William & Flora Hewlett Foundation/COL Open Education Resources for Open Schools

Zambia - Initial Evaluation Report

SAIDE
South African Institute for Distance Education

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Table of Contents

Introduction

This is the Zambia report on the Commonwealth of Learning (CoL) Open Educational Resources (OERs) project which is currently being implemented in the following countries: Namibia, Botswana, Lesotho, Trinidad & Tobago, Seychelles. This report presents the results for the latest country to join the project - Zambia

In Zambia, materials to support independent study in three selected secondary schooling subjects will be developed and made available electronically as OERs. Basecamp software (together with the CoL instructional design template) has been used to facilitate a collaborative, online approach to materials development and as a tool for managing the process. It is intended that the materials developed will, with some contextual adaptation, be suitable for use across the six countries in the CoL project thus maximising their usage.

Methodology

Data was collected for this report from two key sources. These are:

1. A baseline assessment of the participant's materials development competence; and
2. Participant evaluation of the training.

Criteria used for evaluating the participants' entry level materials development skills are set out in the evaluation plan.

Key criteria used are:

- There are clearly laid down aims and learning outcomes for this learning unit/topic.
- The content and teaching approach supports students in achieving the learning outcomes and there is an explicit learning approach/cycle.
- Materials have learner-friendly introductions, linking and summarizing passages that motivate students and that provide coherence of materials – the 'teaching voice' is made explicit in the materials.
- Materials have content that is presented in logical/sequential form and there are building blocks to the acquisition of key concepts that are well scaffolded.
- The content of the material is accurate, up-to-date, and relevant to aims and outcomes.
- Materials exhibit congruence between stated outcomes, learning activities and assessment tasks.
- The language level is appropriate for the targeted students.
- Students' context is taken into consideration.
- Materials promote active learning approaches

Data collected from the two sources mentioned above was analysed and the findings were written up and are presented below.

Baseline assessment of the participant's materials development competence

Data on participants' entry competences in developing self-instructional learning materials suitable for open learning contexts was obtained by the administration of two baseline assessment tasks specifically designed for the target group. These were given to all participants to complete at the beginning of the training workshop.

It is intended that this information on participants' entry skills will serve as a baseline against which to measure the impact of the first training workshop as well as the impact of any subsequent training provided.

The baseline assessment consisted of two tasks. The first being a critique of an extract from a learning guide on the HIV and AIDS pandemic, prepared as a teaching and learning resource for students enrolled in initial teacher training programmes. The participants were requested to critique the extract in terms of its instructional design features, identifying both the strengths and the weaknesses of the open learning resource.

This exercise was intended to test participant's knowledge of what a good self-instructional learning resource consists of, including their ability to identify the design and pedagogic strengths and weaknesses of the resource. Participants were advised to spend 40 minutes on this task.

The second task required the participants to design and develop a short learning resource suitable for self instructional study in an open schooling context.

Participants were requested to select a teaching subject in which they had specialised knowledge to ensure that they would feel comfortable with the content. They were also required to use the COL instructional design template (a copy was provided for each participant) as a framework to assist them in structuring the design and development of *one topic in a unit of learning suitable for self study in an open school learning context*.

The envisaged length of this task was approximately three typed pages (font and point-size were specified). Approximately 1 hour and 15 minutes were allocated to complete this task.

It was a requirement that both tasks be completed in a MS WORD Document format on the computers made available.

Once completed, the participants were required to email the tasks directly to SAIDE.

Participant evaluation of training

Data on participant training and by extension, on the role and function of the project consultant, was obtained by the administration of a carefully structured evaluation questionnaire designed for this purpose. These were given to all participants to complete at the end of the training workshop.

Basic data pertaining to the participant's profiles was also collected. Information pertaining to years of teaching and materials development experience as well as subjects taught and levels at which these subjects are taught was collected.

Over all, this component of the evaluation sought to determine the efficacy of the two week, training workshops held in all six countries. Areas of training focused on in the questionnaire include, the participant's overall degree of satisfaction with: The attainment of stated workshop objectives; content, relevance and methods used in delivering the training; and levels of knowledge and skills acquired in respect of using the Basecamp programme; the nature and value of open education resources; using creative commons licences; skills in developing course blue prints (course design); application of the COL instructional design template; and skills required for creating and editing multi media resources.

Participants were also required to reflect on and assess their own needs in terms of additional training and support required in any of the areas cited above.

Once the questionnaires were completed, the participants were required to email them to SAIDE.

As with the assessment tasks received, SAIDE staff were then responsible for analysing and writing up the findings.

Practical Materials Development Assessment Tasks

Number of participants: 15

Institutions represented: Zambia College of Distance Education,

High schools

Fiseng Basic School

Valley View Basic School

Assessment Task One: Critique of resource extract provided

All the 15 participants provided examples of weaknesses inherent in the extract which they were required to critique. Most of the participants (13) also provided examples of strengths that they identified in the resource extract. In general, the strengths and weaknesses identified pertained to design issues like the presence of an *introduction* and, outcomes, *use of icons* as well as comment on the *lack of definitions* for some of the important terms used in the resource.

A few participants commented on the actual application of certain design features. For example, noting that while outcomes had been stated, these were not in fact covered by the content provided in the resource. None of the participants commented on the measurability or lack there of, of the stated outcomes, a point that was raised by a number of participants from other countries.

Very few participants commented on the importance of promoting active learning through activities or the provision of feedback to activity exercises.

The critique provided by most of the participants was in the form of a few bullet points comprising less than half a page.

To sum up

While 45 minutes was allocated for this task, the country coordinator reported that the participants used significantly more time to complete this task. None-the-less, most participants were only able to engage very superficially with the task.

Generally, most of the participants' comments pertained to the design aspects of the materials and made no mention of underpinning pedagogical issues. Only three participants commented on pedagogical aspects. Of these three, two commented on the interactive nature of the materials, the third one commented on the promotion of reflection through activities. From the critiques provided, it may be concluded that most participants do not appear to be aware of the key pedagogical features of good quality self-instructional materials. Most participants were not able to identify issues relating to learning pathways and the importance of reflecting on bits of learned content before proceeding to the next aspect of learning. Basic issues like "sequencing" and the importance of "scaffolding of learning" were not mentioned by any of the participants. Use of appropriate language for the target users was also not mentioned. The absences of discussion on these aspects of the resource are worrying and suggest that the participants will require a lot of support in materials design and development.

Assessment Task Two: Develop an exemplar unit of a learning material

Background to the task

In Task Two, participants were required to design and develop one topic in a unit of learning and teaching resource suitable for self study in an open school learning context. Participants were provided with the COL instructional design template which was given to them to use as a framework /guide for designing the learning and teaching resource. The specific instructions given to the participants included that they should:

- Provide details of the subject and topic in which they were developing a short unit of ODL learning and teaching material
- Provide details of the target group for which the material was being prepared
- Use the COL template as a guide or checklist to assist the participants to structure their written work
- Prepare a unit of ODL teaching and learning material that is approximately three typed pages long.
- Allocate an hour and 15 minutes for this task.

Adherence to technical requirements

The majority, of the participants provided the basic information called for at the beginning of this task. They stated the subject, the topic, and the target group for which they were writing and they adhered to the structure of the CoL template.

In two instances, participants did not provide the information pertaining to the target group, it was therefore not possible to assess whether the content of the materials developed was pitched at the appropriate level, nor was it possible to assess their ability to peg the assignment and the assessment tasks at the appropriate level.

Assessment of content and materials design

Overall, most participants were able to formulate learning outcomes that provided a clear statement of the skills and knowledge to be demonstrated.

However, at the most basic level content input in some of the resources developed for this task were thin. Learners are not provided with sufficient content knowledge to undertake the activities or assessment tasks in the resource. A particular case in point being the Chemistry learning resource on atoms.

Additionally, more than half the participants, nine of the fifteen, did not develop an assessment task and five (or a third) did not prepare an assignment task. In these instances, no mechanism for consolidating or demonstrating learning was provided.

Of those participants who did provide assignment and assessment tasks, four developed tasks that were not at the appropriate level for the stated target groups. The following two examples illustrate this point. Both examples pertain to Mathematics for Grade 10 learners

Example one:

Let the set be A = {1,2,3,4,5,6}; B = {2,4,6,8,10}; C = {3,4,6,9}.

Find the following sets: 1. $A \cup B$ 2. $A \cap B$ 3. $B \cap C$

Example two:

1. What are even numbers?

2. List even numbers between 100 and 110.

3. List all the whole numbers between 0 and 7.

It is clear that the knowledge and skills required to complete these two tasks is below anything one would expect of Grade 10 Maths learners.

The level of English language proficiency of participants is acceptable, although the materials contained many language errors.

To sum up

As with Task One, extra time was also allocated to complete this task. Even with additional time being allocated, six of the fifteen participants, still did not manage to complete this task.

Although the participants showed evidence of a general understanding of the more technical aspects of ODL materials design (which also resonates with the experience in Task One) the overall quality of the materials development tasks is uneven. In some instances content was thin, in many instances no attempt was even made at providing assessment tasks. In other instances, where assessment tasks were developed, their level was wholly inappropriate and lacking in cognitive rigour. Also as flagged above, key pedagogic considerations such as scaffolding and building mechanisms for reflection and consolidation are absent.

Particular attention will also have to be paid to English language issues in this group. Choice of words, structuring of sentences, use of correct verb tenses, and even punctuations become essential aspects of this teaching mode and need to be given particular attention when designing ODL materials. The overall structuring of the content and language usage are also important if learners are to follow easily and the materials are to be accessible.

As was suggested before with regards to participants from other countries, the materials to be developed by this group of participants will need to be subjected to rigorous editing if they are to be published as open learning resources.

Training Evaluation

The teachers participating in the training workshop were requested to complete a questionnaire evaluating the success of the training sessions. The training took place over a two week period. The results are presented below.

A total number of 15 respondents answered the questionnaire.

Years of Experience

- Years of teaching experience ranged from 4 to 27, with an average of 15.67 years (Mean=15.67, S.D.= 6.33).
- Years of materials development experience ranged from 0 to 6 with an average of 3.09 years (Mean=3.09, S.D. = 1.78)

Table 1: Zambia - Years of Experience

	Teaching	Materials Development
0 to 5 years experience	1	13
6 to 10 years experience	2	1
11 to 15 years experience	4	0
16 to 20 years experience	5	0
Over 20 years experience	3	0

While the majority of teachers have had many years of teaching experience, it is clear from the results that the teachers have limited experience in materials development.

Satisfaction

Satisfaction with training was mixed. This is shown by the number of respondents that agreed or disagreed with a set of statements about the training.

Table 2: Zambia - Satisfaction with Training Workshop

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1. The workshop was well organized		13	2		
2. The workshop objectives were clearly stated.				6	9
3. The venue/accommodation was good	5	8	2		
4. The facilitators were knowledgeable and helpful			1	1	13
5. The training methodologies were conducive to learning				7	8
6. The workshop was practical and hands-on				4	11
7. The course materials are useful	1			6	8
8. The workshop time was sufficient to cover the content		6	2	5	1
9. The workshop met its stated objectives				12	2

As can be seen, most respondents agreed or strongly agreed with 6 of the 9 statements. Respondents were dissatisfied with:

- The venue/accommodation.
- The sufficiency of the workshop time to cover the objectives.

Expectations

The teachers' expectations of the training that they received were, in general, met. This is illustrated in the table below, which shows the number of respondents that stated that their expectations were met during the training.

Table 3: Zambia - Expectations

	Did you expect the following from the workshop?		Were these expectations met?	
	Yes	No	Yes	No
10. Computer literacy	14	1	14	
11. To learn about Basecamp	9	6	13	
12. To learn about open education resources	13	2	14	
13. To learn about creative common licences	6	9	12	1
14. To learn to develop a course blueprint	10	4	14	
15. To learn and use the instructional design template	13	2	12	1
16. To learn about creating and editing media resources	9	5	10	3

Respondents stated that their expectations had been met in most areas, while some respondents felt that the expectation of learning about creating and editing media resources were not met.

Respondents were requested to provide examples of any expectations that were not met:

- Two or three of the respondents reported that they expected to be provided with laptops during the training, but this did not happen;
- Several respondents indicated dissatisfaction with the accommodation, and that they expected better accommodation to be provided for participants
- One respondent expected more explanations on the template and wanted an example of a completed template given as a handout.
- One respondent remarked that frequent network failures and "old version computer" failures influenced the degree to which his expectations were met.

From the above, and informal comments made by the consultant, it is apparent that logistical problems including accommodation and access to and quality of ICTs provided was problematic.

Anticipated challenges

Respondents were requested to indicate what they expected their greatest challenges to be.

The responses are provided below. These are individual quotes provided by participants.

Area	Anticipated Challenges – Quotes from individual respondents
In the project as a whole	*"Time to develop the materials"* *"Availability of facilities during initial stages of the project"* *"Lack of computers (awaiting provision of computers)"* *"Lack of required skills or knowledge"*
In designing and developing materials	*"Meeting targets and deadlines"* *"Lack of skills"* *"No digital camera to take pictures to accompany text"* *"Producing user-friendly documents"*
In collaboration using the platform	*"Lack of regular connectivity to internet"* *"Inadequate experience to use Basecamp"*

Internet connectivity and time to develop materials emerged as prominent expected challenges for the materials development task, and this highlights the importance of the relevant stakeholders meeting their contractual obligations to the teachers to provide teachers with access to computers, access to the internet and time to develop the materials.

Training and support

Respondents were requested to indicate what types of additional support they would require to develop the materials.

The responses are provided below. These are individual quotes provided by participants.

Area	Additional Support Requested – Quotes from individual respondents
Computer Literacy	*"More computer lessons at ZACODE"* *"Skills in graphics"* *"Excel"* *"Power Point"* *"Designing a web page"* *"Sending attachments"* *"Training in troubleshooting"*
Basecamp	*"More time is needed to practice"* *"Assistance with internet connectivity"* *"More information about sending completed units"* *"Skills in opening learning resources from other countries"*
Working collaboratively to produce OERS	*"Materials and financial constraints"*
Creating and editing media resources for inclusion in materials	*"Further skills required"* *"Small workshops/more training"*
Using the instructional design template	*"Mini workshops /more training"* *"A clear example on how to complete the template"*
Designing and developing course materials	*"Further skills required"*

Other	*"Workplace support"* *"School managers to readily give permission to attend workshops"* *"Commitment by the government to the project"* *"Provision of digital cameras"* *"Textbooks"* *"A higher understanding of computers"* *"Further training on internet exploration"*

The wide array of responses illustrates the need for a strategy to be developed for providing individual and differentiated support.

General comments

Respondents were requested to provide any further additional comments about the training workshop. The responses are provided below:

Area	**Comment – Quotes from individual respondents**
Reflections	*"All logistics should be in place before calling for any further training workshops".* *"Next workshop should be conducted in a different place where the standard is high in terms of food and accommodation."* *"The training workshop was very beneficial in terms of knowledge and skills. This knowledge will be shared with other educators to take this type of education to a higher level".* *"The workshop has been fruitful in the sense that it has equipped me with the information and skills I never had before.* *"For the provision of ODL the government must invest financially to make distance education materials accessible to every one. The creation of centres with education materials and internet facilities would help greatly."*
Further Training	*"The next training should cover in detail other basic computer applications"* *"The time spent on the instructional design template was not adequate as a result we rushed through".*

Overall comment

From the responses received, the respondents seemed to be satisfied with the facilitator and the content of the training – they felt they had been provided with skills. Respondents indicated that, in general, their expectations had been met. However, respondents seemed to be dissatisfied with the organisation and logistics of the workshop, particularly the accommodation. This will need to be improved for the second training workshop.

Furthermore, various requests for training and support were made, illustrating the need for a strategy to be developed for a more individualised approach.

Major anticipated challenges included access to computers and the establishment of regular internet connectivity, which are essential to the materials development task,

highlighting the importance of the open schools meeting these requests as they are contractual obligations.

Conclusions and Recommendations

As can be seen in the data emerging from the training evaluation, the majority of teachers in this group have had many years of teaching experience, but have limited experience in materials development.

This fact is evident in the results of the two practical assessment tasks that the participants were require to complete. Overall, the materials development abilities displayed were very uneven, suggesting the need for differentiated support. This notion is further supported by the range of support requests reflected in the training evaluation survey. Requests for further support range from participants that have identified the need to acquire various computer skills, through to those that want support in the use of a range of specific software applications, to support in a range of materials development skills related to the use of the CoL template and other aspects of ODL materials development.

These findings are consistent with the findings from the other countries in the project. The recommendations that can be made are therefore the same as those made in the initial report, as discussed below.

It is recommended that participants take into account the following points as materials are developed:

- There should be teaching voice, i.e. materials should promote dialogue in the learning process and should motivate students.
- There should be conceptual scaffolding – materials should be presented in logical form and should have building blocks that support learners in acquiring new concepts. It is important that participants be conscious of key pedagogical theories underpinning development of self-study materials; e.g. that new knowledge is built on existing concepts/knowledge within the learner.
- Attention needs to be given in ensuring that the learning pathway is clearly set out.
- The content of the resource should be matched to stated learning outcomes.
- Assessment and assignment tasks should match the relevant target groups.

As indicated in that initial report, and equally relevant for Zambia, it is our view that one of the best ways of enhancing capacity in materials development is to provide high-level detailed feedback on drafts of materials. This feedback should be timely enough and should include consideration of a range of pedagogical issues in addition to the more detailed technical instructional design issues with which most participants are generally more familiar. This includes whether:

- There are clearly laid down aims and learning outcomes for this learning unit/topic.

- The content and teaching approach supports students in achieving the learning outcomes and there is an explicit learning approach/cycle.
- Materials have learner-friendly introductions, linking and summarizing passages that motivate students and that provide coherence of materials – the 'teaching voice' is made explicit in the materials.
- The content of the material is accurate, up-to-date, and relevant to aims and outcomes.
- Materials exhibit congruence between stated outcomes, learning activities and assessment tasks.
- The language level is appropriate for the targeted students.
- Students' context is taken into consideration.
- Materials promote active learning approaches