

UNESCO-WorldSpace Distance Learning Course on 'Community Telecentre Development in Africa'

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"The organization of the project was exceptional. The constant communication between all involved in the project made identifying and solving problems encountered very easy...this type of project required and future projects will require the kind of constant, open and good communication we experienced"
(A Telecentre Manager)

Introduction

This project consisted of a series of six lecture sessions prepared specifically for the project by three lecturers. The lecture sessions were delivered to a number of centres in Africa via WorldSpace technology and the Africa Star satellite. The Centres received simultaneous sound and image on equipment provided to them by UNESCO or obtained by themselves. This system of educational delivery was synchronous in that both the lecturer and the recipients were engaged on the learning task at the same time. One intended advantage of this synchronicity was the possibility of direct interactive communication between lecturer and learner. Distance Education International was given the task of evaluating this project. Available time and resources dictated that the most appropriate methodology was to devise a series of linked questionnaires addressing technical, educational, practical and financial issues as they were experienced by those involved in the project. Accordingly questionnaires were sent to the Lecturers, the National Coordinators, the National Evaluators and the Learning Centres themselves. Responses rates from these four groups were excellent, either 100% or approaching 100% in each case. Responses from each of the four groups is considered separately below. In all, 17 Centres participated in the project of which 16 submitted a questionnaire. Twelve of the responding Centres were sponsored by UNESCO. Centres varied greatly in terms of the number of learners involved from 0 (in one special case) to 100. Of the total of 313 learners participating, 160 were male and 153 were female.

Part 1, Input from the Lecturers

Each of the three lecturers was asked to complete a brief record of their experience and to note both positive and negative aspects of their experience on the project. Each lecturer was asked to prepare two 30 minute lectures and to lead a further 30 minutes of a discussion and question session.

Knowledge about the learners

The lecturers anticipated that their audiences would consist of telecentre managers and telecentre users. The lecturers report that they lacked information about the educational background of the learners and so assumed that they would not be highly qualified technicians or professional people.

"...no detailed information on the learners educational and professional background was available, so I decided to make the lectures as straight-forward and practical as possible"

(A project lecturer)

"The only problem I had was that it was never quite clear to me who exactly the audience would be and the standard of knowledge they had"

(A project lecturer)

Materials preparation

Only one of the three lecturers had any significant experience in preparing materials for use by distance education but all the lecturers had significant and appropriate experience. Although the materials prepared were of high quality and were certainly well received by the learners, one of the lecturers did make a point about preparation and support:

"I think in future there is a need to give some training to lecturers to give them skills in preparing long distance lectures"

(A project lecturer)

Technology

One of the three lecturers had had a good deal of technical experience and encountered no problems with the technology. Another had a problem of radio reception but was able to solve this. The third lecturer made two very illuminating comments:

"I would not have been able to set up the system on my own. I needed technical help from a colleague"

and

"...once the initial problems had been overcome everything worked well and was quite easy to use"

Clear messages are first that not all lecturers start from the same level of technical experience and some will need initial support, and second, that once this support is given, this novel technology is unproblematic.

The teaching sessions

From the point of view of two of the lecturers the first teaching session was not quite satisfactory in that, for them, the CHAT facility was not working well.¹ However, both report that the second sessions were much better in this regard. Another reported that problems were experienced concerning the multi-tasking needed to speak, manage the system and the teaching session all at the same time.

The lecturer's conclusions.

"I had a lot of fun with preparing the lectures and testing them on this innovative format. The model can and should be further updated"

"...this was a very exciting and successful pilot. We need to explore avenues for making it cheaper i.e. [is] using telephone calls to teach affordable for developing countries."

"I thought the project was very promising. With a bit more practice by both lecturers and learners, to make full use of the technical facilities.....it could be used to give regular courses"

Part 2, Input from the National Evaluators

There were six responses to the questionnaires sent to National Evaluators (including two from Uganda and two who responded together from Namibia).

A. Technical Issues

This section of the questionnaire consisted of 10 statements about which the respondents could agree, disagree or have no opinion. A concern about some aspect of the project was not always answered as 'disagree' since the questionnaire had been composed to contain statements in such a form that 'disagree' would be a positive response. Given 6 completed questionnaires, a total of 60 responses were received in this section. On 14 (or 23%) occasions the response was negative and on 1 (or 2%) occasion the response was 'no opinion'. Thus concerning the technical aspects of the project, the National Evaluators made positive comments 75% of the time. It was clear from the responses that experiences differed somewhat between the different countries although all Evaluators agreed that

- (i) The computer link was easy to use and only one dissented from propositions
- (ii) That the radio and computer combination worked well,

¹ The WorldSpace chat server did not function during the first teaching session; one of the lecturers was able to hold the corresponding chat session a few days later, while the other two had to await the second teaching session. [UNESCO note]

- (iii) That the computer link was easy to set up,
- (iv) That each learner could hear the audio well and, importantly,
- (v) That the technology should work well in our country.

In short there was considerable satisfaction with the technical aspects of the project. However, these experts did make several important observations including noting that there was some difficulty experienced by learners when clustering around a single computer and suggesting the use of a projection or sharing device² was needed. In fairness one should observe that these devices were available and in use at some sites.

When asked to identify problems of a technical nature the National Evaluators listed difficulties arising from power failures, radio reception and the weather. Although not strictly a technical issue, one also noted that the synchronous nature of the teaching would be a limiting factor as far as distance education was concerned in their country.

B. Teaching and Learning

Under this section of the questionnaire there were 12 statements to be responded to by the National Evaluators. Therefore there was a total of 72 responses. Of these only 5 were negative although there were 16 responses of 'no opinion'. That is 71% of responses were positive and only 5% negative. National Evaluators were unanimous in their view that the lectures were appealing and that the content of the lectures was useful. The main area of concern was with the proposition that 'this way of learning is more effective than face to face teaching with available local resources'. Two respondents disagreed with the statement and three others had no opinion. One concluding comment here is very helpful and revealing.

"We should not waste our time trying to compare (the teaching) against face-to-face mode of delivery. We go distance simply for its flexibility, to expand access and share resources such as quality professors"
(A National Evaluator)

C. Organization and Administration

This section consisted of 6 statements and, therefore 36 responses. Of these 24 (or 74%) were positive, 5 (or 13%) negative and 5 (or 13%) no opinion. In general communications were very positively commended. Areas of concern included the timeliness of the availability of equipment and technical support. One comment illustrates this:

² The WorldSpace CLASS technology provides for multiple learner terminals connected to a LAN, but this facility was only tried at one experienced Learning Centre. [UNESCO note]

“Since there were problems with the radio signal, it would have been better to have a technician in the country who knew the technology and could ensure that everything was working properly before the pilot”
(A National Evaluator)

It seems clear from the responses of this group that where technical support and knowledge was in place the pilot proceeded very smoothly and further that where this support was less available, there could be problems.

Concluding remarks from National Evaluators

The National Evaluators were asked to give their views on how the project might be improved. Several mentioned the desirability of training and preparation especially where rather novel technologies were involved. The Evaluators, with their academic experience, also pointed to the value of complementary or back-up printed (or other) support for the sort of educational experience in this project. If this had been available the educational experience would have been improved and discontinuities due to technical problems limited in their disruptive effect.

Part 3, Input from the National Coordinators

Four completed questionnaires were received, but since one National Coordinator also replied as a National Evaluator, his responses are tallied in Part 2 (except on the subject of costs which was not covered in the Evaluator questionnaire). There was a certain measure of consistency between them revealed in their responses to the questionnaires.

A. Technical Issues

In this section of the questionnaire there were eleven statements. Given four completed questionnaires, there were 44 responses in total. Of these 12 (27%) identified some concern while the remaining 32 (73%) responses were positive. The National Coordinators were unanimous in their agreement with the following propositions.

- (i) That the computer and radio combination worked well.
- (ii) That the equipment was available in good time.
- (iii) That this technology should work well in our country.

There was some indication that, for some of the learners, seeing and hearing the lectures was difficult although the majority experienced no difficulty here. There was more concern about the ease of use of the computer link and the setting up of the radio link with half the respondents experiencing some difficulty. Finally, a majority of the National Coordinators took the view that the

presence of a local technician was needed in order that the technology should work well.

It seems likely that there is still a level of unfamiliarity with what is, after all, an innovative use of technology. It may well be the case that in projects of this kind there is still a need for technical assistance until the point of self-competency is reached. It is worth repeating the experience of one of the lecturers who certainly needed assistance initially but then rapidly become familiar and competent in the use of the technology.

Comments from the National Coordinators elaborated some of the concerns identified in responses to the statements in the questionnaire. In addition the Coordinators pointed to problems with the supply of electricity, the cost of telephone charges, the lack of internet connectivity and the need for the preparation and training of telecentre staff prior to running the project. One Coordinator suggested that a video conference training session would have been of value.

B. Teaching and Learning

As far as the teaching and learning experience was concerned the National Coordinators were positive in their responses to the questionnaire with only 2 (or 6%) negative responses and 5 (or 15%) no opinion of the 32 total responses to this section of the questionnaire. Both of the negative responses were made in response to the statement that 'this way of learning is more effective than face to face teaching with available local resources' although it should be noted that the other two respondents agreed with the proposition. The National Coordinators were unanimous in their agreement with the propositions,

- (i) That the lectures were appealing to the learners.
- (ii) That the content of the lectures was useful.
- (iii) That this way of learning is more effective than distance education with print materials only.
- (iv) That they would like more courses like this.

In short, it can be said that, as far as the National Coordinators were concerned, this was a very successful exercise in distance learning and the course content produced by the three lecturers was very well received. In comments at the end of this section of the questionnaire, National Coordinators returned to technology and programme interruptions as sources of difficulty impacting directly on the teaching in addition to what they perceive as a 'skills-gap' on the part of some of the telecentre managers. Another interesting and important concern related to the use of the English Language in this project. English may well not be the first language of either lecturers or learners, and learners especially might find a relative unfamiliarity with English to be a barrier between them and the teaching materials. Many of these points are illustrated by a quote from one National Coordinator:

“The mix of audio and video has profound effects on the learner and makes the learner more interested and focused on the content thus enhancing comprehension. However, technology glitches can deter concentration...[and the]... use of English for teaching was a negative in rural areas where most are uncomfortable with English”

(A National Coordinator)

C. Costs

The National Coordinators were asked to give their views on the costs associated with the project. Comparisons between their responses are almost impossible since the responses relate closely to specific (and different) national circumstances. One consistent comment concerned the costs of traveling to telecentres. For some of the Coordinators this involved traveling over considerable distances of several hundred kilometers. Also mentioned as cost burdens were the costs of office activity such as fax, internet service etc. Several National Coordinators made the point that after initial set up costs, projects of this kind will be cheaper in the long run and certainly much cheaper than other forms of education. As an observation, it seems likely that in a project of such a short time scale as was this project it is difficult to get a balanced view of how the costs would work out for an established self sustaining scheme although the National Coordinators were clearly optimistic about the potential of an educational scheme based on this project.

D. Organisation and Administration

In this section of the questionnaire there were 9 statements relating to the organization and administration of the project. There were, therefore, 36 responses in total. Of these, the great majority 24 (or 66%) were positive. There were 8 (or 22%) expressions of concern with no less than three of these relating to the difficulty of communication with the learning centres and two relating to the problems of transporting equipment.

There was unanimous agreement with statements,

- (i) That communication with the National Evaluators was easy and useful.
- (ii) That the equipment was made available in sufficient time.
- (iii) That technical support was available when needed.

In general the organization and administration of the project were found to be good. In comments at the end of the questionnaire, the National Coordinators made several useful suggestions about areas where some improvement in the project could have been made and which, if addressed would greatly contribute to the success of future projects. These suggestions include a very strong proposal that Learning Centre managers need to have more preparation and training to ensure that all technical and practical aspects of the project have been addressed before the start of the teaching programme itself. They also

make the point that the period of testing the equipment before the teaching sessions might usefully have been longer. The National Coordinators rather take the view that the project was rather too compressed in terms of time. This, in turn, led to some difficulties that might be addressed in future projects.

“As the time and logistics could not allow for training of LC supervisors, there was need of training them on delivery. Besides, the timing for the first lesson left little time for making some administrative issues such as promotions and high level invitations..”

(A National Coordinator)

Part 4, input from the Learning Centres

There were 17 Centres participating in the study. Responses were received from 16 of these Centres. One Centre supplied two responses giving complementary perspectives, both of which have been accommodated in the report below. One Centre responded but had no students. However, the response did include many helpful observations and these too have been accommodated below. Between them, the 16 Learning Centres that participated and reported through the questionnaire had over 300 learners. Centres were asked about the background of their learners. The responses indicate a mix of educational background across the whole educational range from primary to graduate. The variety of participants can be further understood by appreciating the range of employment and professions. These included:

Lecturers in tertiary sector	Gender specialists	Teachers
Doctors	Army Officer	Quantity Surveyor
Store Keeper	Social Worker	College
Graduates		
Civil Servants	Librarians	Students
Businessmen	Health Worker	Farmers
Artists	Administrators	Journalist
Community radio staff	Carpenters	Priests
UNESCO staff	Curriculum Specialists	Television Staff
University Lecturers	Revenue Officer	

One can make two obvious points here. First that the project attracted the interest and enthusiasm of an extremely diverse group of learners. Second, that this makes the task of the three lecturers producing teaching materials very difficult.

A. Technical Issues

In this section of the questionnaire there were 11 statements seeking responses. Of the 16 responding Centres, one reported that no learners had participated. Since in this part of the evaluating we are most interested in the

learning experience itself, it was decided to omit the input from that Centre except where there are important lessons to be learnt. Therefore, there was a possible 16 responses to each statement (one of the 15 counted Centres having submitted two separate replies), a total of 176 responses. Of these 130 (74%) were positive, 15 (8.5%) were of no opinion and 31 (17.5%) identified problems. This distribution indicates considerable satisfaction with the technical aspects of the project. Looking at the distribution of comment in more detail, the Centres were unanimous in their view

- (i) That the computer and radio combination worked well. There was only one dissenting comment concerning the following statements,
- (ii) The computer link was easy to set up.
- (iii) The computer link was easy to use.
- (iv) Each learner could hear the audio well.
- (v) This technology should work well in our country.

There were four statements in particular which identified problems for the Learning Centres (numbers of dissenting responses in brackets).

- (i) The technology does not need the presence of a local technician to work well (9).
- (ii) The radio link was easy to set up (8).
- (iii) Each person could see the slides well (3).
- (iv) Each person could see the chat dialogue well (3).

In other words 23 of the 31 critical comments related to only 4 statements. From this input we may conclude that more work is needed relating to the radio link and to the training of Centre staff to use the equipment (or to the provision of more extensive technical support) as well as some practical aspects of the teaching arrangements. A comment which captures much of the concern comes from one of the Centres:

*“...he did his best and the technology eventually worked fine....I would suggest in future to cross-check all Centres ..beforehand. Otherwise the technology is user-friendly and very useful. I would further suggest that we think of using projectors instead of LANBRIDGE to enable many people to see the slides well”
(A Telecentre Manager)*

B. Teaching and Learning

This section of the questionnaire consisted of eight statements. There were, therefore, 128 responses from the Learning Centres. Of these 112 (or 89%) were positive, 4 (or 3%) were negative while the remaining 12 (or 9%) returned ‘no opinion’. This is a considerable endorsement of the teaching and learning aspects of the project. There was near unanimity about the following propositions.

- (i) That the lectures were appealing to the learners (One expressed ‘no opinion’).

- (ii) That the content of the lectures was useful. (One report suggested that the mix of learners was a factor. The content was seen as good by those with extensive education and less good by those without.)
- (iii) That this way of learning is more effective than distance education with print materials only.
- (iv) That I would like more courses like this (One expressed 'no opinion').

The only statement where there was more than one dissenting voice was that 'the learners had much to talk about with each other after the lectures' where two responses disagreed with the proposition.

Centre managers made several comments about teaching and learning. One was that it would have been useful to have had some hard copy or other supporting materials to hand in case of interrupted reception or local misunderstanding. Another consistent theme was the observation that prior training of Centre staff would have made the project much easier and much more satisfactory from the learners' point of view. One final point is that it was noted that to teach in English will be a problem for some whose first language is not English and whose knowledge of English is not well developed.

"My personal impression was that, while it is useful as a teaching aid, it lacks the interactivity of face-to-face classroom atmosphere. I therefore think that an onsite teacher is required to build on the discussion after the lecture".

(A Telecentre Manager)

"All participants were satisfied with the combination of slides with audio and the interactive nature of the sessions. However there were suggestions from some participants of using pointers, highlighters or other tools on the slides to ensure smooth following of slides with the lectures.³ Another suggestion was to disable the chat session until the lecture was completed as questions and comments while the lectures were underway tended to distract participants and lecturers"

(A Telecentre Manager)

C. Costs

Comment on this topic revealed little useful information. Centers were either sponsored, in which case they were provided with necessary equipment, or they were associates by virtue of their possession of appropriate equipment. Very few other costs were noted.

D. Organization and Administration

This section of the questionnaire contained 5 statements. This resulted in 80 responses. Of these 67 (or 83.5%) were positive, 8 (or 10%) were negative and 5 (or 6%) expressed no opinion. Concerns were concentrated on two

³ Such tools exist with the technology employed, but were apparently found to be cumbersome by the lecturers. [UNESCO note]

statements in particular with 4 dissenters from the proposition that technical support was available when needed, and 2 dissenters from a proposition that transporting equipment was not a problem.

There was unanimity about the propositions that,

- (i) Communications with the national and international coordinators of the project were good.
- (ii) Problems were promptly dealt with.

Once again comments made at the end of this section pointed to a need for training opportunities for telecentre staff and the prior testing of systems well in advance of the teaching sessions themselves.

PART 5, Summary.

1. Technical Issues.

Taken together there were 280 recorded responses to statements relating to the technical aspects of this project. Since the distribution of responses between the various groups of respondents is similar, it is reasonable to conflate the data to obtain an overall picture. Of the 280 responses 74% were positive, 20% were negative and 5.5% expressed no opinion. These data indicate a considerable satisfaction with the technical side of the project. Where there were concerns, these largely related to a relative unfamiliarity with the technology, a perceived lack of preparation time and a strong wish for local technical support in the early, preparative stages of the project. It seems clear from looking at the responses as a whole that in those locations where there existed relevant background technical skills, very few problems were experienced.

A strong suggestion is that subsequent projects of this kind should usefully allow for this current disparity of experience. If it should not prove possible to have technical support in each telecentre then a pre-project training programme for existing staff would greatly contribute to the success of subsequent projects.

2. Teaching and Learning.

Relating to this aspect of the evaluation, there were 232 recorded responses to statements on the questionnaire. Comparability across groups allows these data to be conflated. It is clear that the teaching and learning aspects of the project were seen in a very positive light by all participants in the project. No less than 82% of all responses were positive. Only 11, i.e. 4.5% of responses indicated areas of concern while in a further 30 cases (or 13%) no opinion was given. It is also clear both from the responses to the statements and the comments made that the learning experience was seen as both useful and enjoyable. The range of participant backgrounds is also impressive and not, it seems, anticipated at the outset of the project. Of course this wide range of educational level and interest poses considerable problems for teaching staff in the preparation of materials and in deciding on an appropriate style and level of delivery.

A clear suggestion is that in subsequent projects there should be a tighter identification of the proposed learner group in order to allow academic staff to properly anticipate their needs.

Another suggestion is that support materials (text or CD) be in place prior to teaching sessions. Where conditions are difficult or the technology is fragile there is a need for local staff to explain points or to cover for interruptions in reception.

A further suggestion is that the language of delivery may need to change with subject matter and intended audience. Several comments pointed to some variation in learner familiarity with English.

A final suggestion concerns the practical arrangements made to allow all participants full access to the audio and visual aspects of the teaching process. Learning from this project, it is clear that some projection or other sharing technology is needed.

3. Organization and Administration.

There were 152 responses to these parts of the questionnaires. Of these 20 (or 13%) expressed some concern and 14 (or 9%) expressed no opinion. In this section, 77.5% of the responses were positive. (This high figure is ably captured in the comment that begins this evaluation report). As before there was much commonality in response although the National Coordinators were likely to find more difficulty in communications issues than the other groups who were, in turn, occasionally concerned about technical support issues again. Overall though, there was considerable satisfaction with this aspect of the project.

4. The Lecturers.

It is clear from the responses to the teaching sessions and the evident enthusiasm of the participants that the work of the three lecturers who produced teaching materials for this project was extremely well received. From their reports on the process it is clear that the three lecturers differed somewhat in the extent to which they were experienced in producing distance education material. Also there would seem to be some novel aspects to the delivery of teaching in this project. These may have pedagogical implications. The three lecturers were not well informed about the characteristics of the learner population (although it is difficult to see how they would have approached their difficult task had they known of the great variety involved!).

One suggestion is that this issue of student population be more closely controlled in future projects.

One other suggestion is that subsequent projects include an element of support and (if needed) training for teaching staff to help them to address and consider the novel aspects of education at a distance using the novel methodology employed here.

A final comment:

“The learning was made easier because of the delivery of live multimedia content. In learning, the more human sense[s which] are engaged the easier. This technology engages the sense of hearing (the sound added a human touch to the lecture) and watching the slides made learning less abstract. The ability of the learners to interact in real time with both the lecturer and other learners made learning more easy”

(A National Evaluator)