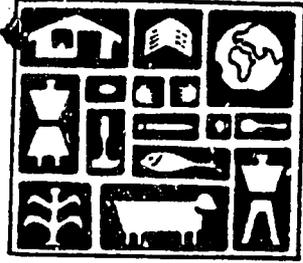


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## ELECTRONIC LEARNING AIDS WITH AN OUT-OF-SCHOOL LEARNING GROUP



Prepared on behalf of the  
Literacy and Numeracy Section  
Lesotho Distance Teaching Centre  
by  
M.T. Makhetha

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Submitted by  
Electronic Aids for Literacy Project  
Center for International Education  
University of Massachusetts  
Amherst

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## Introduction

The Lesotho Distance Teaching Centre (L.D.T.C.) was established by the Government of Lesotho in 1974. One of its main objectives was, and continues to be, to build an infrastructure for offering basic literacy and numeracy education to out-of-school youth and adults, using distance teaching methods. In pursuit of this objective, the L.D.T.C. continues to experiment with various literacy and numeracy delivery systems and learning materials. Literacy and numeracy in Lesotho are dealt with in the local language--Sesotho.

Currently the L.D.T.C. is testing an 'Each-one-teach-one' approach to literacy and numeracy teaching. Without going into the intricacies of the approach, it should be mentioned, in very brief terms, how the system works. Three geographical areas were selected for experimental work. They were chosen by the following criteria: (a) need for literacy and numeracy education, (b) accessibility by road, and (c) willingness of a community to participate in the experiment.

Villages in each of these areas were grouped in clusters of no fewer than three and not more than eight. Each cluster was called a Literacy Learning Post. From each Learning Post one individual, who possessed a minimum of primary school education, was recruited, either by L.D.T.C. in consultation with village leaders and/or prominent villagers or by their communities. These individuals underwent training in the use of L.D.T.C.'s literacy materials and how to run experimental programmes in their Learning Posts. After training, they received the title of Learning Post Administrators (LPA).

Illiterates who participate in the programme must find their own literate helpers, who, in turn, are trained and supervised by the LPA's. Thus, the actual learning/teaching process takes place between the illiterate learners and the helper, while the LPA provides learning materials and helps the helpers along. LPA's are part-time staff of the L.D.T.C.

In each of the three areas there is a Learning Post. Monitor, who lives in the area and is full time staff person of the L.D.T.C. Monitors supervise the LPA's and serve as liaison persons between L.D.T.C. and Learning Posts. They report monthly to the Literacy and Numeracy Section of the L.D.T.C. on process, progress, and problems of Learning Posts in their respective areas.

#### Group

The group chosen for experimentation with the electronic learning aids is typical of a Learning Post. It is a group of 45 learners, 21 helpers and a Learning Post Administrator. The group is from villages located about an hour's drive from L.D.T.C. The majority of the learners are boys, ranging in age from eight to eighteen. Most of them have had at least two years of formal schooling, and about eleven of them had never been to school at all. In this group are six male adults. Four of these are migrant mine labourers in South Africa, one is a local businessman, and the other is a village "councilor". Only three learners are girls. They are about 10-12 years old. The majority of participants in this experiment were fully employed in animal herding. They meet with their helpers in the late afternoon and/or evenings, when their work for the day is done.

One reason why this particular group was chosen is that the LPA speaks good English, the language of the machines. It was not difficult for him to become familiar with operation of the machines within a short time. A retired policeman, living only with his mother, he has lots of time that he could devote to the experiment. He had also proven to be a dedicated and trustworthy person and was willing to participate in the experiment.

#### The Aid Chosen for Experimentation

Since the language of literacy in Lesotho is Sesotho, it was felt that the "Speak and Spell" and "Speak and Read" aids would not be appropriate with this particular group. Though the "Speak and Math" aid also 'speaks' English, it was felt that it would be the appropriate one to test. However, it did necessitate teaching a few English phrases and sentences that are included in the aid's vocabulary, (e.g.--"Wrong, try again" or "That's correct...").

#### Introduction of the Aids to the Group

As already mentioned, most participants in the group are fully engaged in herding animals. This makes it difficult to get them together at one time, which made it hard to introduce them to the aids and the aids to them. Another contributing factor to this problem was the very nature of Learning Posts. Since learners meet with helpers at different times and in small groups, it was not easy to visit each small group at the time when they

would be meeting. This made it impossible to conduct a pre-test of the mathematical abilities of participants, who came from seven different villages.

After several unsuccessful attempts to get the group together, three aids were brought to the LPA's village, and he rounded up about six learners who lived close by. They were shown the aids and how they were operated. They were then allowed to fiddle with them for a while. The main intention was to gain an impression of the audibility and readability of the aids. The impression that followed was that, although what the aid said was not necessarily understood, it could be heard. Characters on the display board could be identified.

Twelve "Speak and Math" aids were left with the Learning Post Monitor, who had previously been exposed to the aids, for distribution to the group.

#### Use of the Aids and Testing

The Learning Posts Monitor and the LPA both monitored the use of the learning aids. All twelve aids were kept at the LPA's house, and twice a week, all learners congregated at his house to use the aids. After each meeting they would set a day and time for the next meeting. Meetings took place twice a week. Although not following a fixed schedule for days and times of meetings, the duration of each meeting averaged two hours. Meetings dealt with single mathematical operations of subtraction, addition, division, and multiplication, at the first and second levels of difficulty built into the aids. Participants worked in groups of four with the LPA and the LPM rotating among the groups of each session.

When the group had used the aids for slightly over a month, they were tested. Thirty learners were interviewed and given a written test. The interview included attitudes to the aids and difficulties encountered in the use of the aids. The written test was one that had been used with the experiment in the schools. It was a test of the four mathematical operations.

This test was given at a time when the group had already started using the aids. So it cannot legitimately be called a pre-test. The purpose of the interview was to find out if and to what extent the aids were being used, and if learners felt they were helpful or were learning something from them. The arithmetic test was given to find out if the learners could work out problems like those contained in the aids.

### Findings

1. All the learners tested were able to operate the learning aid, and when instructed by the interviewer to find some operation like multiplication or addition at a certain level, they could do so. All of them could read the display without fault. They could also follow the aid's instructions and do what was asked. There was sometimes a problem with instructions, and this will be discussed below.

2. All the learners interviewed felt that the time spent with the aids was time valuably spent. They felt the aids were challenging and motivating. They all felt that they were learning a lot from the aids and were improving their ability to manipulate figures in their heads.

Learners also emphatically mentioned that the aids were valuable in that they, to a great extent, substituted for a school teacher, a luxury

they could not afford. However, there was a feeling that although the machines were not very difficult to operate and posed challenging problems, their efficiency would be improved if they were made to speak louder and in the local language.

3. One interesting and unexpected finding was that when word got around about the learning aids in the village, a lot of people were attracted to the programme. Unfortunately, most of them would come only on days when the group met to work with the learning aids. They were allowed to participate, as long as they did not get in the way of enrolled learners. The result was that learner enrollment increased.

4. After the interviews, each learner was handed a test paper and was asked to work through as many of the problems as possible in 20 minutes (one minute per question). None of them completed the whole test, and there seemed to be difficulties with multi-digit numbers, especially when it came to multiplication and division.

It would not be fair at this stage to attribute this apparent lack of ability to manipulate multi-digit figures and division problems to the aids themselves. Rather it should be attributed either to previous learning materials or teaching practices.

### Summary and Conclusions

At the time this report was written the experiment with the out-of-school group was still continuing. So impressions and conclusions at this stage are not necessarily summative.

As already mentioned above, it was not easy to start the experiment when it was intended. The result was that the experiment started in late

November 1983. The testing and interviews were conducted in early January 1984. Thus, the report covers a very short period in the life of the experiment.

At this stage, however, some conclusions can already be safely drawn:

1. The "Speak and Math" electronic learning aid is liked by the out-of-school group, and attitudes towards its use and potential as a learning aid are positive.

2. The "Speak and Math" does not require a high level of proficiency in English. People who do not speak English at all can learn the vocabulary of the aid within a relatively short time.

3. The LPA and LPM who monitored the actual use of the learning aid feel that the aid or others of its kind are potentially very valuable in the teaching of literacy and numeracy. This is because of the portability of the aids and the fact that they, to some extent, substitute for an instructor. The aids can well fill gaps in learning which occur when the learner is not able to meet with the helper.

4. Though the aids seem to work well with the out-of-school group, the feeling was expressed that they would work even better if they could be made to speak the local language. This would also eliminate the need for a closely supervised and monitored learning environment.

5. Finally, it seems that there is potentially a lot of benefit that can be derived from the use of electronic learning aids with out-of-school groups. They do work, and they do teach some skills. The "Speak and Spell" and "Speak and Read" aids were not tested with the out-of-school group because of language. However, if L.D.T.C. had a programme of literacy in English these aids would probably have proven useful for out-of-school

learners as well. Literacy work in English is among the future plans of L.D.T.C., and when this happens, such aids will presumably be valuable. In the meantime, similar aids in Sesotho stand a good chance of being useful.