfriendly Modules	Justification
01	Cain Pan	CP01	e.g., PEM 2061	PEM 2071	Reasons

Note: SN = Serial number, code e.g., CP01 = first and second letters 'C' and 'P' represent surname and first names of the participating students and '01' represents the serial number on the alphabetically ordered initial list of all students in class. The coded pseudonyms of students were then clustered around their preferred user-friendly modules using the Visual Paradigm Professional Software (VP 12.0).

The elicited information was cross checked by inside informants who happen to be the 44 purposively sampled students, to avoid the usual emic/etic related challenges. This means that interpretation of phenomena may be from the point of view of the stranger, or outsider (etic) and, therefore, may fail to grasp important in-group meanings (emic).

Findings and Discussion

Emerging from the VP 12.0 modelling were four sociograms as clustered and displayed in Figure 1 below. Respondents identified the four modules, namely (i) PEM 2061, (ii) PEM 2071, (iii) PEM 2082 and (iv) PEM 3122, as modules they were interacting with in their BTEd programme of study in year two.
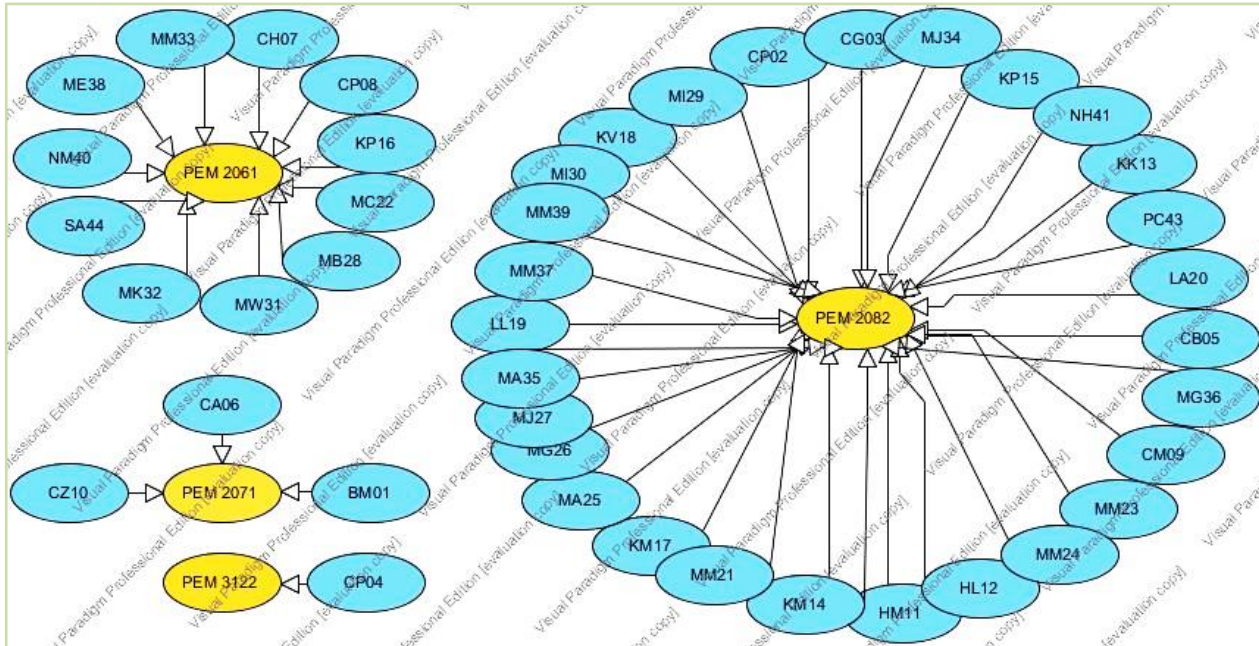
Figure 1: Concentration of User-friendly instructional materials

The most user-friendly instructional material was PEM 2082, represented by 29 out of the 44 respondents (65.9%), followed by PEM 2061 with 11 out of the 44 respondents (25.0%). However, the least user-friendly instructional materials were PEM 2071 with 3 out of the 44 (6.8%) and PEM 3122 with 1 out of the 44 respondents (2.3%).

Table 2: Rating of User-friendly Modules by the 44 Students

SN #	Instructional Materials	Rating (% of 44)
1	PEM 2061: Innovation in Teacher Education	25.0%
2	PEM 2071: Organisational Skills in Teaching	6.8%
3	PEM 2082: Special Education Needs	65.9%
4	PEM 3122: Assessment and Evaluation	2.3%

As shown in figure 2, PEM 2082 was rated by students as the most user-friendly module, compared to PEM 3122 which ranked least among the four instructional materials. The 44 respondents were further engaged to share their reasoning behind their respective choices for designating some courses as user-friendly or user-unfriendly. The responses were then thematically summarised as reflected below.

Critically reflecting on the various reasons advanced by the respondents for classifying instructional materials either as friendly or user-unfriendly, the following ten (10) themes emerge: (i) general presentation and layout of content; (ii) inclusion of objectives; (iii) use of interactive language; (iv) size of font and module; (v) coherence of ideas used; (vi) use of illustrations; (vii) presence of instructional design and inclusion of activities; (viii) explanation of technical terms; (ix) inclusion of real-life situations; (x) assessment.

(i) General Presentation and Layout

According to CH07, a non user-friendly instructional material is one with "very faint printing, no page numbering, no clear headings and no subheadings to mark the end of the topic." This is

supported by CA06 who argues that a non user-unfriendly module has "disorganised units which are not sequentially arranged." Others contributing to this discourse observed that some of the factors responsible for having non user-friendly instructional materials with disorganised presentations and layout could be what NH41 terms as "a collection of photocopies from books", which MA35 attributes to "just copy and paste from the internet." Therefore, for the instructional materials to be user-friendly, MM21 advocates for having some critical segments within the modules "highlighted to mark the important information." Further, HM11 supports the inclusion of unit summaries to enable learners to understand the content with ease. This is consistent with Freeman (2004) on instructional material design and development tenets. One remedy to the challenge of user-unfriendly instructional materials is what NK42 alludes to as the need for quality peer-review mechanism.

(ii) Use of Clear Concise Language

An equally critical aspect that determines the level of user-friendliness is the use of clear and concise language. For instance CP04 and MJ34 term a module user-unfriendly when it "cannot flow well with ideas with language difficult to understand." In addition, CP08 observes that the use of "unfamiliar language" and use of "unfamiliar or unknown concepts," all render the instructional materials user-unfriendly. Consequently, MW31 observes that modules written in an uninteractive manner tend to force learners to solicit explanations from other people in order to grasp the content presented. This is in line with Commonwealth of Learning (2005), advocating for the use of active voice, such as 'we' and 'you' as well as short sentences to maintain a user-friendly tone.

Further, MI30's advice on language used is that instructional designers get "straight to the point" when developing study materials. The self-study materials essentially should be "simplified" for an easy grasp of content. Further, YM45 advises instructional designers to avoid the use of ambiguous language if their modules are to be classified as user-friendly by the learners. The observations made by the respondents link well with Coleman and Anderson (2002)'s views. They argue that the type of information given to distance learners must be fit for the purpose, relevant to the moment, adequate and accessible for the development of the individual.

(iii) Inclusion of Objectives

The inclusion of module and unit objectives is critical for effective learning to take place. For instance KK13 argues that "lacking specific objectives" could be a recipe for rendering a module user-unfriendly. This thought is supported by KM14 who observes that some modules on offer were "without objectives." Further, MG36 observes that some modules had no defined objectives. In agreement with the above, Celikoz (2010) observes that objectives should be clearly stated in the instructional materials as they aid in testing and evaluating student success.

(iv) Size of Font Type and Module

CM09 observes that user-friendly instructional materials have "large prints to cater for everyone including those with poor sight." This is in line with MA 25 who posits that "words written in big fonts" render the module user-friendly and is further supported by MI29 who argues that instructional materials "written in very small fonts" prevent learners from understanding the contents effectively. In addition, CM09 argues that non user-friendly instructional materials are written with "small prints" yet whose "volume is too big." As for CB05, a user-friendly module has "manageable content." In addition, a number of learners observe that modules that are too bulky are unpopular among their end users. This aspect was further highlighted by MM21, who noted that some non user-friendly modules were "bulky" with small font size "irritating" learners. As for MA25, "a module that is too thick, brings laziness" towards studying among learners. Related to this is what CP04 and KV18 term as "very big volume (module), threatens the reader." Below is a summary of the researcher's observations regarding descriptions of the four modules.

Table 3: Modules' Descriptions

		PEM 2061	PEM 2071	PEM 2082	PEM 3122
1)	Page Numbers	81	107	58	156
2)	Font Size	11	11	11	9, 10 & 11
3)	Line Spaces	1.15	1.5	1.5	1
4)	Unit Numbers	7	7	5	0
5)	Activities	7	26	10	0
6)	Module Introduction	Available	Available	Available	Missing
7)	Unit Objectives	Available	Available	Available	Missing
8)	Addresses the learner	Yes	Yes	Yes	No
9)	Unit Summaries	Available	Available	Available	Missing

While PEM 2061, PEM 2071 and PEM 2082 had a number of common areas such as font type and font size accompanied by engaging activities, to the contrary PEM 3122 had serious disparities when compared to the other modules. The purported module had no units, no activities, used multiple font sizes and font types, with faded content in most sections due to the effect of photocopying over time. This made PEM 3122 not user-friendly to the learners, since a document analysis revealed that the module was a compilation of batches of chapters extracted from assorted textbooks. Clearly, the purported module did not meet the minimum standard of a module; hence it was given a low ranking by students above.

(v) Coherence of Ideas

Coherence of ideas appears to be a major factor determining the user-friendliness of given instructional material, as advocated by Freeman (2004). For instance, CP04 observes that user-friendly modules have "connected ideas. One way in which this could be achieved is through what CP08 views as writing from the "known to the unknown" in the absence of content cohesion; HL12 argues that learners have difficulties understanding concepts. HL12 further adds that it is important that ideas are connected sequentially and written neatly and clearly. However, LL19 highlighted that some modules were user-unfriendly because their content did not "relate to the existing knowledge of a student." LA20 observes that some modules do not bring out intended content as they are "unable to communicate clearly with the reader."

(vi) Use of Illustrations

Use of illustrations within the learning units was identified as one of the features that enable instructional material to become user-friendly. For instance, CH07 argued that modules with illustrations and examples empower learners to appreciate the content without challenges. In addition, CP08 observes that modules crafted with appropriate illustrations like case studies, aids learners to understand even challenging content with ease.

(vii) Inclusion of Activities

The inclusion of activities within the instructional materials was listed as one of the features of a user-friendly module. For example, MJ34 observed that where "unit activities for the learners" were incorporated in the modules empowered learners to master the content with ease. This thought on unit activities was shared by MK32 as well as MG36 as paramount to effective user-friendly instructional material for distance education learners. This is in line with the Commonwealth of Learning (2005) who advocates for interactive learning experiences that are flexible, equitable and

responsive to individual needs within the study guides. Further, SA44 is of the view that instructional designers needed to have their contact details reflected on the cover page for ease of access during moments when learners were seeking clarity in understanding difficult concepts.

(viii) Technical Terms Explained

A user-friendly instructional material is one with technical and scientific terms well explained, as observed by CB05, MM23 and MM37. For instance, CB05 argued that user-unfriendly instructional material is "a module with many scientific terms which are not easy to understand as well as a module with many psychological terms." The challenge of technical concepts was made worse by the absence of instructional designers during residential sessions to fully clarify the implied meanings behind certain difficult concepts.

(ix) Inclusion of Real-Life Situations

Inclusion of real life situations in the instructional materials was considered a tenet of a user-friendly module by KP15. For KP15, real life situations enabled learners to easily understand content in the instructional materials. According to Palmer (2007), the use of real life situations in the instructional materials increases students' motivation. This is supported by Frey and Fisher (2010).

(x) Assessment

Finally, assessment was identified as one of the key aspects of user-friendly instructional material by a number of respondents. For instance, MC22 bemoaned the absence of "proper guidance on how exam questions are formulated." This is consistent with the Commonwealth of Learning (2005) who posit that a good quality self-instructional should contain self-tests as a means to self-evaluate the extent to which the instructional material objectives were achieved. Further, Freeman (2004) posits that, in an effective module, summative assessment assesses a learner's learning outcomes after interacting with the given content area.

Conclusion

The findings of this study have brought to the fore a number of challenges that practitioners in instructional design could consider, especially in poorly resourced communities where print is the dominant medium of instruction. It has been highlighted in this paper that print-based instructional materials could be considered user-friendly if the materials conform to the ten elements discussed above. These elements are: (i) general presentation and layout of content; (ii) inclusion of objectives; (iii) use of interactive language; (iv) size of font and module; (v) coherence of ideas used; (vi) use of illustrations; (vii) inclusion of activities; (viii) the explanation of technical terms; (ix) inclusion of real life situations; (x) assessment items. It is envisaged that once the listed elements are incorporated during the design and development of instructional materials, the quality of distance learning would consequently improve.

Recommendations

In view of the foregoing discourse, it is recommended that:

(i)   The university revisits its instructional designers with refresher courses in instructional designing to ensure that modules are user-friendly to the learners and crafted with the learners' concerns in mind.

(ii)   In addition, a university-wide study is recommended to understand the user-friendliness phenomenon in instructional materials across all the disciplines and levels of learners.

Other practitioners and academicians are encouraged to venture into this area to ascertain the extent of user-friendliness of instructional materials in their local settings and to further illuminate the discourse.

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