EVALUATION
AND
FINAL REPORT

LOCAL LANGUAGES LITERACY PROJECT

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Evaluation of the Southern Sudan Local Languages Literacy Project: Final Report

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PREFACE

This report describes, in some detail, a reasonably rigorous investigation of diverse aspects of the Local Languages Literacy Project conducted in Southern Sudan. In numerous areas of the world, educators are faced with the necessity to make important decisions concerning the choice and optimal sequencing of languages for initial literacy training and for content instruction. Southern Sudan is an area of extreme linguistic heterogeneity in which literally dozens of mutually unintelligible languages are spoken. Arabic is the official language of the country although English occupies a special position as a lingua franca in the southern region, the language of the regional government, and the language of communication between Sudan and non-Arabic-speaking states. Therefore, high premium is placed on developing proficiency in both Arabic and English to facilitate educational, occupational and social mobility.

This task although complex is more straightforward in the northern part of the country where Arabic is widely spoken as a mother tongue. In the South, the numerous mutually unintelligible languages are so unrelated to Arabic that one can legitimately raise the question of whether a child initially introduced to literacy training and to content instruction in the home language might, over the long run, benefit more from formal instruction than a counterpart who is "submerged" in Arabic from the beginning of formal schooling. For our purposes, then, a major focus of the project concerned whether one could optimally choose and sequence languages for purposes of initial literacy training and initial content instruction to maximize the educational benefit derived by participating children and thus help them to enhance their potential.

Analogous situations exist and the dilemma is repeated in numerous countries throughout the world -- in the Philippines, in Nigeria, in Cameroon, etc. -- and hence the results of this investigation will interest not only Sudanese educators but the myriad others throughout the world who are also concerned with such questions.

Initially, a very optimistic research agenda was envisioned. There would be stages for needs assessments, planning, materials preparation, teacher training, trial implementation, and revision followed by the careful selection of groups of project and comparison children who would be observed over a period of years during their primary school training and the introduction of revised materials. The plan called for an examination of children from several ethnolinguistic groups from the time they began their formal schooling and were or were not introduced to initial literacy using newly developed vernacular materials to the time when they undertook a transition to Arabic as the medium of instruction and also began the study of English as a second language. Ideally, the children would have been followed through the completion of the primary cycle of their education -- i.e., Primary 6. By then, it would have been possible to look cumulatively at the progress made by the children in the comparison groups and in the project groups. One would be able to examine the children's language abilities, their content subject

mastery, their school retention rates, their performance on the primary school leaving examination and their relative rates of admission to junior secondary school. Other affective information could have been examined as well. Unfortunately, despite the fact that the program began with a flurry of enthusiasm and with a good deal of solid accomplishment in materials development and teacher training, work did not proceed as rapidly as might have been hoped because of various social, economic and political factors. These have affected not only the educational system but also the social fabric of Southern Sudan during the past few years.

The present report, then, is a modest one, but nevertheless in my view an important one. It is important in that it presents a model for consideration by educational researchers in other similar settings -- and there are many throughout the world. It is important also because it raises explicitly the question of the utility and benefit to be derived from local language literacy projects in settings in which there is virtually no support whatsoever outside the formal school context for such literacy once acquired. The project is also important because of the demonstration that such innovation necessitates teamwork involving people with training in anthropology, linguistics, and psychology together with those committed to educational reform. The monograph describes the efforts of such a group. Southern Sudan is a difficult place in which to work, and an even more difficult place in which to conduct "rigorous" research; but the report demonstrates that it is possible to ask meaningful questions in a rigorous fashion in such settings.

G. Richard Tucker, Center for Applied Linguistics

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We also wish to thank the school directors and teachers who participated in this research, all of whom gave use the fullest cooperation in allowing us to observe classes and obtain information on the schools, teachers, and pupils.

Finally, we wish to offer special thanks to the primary school children themselves who provided us with fascinating and useful data and who, we sincerely hope, will ultimately benefit from our work.

1.0 BACKGROUND TO THE USAID PROJECT AND THE CAL EVALUATION

In November 1975 the High Executive Council of the Southern Region of Sudan passed Resolution #273 which laid down basic educational policy as follows:

The Use of Local Languages and of Arabic and English for Education in the Southern Region.

After considering submission of the Regional Minister of Education No. MESR/SR/1. A. 1/5 dated 23-10-75 on the use of the above languages for education in the Southern Region in the light of its Resolution No. 247 dated 29-9-75;

The Hon. H.E.C. in its meeting No. 103 of 8-11-75 resolved that:

a. in the case of rural schools:

i) The Vernacular be used as medium of instruction in the first and second years with Arabic and English introduced orally;

ii) The Vernacular be used as medium of instruction in the third and fourth years while Arabic and English are intensified.

iii) Arabic be the medium of instruction in fifth and sixth years while English continue to be intensified.

In taking this decision the High Executive Council was deliberately going back to the situation which existed before the civil war when primary education began in the local languages. It was the understanding of the High Executive Council that the Addis Ababa Agreement of 1972, which ended the civil war, gave the South the right to use their local languages. That agreement had led to the establishment of a semi-autonomous government in the Southern Region with its own regional ministries, cabinet (High Executive Council) and president of that council.

One of the early policy decisions of the Regional Ministry of Education was to take steps to look into the language situation and the Ministry asked the Summer Institute of Linguistics (SIL) to assist it in this. As a consequence, SIL carried out a language survey in the period October 1974 to May 1975. This survey identified nine languages (Bari, Dinka, Kresh, Lotuho, Moru, Ndogo, Nuer, Shilluk, and Zande) spoken by the largest ethnic groups which could be used as media of instruction in primary schools. As can be seen from Table 1.1 which shows the estimated population of the languages identified in the survey, these nine languages were thought to comprise some 2.7 million speakers. An additional 14 languages (Acholi, Anuak, Baka, Banda, Didinga, Ferroge, Jur Beli, Jur Luo, Kakwa, Kaliko, Madi, Mundu, Murle, and Taposa) were also identified as needing literacy materials so that children could at least learn to read and write in them even though another language might be used for instruction in school. The nine Role A languages, as they were

designated, and the 14 Role B languages were estimated to embrace over three million speakers. The survey also found the rate of bilingualism in the Southern Region to be such that an additional 225,000 speakers in other groups could also be served by materials produced in the Role A and B languages. This would encompass about 3.3 million individuals or 95% of the estimated population of the region. Four more languages (Avukaya, Belanda Bor, Belanda Bviri, and Mabaan) were added to the Role B group in 1980.

Following this survey, the High Executive Council made its decision to use the local languages in the rural schools, i.e., the schools outside the three towns of Juba, Wau, and Malakal, by passing Resolution #273. To implement this decision, the Southern Regional Ministry of Education took three steps. On 15 January 1976, the Ministry signed a cooperative agreement with SIL. this agreement states:

> Whereas the Ministry and the Institute have expressed their desire to cooperate in a project designed to commence formal education in the southern region through initial literacy in the mother tongue followed by graded transfer to the major languages.
> 1. The Institute shall (1) (a) in case of languages where basic linguistic research has already been undertaken train personnel selected by the Ministry to write the necessary teaching materials and test them;

As a second step, later that year the Ministry set up a department of Local Languages Development. This functioned, at first, as a department within the regional Ministry. A year later the department became the Institute of Regional Languages (IRL).

The Ministry's desire to use the local languages as soon as possible led to another step that year. One result of the civil war had been the disappearance of copies of primers in the local languages, which had been used before the disturbances. Wherever copies of old primers in local languages could be found, the Ministry had them reprinted. This proved to be a popular decision. Southerners wanted their languages recognized and in use as quickly as possible and this was seen as the first step in bringing this about.

During 1976 and the first part of 1977, the Ministry of Education and SIL discussed plans for a joint project. Suitable teachers would be trained to write new primers in the nine major languages using the existing orthographies of which the southerners were proud. Any idea of revising the existing orthographies was conceived as likely to arouse controversy and to delay the process of writing new primers. Since the majority of southern officials had learned to read and write using the existing orthographies, this was not surprising.

The respective roles of the Ministry and of SIL were spelled out. The Ministry would provide the teachers and the facilities for the training. SIL would provide staff to give the training and to undertake general supervision of the whole process of writing the new primers, testing them, revising them and teaching teachers in the school system to use them. It was recognized that the high degree of person-to-person contact between the SIL staff and the Ministry of Education personnel which would be necesseary to make the training and the subsequent writing of the materials effective, made it advisable to

Table 1.1

Estimated Population of Regional Language Groups in Southern Sudan in 1978

Language	Population
Bari	226,000
Dinka	1,275,000
Lotuho	132,000
Ndogo	25,000
Moru	68,000
Nuer	525,000
Shilluk	124,000
Zande	236,000
Kresh	16,000
Murle	51,000
Jur Luo	54,000
Jur Beli	22,600
Mundu	10,000
Acholi	27,000
Anuak	14,700
Baka	23,000
Banda	10,200
Didinga	58,000
Ferroge	5,600
Kakwa	40,000
Kaliko	7,000
Madi	18,000
Toposa	138,000
	3,106,100

Note: It is estimated that an additional 225,000 bilingual speakers of other language groups could be served by materials in the above languages bringing the total to 3,331,100. (Source: Operational Grant Proposal to USAID by the Southern Ministry of Education and the Summer Institute of Linguistics.)

work in not more than four languages at any one time. The training was therefore set up as a series of "cycles". Each cycle consisted of:

1. The initial training of the language officers in the basic principles of constructing pre-primers, primers, and post-primers in their own language.

2. The writing of such materials in their own language.

3. The preliminary testing of these materials in two classes in each of the languages.

4. The revision of the materials in the light of the preliminary testing.

5. The publication of a limited trial edition of these materials.

6. The training of teachers to use these materials in the primary schools.

7. Further revision after two or three years' use in the schools.

This whole process was to be carried out in four languages at a time. Naturally, priority was given to the Role A languages. Four languages were therefore chosen from this group for Cycle 1: Bari, Dinka, Lotuho, and Ndogo. The Ministry of Education chose teachers who were designated language officers and were to receive the training and carry out the writing. It was understood that a second cycle of another four Role A languages would start as soon as progress with the first cycle made this possible. There would then be a third cycle which would complete the Role A languages and include some of the Role B languages.

Though these plans had the full support of the Southern Regional Government, there were severe practical problems to be overcome. The Regional Government was destitute of resources. Many buildings had been destroyed during the Civil War. After much searching, a temporary solution was finally found. Some buildings at Palotaka, which were not in use, were made available. In June 1977 the first training began with personnel from the four Role A languages of Bari, Dinka, Lotuho, and Ndogo.

It soon became very evident that the facilities in Palotaka were totally inadequate and the location unsuitable. Palotaka lacked all amenities and there were no supplies in the area. Everything had to be transported from Juba. More seriously, the location was completely isolated from the Ministry of Education. It was essential that the Institute of Regional Languages work closely with those responsible for curriculum development and teacher training. Those activities were being carried out at Maridi, a small town two days journey away. There was no way activities at Palotaka and Maridi could be coordinated. The state of the roads (none were paved), the lack of vehicles and fuel, the lack of any postal or telephone communication, all made communication virtually impossible. It seemed essential for the Institute of Regional Languages to be relocated at Maridi. There it could work alongside the other institutes responsible for the development of primary school education.

The facilities at Maridi were already stretched to the limit and the Institute of Regional Languages could not be housed there without additional

building. Although the Ministry was fully committed to the project, it did not have the resources necessary to construct the additional buildings. What limited funds it did have were more than completely taken up by regular expenses such as staff salaries.

While the immediate pressure came from the lack of facilities where the proposed training could take place, there were other aspects of the project which also needed financing. The original agreement between the Ministry of Education and SIL had stated that while SIL was responsible for the expenses of the overseas personnel, "the Ministry shall be responsible for the expenses of local personnel and the cost of publication of the literacy and transfer materials". At a very early stage of the project it became apparent that although the Ministry would continue to pay the salary of the teachers who were requested to participate in the project, there was no money for essential expenses such as the travel costs to enable the teachers to go to the location where the training was to be carried out, nor was there money for the addiitonal costs they incurred by their being away from their homes. The Ministry did not have funds either for essential equipment, for example, there were no vehicles available for the supervision of the first test classes. Nor was there money to pay for publishing the materials.

This was the situation when the Regional Minstry turned to SIL and requested its assistance. SIL is not a foundation or a funding agency and does not have financial resources for such expenditures. It was apparent to all concerned, however, that without outside funds the project could not continue. When the possibility of an approach being made to the United States Agency for International Development (AID) was raised, the Ministry welcomed this and requested SIL to go ahead as quickly as possible in contacting AID and making a specific proposal.

In March 1978, work began in Juba on drafting a proposal in full consultation with the regional Ministry. Subsequently there were extensive discussions with the AID mission in Khartoum and the AID office in Washington. On 1 July 1979, AID awarded a grant totalling $1,400,000. Of this grant, 50.9% was allocated to the construction of the facilities at Maridi, 14% to equipment, 5.8% to travel, 5.4% to salaries, 2.5% to training, 2.4% to publication costs, 9% to administrative expenses, and 10% to the Center for Applied Linguistics (CAL) for carrying out an evaluation of the project.

All over Africa there has been a growing interest in children beginning to learn to read and write in their own language rather than in the official language through which much of their education takes place. Given the degree of interest in this, it had seemed to me for many years that it would be valuable to make some evaluation of such an approach and if possible to compare it with the alternative, i.e., starting education by learning to read and write in the official language, a second language to the children concerned. Thus, the evaluation of the Sudan project presented itself as a good opportunity to investigate this question empirically.

In a project of this nature, it is essential to build in regular evaluation. The educational materials need to be tested and evaluated. The Sudan project seemed to be an opportunity to combine the immediate needs of a particular project with this broader need to evaluate such a project on a wider basis, trying to assess the effectiveness of a multilingual approach to

primary education. In retrospect, Southern Sudan was far from being a suitable place for such an evaluation and comparison. Too many factors beyond anyone's control kept interfering. The basic infrastructure of communications, regular supplies and adequate resources for teachers and schools was just not there at the time.

As the best way to carry out such an evaluation was discussed, it seemed wise to have the evaluation carried out by a third party, i.e., neither an SIL member nor someone from within Sudan. Since the project could well be of interest in a number of African countries, it was important that the evaluator be a person or body who was both completely independent of the project and who had recognized professional competence so that the evaluation would be credible. CAL was approached and G. Richard Tucker, its director (now president) who already had some knowledge of the Sudan, responded enthusiastically. A sub-contract to undertake the evaluation was made between AID and CAL.

Regarding this evaluation, the final grant grant document stated:

The third level of evaluation is planned as an assessment of the project by an outside observer. The aim is to determine if the project achieves its planned targets, especially of:

-- Upgrading the achievement levels for primary grades one and two to standard norms.

-- Helping students achieve reading and writing skills faster than control groups using existing techniques and materials.

-- Achieving a positive change in individual self-image and in behavior patterns toward development.

Once the grant had been approved, the construction of facilities at Maridi went ahead steadily. The grant also made it possible to transport teachers to Maridi and pay their additional travel allowances. In general, the Ministry of Education carried out its commitment to pay the teachers their basic salaries though even this has been difficult for the Ministry because of continued lack of finances and salaries have usually been in arrears. The grant also made it possible for senior staff to be given additional training both at the University of Juba and outside the country.

As a result of the grant there are educational materials in seven languages, a body of teachers who have been trained to write such materials, a larger body of teachers trained to use them and a large amount of data resulting from the project's evaluation which is presented and discussed in the following chapters. None of this would have been possible without the grant. Even though it is sadly true that the subsequent disruption of life in southern Sudan has delayed the extension of the project to other languages and restricted the use of the materials, it would still seem to be true that the comparatively small investment that the grant represents has been well worthwhile.

John Bendor-Samuel, Summer Institute of Linguistics

2.0 SOCIAL CONTEXT OF THE PROJECT

2.1 INTRODUCTION

SIL anthropologist Robert Hoppe engaged in research in Sudan from March to May of 1983. This chapter presents data which he collected together with observations and discussion by the authors.

This research on the social context of the literacy project developed as a result of recommendations by Cziko and Cowan in their second impact evaluation. They suggested that further research be done among the Zande and Nuer in an attempt to determine the reasons for the "...apparent large degree of variability in their attainment of reading..." (Cziko & Cowan, 1982, p. 41). Such reasons were to be sought within the larger cultural context, including not only the school but also in and outside of the home. The idea for further research was discussed later that year in a CAL-SIL meeting in Washington, D.C., where it was decided that SIL would support an anthropologist to do the research. On April 28, 1982, in a letter to Richard Tucker, Cziko gave a concise statement of his expectations for this research.

> The school context and non-school context data will be collected by an SIL-supported anthropologist who will begin working in the Nasir and Yambio areas approximately three months prior to Ron's {Cowan} visit and continue two months after Ron's departure for a total of approximately six months . . . School context data would consist of information on contextual variables operating within the setting of the school (e.g., teacher experience and style, students' attendance, class size, time devoted to literacy skills). Non-school context data will consist of information on pupils' exposure to reading and writing outside of the school setting, the availability and use of reading materials in the children's homes, parental attitudes toward school and literacy, as well as other factors which appear to be having an influence on the acquisition of literacy skills in the vernacular languages.

Although the Nuer and Zande were to be the focal point of this research, Hoppe felt that information from a few other groups in Southern Sudan would provide a broader understanding of the literacy and educational climate in Southern Sudan, as well as allow more contrasts and comparisons of similar and dissimilar groups. Consequently, he considered adding the Kresh and Dinka to the study The Kresh were to be added because they are an agricultural people like the Zande, but live in the northern part of Southern Sudan and, like the Nuer, were believed to speak more Arabic than most other Southern Sudanese. The Dinka were chosen because of their cultural similarity to the Nuer as a pastoral people and because they were believed to be more advanced educationally than the Nuer. In fact, however, because of unforeseen time constraints Hoppe could do research on only one of these two groups. On the basis of information received after arriving in Sudan indicating the Kresh to be more Arabized and less well known than the Dinka, Hoppe decided to add only the Kresh to the study.

2.2 DESCRIPTION OF RESEARCH

2.2.1 RESEARCH DESIGN

A review of the previous documentation from the local languages literacy project was undertaken prior to formulating research questions. The major questions developed for the survey encompassed the following areas: (a) the importance of indigenous language in Southern Sudan; (b) the degree of correlation between attitudes toward formal education and type of society, e.g., pastoral vs. agrarian, urban vs. rural; (c) parental perceptions of how educational decisions are made and of how formal education might benefit their children; (d) community interest in and preferences for written materials; (e) parental involvement in the decisions affecting formal education; (f) the effect of formal education on the stability of rural communities; (g) factors affecting pupils' attendance and the continuity of formal education; and (h) the extent to which teaching methods in use are compatible with traditional educational patterns.

A questionnaire was developed to collect information on these topics. Five major categories of persons to be interviewed emerged: (a) teacher, (b) student, (c) parent, (d) townsperson and (e) government or school official. Also, six major categories of inquiries were developed: (a) demographics, (b) attitude toward language differences, (c) attitude toward literacy, (d) literacy and the home, (e) literacy and social structure, religion and politics and (f) hindrances to literacy. The questionnaire also included a section for background information on each school visited and on classroom observations.

The first draft of this Southern Sudan Literacy Project Questionnaire was reviewed by eighteen different people. These included SIL members, three Sudanese who were acquainted with the project and the project researchers Cziko and Cowan. The questionnaire was then modified on the basis of suggestions received. Upon arriving in Sudan, Hoppe tried out the questionnaire with language officers and SIL staff before spending six days checking and revising it with speakers of several languages in different cultural settings. Additional information about the schools and the cultural and social context in which they were situated was gathered through many informal discussions in towns, homes and while traveling and by direct observation.

2.2.2 DATA COLLECTION

The data were collected primarily through interviews with subjects who were randomly selected from lists by throwing dice. Teachers, students and officials were selected from lists provided by education officers, headmasters and local administrative officers. Parents chosen were those of the children selected from the lists of students. Either parent, the one willing to be interviewed or the one at home when the visit occurred, was used. Townspeople

were selected randomly as well. After a central place was identified in the town, usually near the marketplace, the dice were thrown to select houses going away from the center in the four cardinal directions. This process was repeated with several throws of the dice until the outskirts of town were reached in all directions.

Hoppe had initially hoped to conduct interviews on an informal basis, directing the conversation along lines that he was pursuing. However, because of the length of the interviews, time constraints and the involvement of a number of different people in the interviewing process, this method proved to be impractical and so a more formalized interviewing technique was used. Local authorities and the constituency with whom Hoppe was working stated that this was culturally acceptable. The interviewer attempted to be sensitive to the interviewees and their responses, noting places where they seemed to be hesitant to answer, or where the information seemed inconsistent with the that already given. Interviews were conducted either in the place of business or the home of the interviewee.

Three attempts were made to visit each designated person or household. If no one was in the office or at home, the researchers proceeded to the next person on the list or the next house, respectively. Little trouble was encountered in getting a random sample among teachers, officials, or townspeople, but since school was not in session and many of the students were difficult to find or were out of town, the interviewers often had to proceed to the next student on their lists in order to get the number of students and parents needed.

During Hoppe's visit to Sudan from March through May of 1983 he spent 14 days in Nasir (Nuer), five days in Mayom (Nuer) and surrounding areas, 23 days in Yambio (Zande) and surrounding area and nine days in Raga (Kresh). The rest of his time was spent traveling, writing up the data collected and getting information from people in Juba and Maridi. Hoppe also spent a week interviewing in Khartoum. Approximately 25% of the interviews were conducted in English without the use of an interpreter. The other 75% were conducted in the local languages of the towns on which Hoppe was working, or in Arabic, either when Arabic was the first language of the person being interviewed or was preferred by the interviewee. Hoppe was assisted by the language officers of IRL, who were well-qualified interpreters, as they were native speakers of the main language where the survey was conducted and also spoke English and Arabic fluently. Hoppe also had the help of additional SIL people while in Yambio and Nasir. His wife assisted him in Nasir and Mayom and for part of the time while in Yambio.

The people in the communities where the interviews were conducted were by and large very friendly and cooperative. This was no doubt due in large part to the presence of the IRL language officers, who were well known and respected. The interviewers were refused three times in Yambio by people who suspected their motives, fearing that they were collecting information that might be used to incriminate people who gave responses which might be construed as critical of the government. Three people also refused to give interviews in Nasir and there were eight instances in which alternative choices had to be made because no one was home at the house selected for an interview, even though it was visited three different times on different days at different times. Sixty-one interviews were conducted in Nasir, 28 in Mayom

and Urach, a small settlement five miles outside of Mayom and in the village of Mankien 25 miles away. Eight interviews were conducted along the road from Urach to Mankien. Eighty-six interviews were conducted in the Yambio area, including Yambio proper, Maingbangaru, a village seven miles northwest of Yambio, Nzara, a village seven miles distant from Maingbangaru, the village of Susa located three miles northwest of Nzara and Singbi, a village four miles southeast of Nzara. A total of 46 interviews was collected in the town of Raga and the small town of Argabanga, two miles northwest of it. In all, 227 people were interviewed including 97 Nuer, 86 Zande and 44 Kresh speakers.

2.3 RESULTS

2.3.1 BACKGROUND DATA

2.3.1.1 Nasir

Nasir is a Nuer-speaking town of about 6000 located on the Sobat River about 150 miles southeast of Malakal and 20 miles from the Ethiopian border. The town is spread out along the southern bank of the river and is approximately two miles long and one-half mile wide at its widest point. The airstrip used to be on the north end of town perpendicular to the river, but a large residential area has grown up on the north side of the airstrip over the past five years. Just south of the airstrip, on the bank of the river is the 'A' Commissioner's house. Along the river heading east, interspersed with residences, are the police headquarters, market, Presbyterian church, hospital, military housing and the military cantonment, respectively. The prison is located a block behind the police headquarters. The town also has a veterinary center, sports field, Lutheran World Service Center, blacksmith, mosque, located next to the market area, police club, Sudan Socialist Union Center and assorted administration buildings. In addition to the old marketplace, run mainly by Arabs, a new market area was started several years ago across from the sports field. Merchants in the new market are mainly Nuers selling local items.

Nasir is linked with Malakal by a secondary road, which is passable only during dry season. During the rainy season steamboats come up the Sobat River to Nasir bringing cargo and passengers. There are also occasional flights from Malakal to Nasir.

The school buildings mentioned in the third impact evaluation were still in use but in very poor repair. The school consisted of three buildings, all of which had mud or mud and mortar walls supporting tin roofs. The first of these, a "U" shaped complex, housed classrooms, the headmaster's room, a storage room and a teacher's room. The other two buildings were one-room structures approximately 80 by 20 feet. Sitting on the dirt floor or stacks of bricks they brought with them, as many as 120 children occupied these one-room schoolhouses.

At the time of Hoppe's visit, he was told that 150 P1 children had occupied one of the classrooms about 20 feet wide and 40 feet in length and 98 P2 students were taught in another room approximately 15 by 30 feet during the previous year. The crowded conditions were caused by the influx of new students due to activities of southern resistance forces, the Anya Nya, in the surrounding towns and countryside. An increase in students was expected in the coming school year.

The interviewers' intention had been not only to survey the town but also several of the cattle camps, but this was not possible, however, due to the activities of the Anya Nya. The police chief, concerned for their safety, would not allow the interviewers to venture beyond the perimeters of the town proper. During the interviewers' stay in Nasir, the Anya Nya made several raids around the town, taking numerous cattle and shooting up a local vehicle. A curfew from 6 p.m. to 6 a.m. was placed on the town; and on several occasions, the interviewers were ordered to return to their house because of Anya Nya activities near the town. They were fortunate, however, to be able to interview people who had recently moved to Nasir from the surrounding countryside.

2.3.1.2 Mayom

Mayom is a rather new small Nuer settlement of about 350 inhabitants that has grown up around the new government center constructed in 1982. It is laid out in a long, narrow band about one mile long by three blocks wide and has a market area with about a dozen shops, a police station and an airstrip located next to the government offices and the mission area. There was no school, but it was hoped that one would open soon. Mayom is connected by car tracks with Mankein 23 miles to the south. About 70 miles to the east on a secondary road lies Bentiu, where a school with grades P1 through P6 and a junior secondary boarding school are located.

The security situation in the Mayom area was somewhat precarious. At first, the "A" Commissioner did not want to allow the interviewers to leave Mayom proper, explaining that the Anya Nya had stolen 90 head of cattle from a Mayom judge the day after the interviewers arrived and that the army was in the process of making a military sweep through the area. While in Mayom, the interviewers visited the village of Urach, a small settlement of about 75 people five miles from Mayom, where they gathered background information and conducted six interviews. They also visited the village of Mankein, which has a population of about 300 and were also able to do six more interviews. On the return trip from Mankein, the interviewers did eight 10-to-15 minute (shortened) interviews, stopping at every sixteenth house (chosen by dice) along the car track.

2.3.1.3 Yambio

Although the main ethnic group located in and around Yambio is the Zande, members from at least 19 other tribes lving there were tallied during the research. Yambio is a town of about 10,000 people, approximately 20 miles from the border of the Central African Republic in the extreme southwest corner of western Equatoria. It is the capital of Western Equatoria and the provincial and district education headquarters. There are numerous other government departments located in Yambio including agriculture, health, wildlife and tourism, communications, forestry, social welfare, police, district prison, commerce, veterinary medicine, Sudan Socialist Union and labor.

In addition to a number of primary schools, two junior secondary schools and a senior secondary school, there is also an agricultural training and experimental center located in Yambio. An airstrip is located next to the agricultural center. Yambio has several grist mills and a large market center. A new mosque was under construction next to the market. The church missionary society of the Anglican Church opened its first station in Zandeland in Yambio in 1913 and the Anglican bishop of western Equatoria now resides in Yambio where they have a large church and primary school on the southwest side of town. There is also a Catholic church located on the west side of town with a resident priest. The Catholics were planning to open a school soon.

In Yambio and the surrounding area, the political and religious atmosphere appeared more relaxed. English was spoken more in Yambio than in any of the other areas visited except Juba, the former regional capital. Also, the local Zande speakers exhibited much pride over the use of Zande in all areas of life, but spoke Arabic when necessary. They demonstrated a definite antagonism toward the fact that Arabic was dominant in the school and a majority of the people expressed a desire to use the vernacular in the schools exclusively for at least the first two years of schooling. People repeatedly asked about getting more material in the vernacular language and especially expressed a desire to have their own history and folklore in the Zande language as part of the school curriculum.

2.3.1.4 Raga

Raga, located in the province of Bahr el Ghazal about 160 miles northwest of the provincial capital and 50 miles from the border of the Central African Republic, is populated by about 4000 inhabitants. It is connected by road with Wau and has an airstrip. The town seems to have two centers, the market and commercial area forming one and the government buildings, including the district police station, education building, prison and hospital forming another. The Catholic church and a mosque are also located in this latter area.

The main vernacular language spoken in the area is Kresh, although the interviewers recorded 11 vernaculars, plus Arabic and English. Other

important vernacular languages in the area are Feroge and Banda. Arabic is more widely spoken in Raga than any of the areas Hoppe visited, except Juba.

There was a greater sense of fear and tension in Raga than in the other areas visited, as evidenced by the fact that people were more secretive about their answers to the interview questions and showed a marked distrust of the central government. People were especially fearful of the government and its policies concerning education, security, and general administration. The interviewer was told that a large number of Kresh were killed by the Arabs during the war, which has fed the antagonism of tribal peoples against what they feel is an attempt by the central government to pressure them into Arabization and Islamization.

2.3.2 QUESTIONNAIRE DATA

2.3.2.1 Language Use and Attitudes

The survey recorded over 50 different vernacular languages, in addition to Arabic, English and several other languages such as French, Bango, Lingal and Amharic spoken in surrounding countries and in Southern Sudan. Ninety-three percent of those interviewed felt most comfortable speaking their own vernacular languages, but because of the heterogeneity of language usage in Southern Sudan, they found it necessary to speak at least one or more additional languages. At least 83% of the people spoke two languages and 56% spoke three or more languages.

If language context is viewed as homogeneous when a single language exists in a given context and heterogeneous when a number of languages are presented, a continuum may be constructed in which language context in the home falls at the homogeneous end of the scale and language context in institutions such as the military fall at the heterogeneous end. In between would fall the market, recreation, town meetings and different types of work other than the military. This continuum is depicted in Table 2.1.

The expectations for language use vary according to context. For example, in the home a single language is normally used, with an additional language(s) used only infrequently. In the military, on the other hand, since a heterogeneous situation exists, a lingua franca is used, in most instances Arabic. In the military heterogeneity exists not so much in language usage but in the number of languages present, which forces the use of the lingua franca. Because the official second language in Southern Sudan is English, the expectation for language usage in most offices is English, although a considerable amount of Arabic and vernacular is also used. In other types of heterogeneous language situations, such as recreation, market, or different types of public meetings, the language is usually selected on the basis of a common language. If a person's mother tongue is a vernacular language, but he also speaks Arabic, English, and/or several other vernacular languages, he will usually speak the language of the individual to whom he is talking. For example, in the market, if a Zande speaker is speaking to another Zande, he

Table 2.1

Percent of Respondents Reporting to Speak Various Languages in Various Contexts

Language	Contexts						
	Home (Homogeneity)	Recreation	Market	Work	Public Meetings	Government Meetings	Military (Heterogeneity)
Vernacular	91%	45%	37%	47%	45%	27%	7%
Arabic	3%	25%	30%	15%	16%	19%	33%
English		1.5%		5%	5%	7%	
Arabic and English		6%	2%	11%	13%	22%	53%
Arabic and Vernacular	3%	5%	16%	4%	3%	5%	
Arabic, English and Vernacular		4%	1.5%	6%	7.5%		7%
Arabic and Other Vernacular		6%	13%	3.5%	3%	3%	
Other	3%	7.5%	0.5%	8.5%	7.5%	17%	

Note: Data collected in response to the question, "What language do you speak in X context?"

will use Zande. If a Zande speaker is speaking to a person who speaks a vernacular he himself does not speak, or Arabic, they will use Arabic, or another common language which they can both use and understand. In public meetings, interpreters are used to communicate with those who do not understand the primary language being used.

Most Southern Sudanese recognize the necessity of having a lingua franca to communicate with one another intertribally. The problem, of course, comes in deciding which language should be used. Some of the larger tribal groups would prefer that their language become the lingua franca. Other Sudanese prefer Arabic and some prefer English. Table 2.2 provides a breakdown of the responses received in each area of the survey to the question: Which language is considered most prestigious? Note that 61 percent of those interviewed chose the local vernacular, while only 16% chose Arabic and 13% chose English. (The other 10%, except for 2% who chose Arabic and English together, chose some combination of two languages which included a vernacular language.) Eighty percent of the Nuer and 51% of the Zande said the vernacular was the most prestigious. Only in Raga did people select Arabic over the vernacular as being the most presitigious. Even after a hundred and thirty years of Arabic and English usage in the Southern Sudan, most people still consider their mother tongue to be most prestigious and very important to them. The vernaculars embody a personal and cultural identity which the people greatly fear will be swallowed up in the compulsory use of a lingua franca. Therefore, although 55 percent felt that it was advantageous for them to learn to read and write Arabic, 95% felt that it was also advantageous for them to learn to read and write their own vernacular languages.

Less positive attitudes were discovered with respect to the use of Arabic in the South. Sixty-nine percent of those interviewed said they felt that the main language being used in the primary schools, i.e., Arabic, hindered the education of the children. Also, 67% of the teachers said that they believed the children would learn better, especially in the first several grades, in the vernacular. Eighteen percent of the teachers suggested a combination of two of the languages while only 15% said that students learn best in Arabic. In the same vein, 44% of the interviewees felt that Arabic was a direct threat to their cultural heritage.

2.3.2.2 Urban-Rural and Agrarian-Pastoral Differences

The second and third impact evaluations reports indicated a superiority in the performance of the Zande children over the Nuer children. Since the Zande are an agriculturally dominated society, while the Nuer are essentially a pastoral tribe, one possible hypothesis was that the differences in educational attainment might be a result of attitudes toward education in these different societies. A second equally obvious hypothesis was that attitudes toward education might differ markedly depending on the location -- rural or urban -- of the student population.

Of those interviewed, 59% came from rural areas and 41% from urban areas. In this study, 'urban' was arbitrarily defined as towns larger than 4000 and 'rural' as anything smaller. The data revealed very little difference between

Table 2.2

Most Prestigious Language[a]

Location	Language			
	Arabic	English	Vernacular	Other
Nasir-Mayom (Nuer)	6% (5)	9% (8)	80% (70)	5% (4)
Yambio (Zande)	12% (10)	21% (18)	51% (43)	16% (14)
Raga (Kresh)	45% (20)	5% (2)	43% (19)	7% (3)

[a]Percent (frequency) of respondents selecting a given language in response to the question "Which language is most prestigious?"

urban and rural felt needs for education. Ninety-eight percent of the urban people said that they feel it is good for everyone to learn to read and write and of the rural people, 94% said that it is good for everyone to read and write. In the same light, among the urban people, 96% said they believe it is good for the community to have a school and 97% of the rural people said the same.

Most people stated that the community leaders are interested in education for their communities. Of the urban population, 61% of the interviewees said that they believe the leaders are interested and of the rural population, 69% of the people said they believe the leaders are interested in the educational concerns of the community. Eighty-nine percent of the urban and 94% of the rural people stated that they believe the community encouraged schooling.

Examining the above data along the lines of agricultural (Zande) and pastoral (Nuer) also shows no marked difference between the two groups. Both groups show a very high interest in education and literacy, as can be seen by Table 2.3.

It was assumed that a difference might exist between the urban and rural pastoral societies with regard to world view and basic values. Time constraints made it impossible to research in depth the world view and values of the Nuer, but in regard to value for and interest in education, Table 2.3 also shows no great difference between urban and rural Nuer emerged when the Nuer of Nasir are compared with the Nuer of Mayom and surrounding region.

2.3.2.3 Reading Interests

By far the greatest interest voiced in the different groups interviewed was for printed materials about tribal histories, folk stories and folklore (see Table 2.4). There were also a number of requests for such topics as hygiene, health, disease, cattle, farming, religious books, and Bible stories. The main request, however, was simply for vernacular material. Ninety-seven percent of the people, when asked if they wanted tribal histories written down, answered in the affirmative.

2.3.2.4 Availability and Control of Education

Seventy-four percent of the people interviewed said there were no adult literacy classes in the community. Most expressed a desire for such adult literacy classes. The people who were aware of an adult literacy class functioning in their community were in most cases referring to the classes held in the local church. None of the government adult literacy classes were functioning at the time and had not been functioning for some time.

Questions such as, "Who decides if there will be a school?" or "Who decides what will be taught in the schools?" were answered by a large variety of statements, a number of them contradictory. One third of the people gave no

Table 2.3

Attitude Toward Education and Literacy[a]

Question	Language			Location	
	Nuer	Zande	Kresh	Nasir	Mayom
Community encourages education?	97%	92%	82%	--	--
Good for community to have a school?	99%	97%	94%	98%	100%
Good for everyone to learn to read and write?	92%	100%	90%	96%	87%

[a]Percent of respondents responding in affirmative to each question.

Table 2.4

Reading Preferences

Type of Book	Frequency[a]
Tribal and folk stories	63
History	52
Hygiene/health/medicine	45
School book of all kinds	41
Primers and readers	35
Farming and agriculture	30
Bible stories and religious books	26

[a]Number of responses in a given classification to the question "What kind of books would you like to read?"

answer to these questions and only one third answered all five questions (two-fifths of those interviewed were either town officials or school teachers). This seems to indicate that the interviewees, for the most part, are not aware of how the school is run and that they are dependent on officials or government authority in order to have a school in their location. In a very real sense, this seems to be true. In all the areas visited, except for Mayom which had no school, the people indicated there was a parent-teacher's association, but in none of the communities was this association actually functioning. The fact that people still view the school as a "foreign" entity accounts for one of the main reasons for the lack of grass roots interaction between the community and the school and between the community and the government, as far as the educational process is concerned. When asked whether the community should seek help for the school apart from the government, 51% of the people answered "Yes" and another 18% said "Yes", as long as it is in cooperation with the government or other outside sources. Only 27% said they did not think help should be sought from the outside.

When asked "Should the government closely control the schools?", 56% indicated that it would be good if the community had some cooperative role in the school. But it was observed that the community took little responsibility for the school. This was seen in the poor attendance records and facilities which were in extremely poor repair. Parents could have improved the buildings, provided benches, food, pencils and notebooks, but they felt it was the government's responsibility to do so. Even in the few self-help schools the only thing that appears to make them different from the government schools is that people in the community are concerned enough to initiate an educational program by building a schoolhouse. Otherwise, the teachers, salaries, materials (as much as are available to any government school) and curriculum administration are all provided by the government. As Michael O'Brien, the administrator of the Lutheran World Service project in Nasir, said, "We must look at the present self-help concept in Southern Sudan not as the finished product but as a system in transition which is heading in the right direction." This divided perception of material provision and curriculum content indicates that the people view government school support from a dual perspective. On the one hand, they expect the government to provide the physical necessities for the children's school while on the other hand they want a part in the decisions of what will be taught in the classroom.

2.3.2.5 Teaching Methods

One of the goals of this research was to determine whether the current teaching methods used in the schools are indigenous to the local area or whether they come down through the educational system. During the time this research was being conducted in Southern Sudan, none of the schools were open. This made actual observation of the teaching methods impossible. However, discussions with a number of the teachers did shed some light on the subject. At present, most of the primary school classes in Southern Sudan are using methods which depend very heavily upon the use of the blackboard as a visual aid, rote memorization, and specific reproduction of what the teacher gives in class, as noted in the first and second impact evaluations. In general, the

student is not taught to think for himself, pursuing problems or situations, but only to reproduce that which the teacher gives. Garvey-Williams in his UNESCO report identified the problems resulting from the teaching methods:

> Learning is made to depend heavily on memorization and teaching leans on oral instruction, making little or no use of visual aids except the blackboard and providing very little training in reasoning and application. (1976, p. 39).

It would appear that traditional methods of education cannot be associated with the concept of "formal" education, since the only type of training that the children habitually receive is of a more practical nature and is usually taught on an individual level within a family context. Among the Zande, when a young boy is brought to a prince's compound for training, he was assigned to an older boy or man responsible for instructing the young boy in all aspects of the prince's court and in methods of warfare as well as other cultural ways.

> The training was in two distinct phases. At the age of perhaps ten, a boy would become assistant to a young man who was already a full member of a company. The boy would look after the physical needs of the youth (Evans-Pritchard, 1971, p. 199), fetching water, tending the fire, bringing the food which the women cooked, bearing his shield when traveling, looking after his few possessions ....
>
> In return for these duties, the young man would be responsible for the boy's early education. At the age of seventeen or eighteen, the boy would become a full member of the company....The patterns of Zande life would suggest that the knowledge and skills which would then be passed own to the young men by their commander would include the following: religion, farming, hunting and fishing, building, language, history, music and dancing. (Atkins, n.d., p. 9)

It is impossible to determine with any certainty how the current methods used in schools evolved. They are no doubt partly a legacy of colonial educational system, partly a reflection of current teaching patterns and partly a reflection of the Arabic system of education. What is noteworthy is that the methodology presently in use does little to encourage the development of individual initiative for learning to learn and that Hoppe interviews with educators substantiates the picture presented in the second and third impact evaluations.

2.3.2.6 Importance of Education

Because of the cultural and religious implications of Arabic in the South, attitudes toward the importance of education were found to be somewhat of a paradox. Although 100% of the Southern Sudanese interviewed expressed the belief that it is good, if not necessary, for the people of the South to have education, 72% expressed doubts concerning the educational process, primarily due to what they see as the Arabization of the South.. In other words, the

people felt that they need an education to be able to direct their own destiny, but they felt that the type of education they were receiving was destroying their cultural identity. Because of this conflict, some parents reportedly choose not to send their children to school.

Similarly, 95% of the people said that it was good for everyone, adults as well as children, to learn to read and write, though some did exclude the elderly and a few excluded girls. Concerning the choice of language with respect to reading and writing, 95% said they would like to read and write in the vernacular and 88% in English while only 44% reported they would like to read and write Arabic. Overall, 69% of the people responded that they felt Arabic was a hindrance to the literacy program. Further evidence of these mixed feelings toward Arabic and the North was found in responses indicating that while 87% of the people felt that the central government in Khartoum encouraged literacy in Arabic, only 33% felt the government encouraged literacy in the vernacular.

2.3.2.7 Consequences of Education

In addition to assessing community feelings on the importance of education, this survey sought to determine what Southern Sudanese thought education would bring them in terms of material benefits. The main reasons given for getting an education were the same ones discovered in the second impact evaluation, to get a job, to become a big person, to help the country and to help one's people. All of these interests basically funnel into one and the same goal -- having some type of job with the government, because the government is the primary employer and because working for the government implies position, prestige and power. This interest is in no way curtailed by the fact that government wages are not very high. Getting a job with the government is the normal expected outcome of the educational process and is in fact considered a worthy aspiration; therefore, this seems to have in no way decreased the interest in education on the part of the children or parents.

The results of the survey indicate that the acquisition of formal education produces an exodus from rural areas. Sixty-four percent of the people said that an educated person does leave home. In actual practice this normally means that in order to get a job the person must be assigned to a job by the government and this could be in any area of Southern Sudan. If he wants to work, the employee must take the assignment wherever it is. Since there are few government positions open in the smaller communities, there are usually not many educated persons available for children to model after, although there usually are a few in the communities. In most of the places the interviewers visited, there were several teachers and town officials. However, the children are continually encouraged by the teachers, by their parents and by the town officials to be educated so that they might become people who can help the country and help their community. According to the interviews, teachers averaged two years in a given geographical location. This continual teacher movement caused a lack of continuity in the school teaching staff and hampered parent-teacher relationships.

2.3.2.8 School Attendance

The data from the interviews indicated that attendance is by and large too low to expect any consistent gains from one year to another. Parents are not always aware of how often children should or do attend school. In answer to the question, How many months should your child go to school each year? Twenty-four percent of those answering did not know. Of those who gave an opinion, 66.9% said nine months. When asked: How many months did your child go to school last year? Twenty-nine percent did not know how many months the children went to school in 1982. Sixty-nine percent (of those who knew) said that their child went to school six months or less in 1982. This indicates that over two-thirds of the people who seemed to know believe the children only went to school two-thirds of the specified time. An interesting point of interpretation here from the perspective of many of the interviewees was that if the children went to school for just a few days out of any given month, that was considered a month of school. They did not add up the days and compare those with a 20-day school month. Instead, if a child went to school two or three days in any given month that was considered a month of school, resulting in high estimates in the number of months the children attended school. A check with the education administrators in Yambio, Raga and Nasir indicated that the children were supposed to attend school 200 to 210 days out of each year during the months of April through December.

Most parents professed to send their children to school every school day, but a look at the attendance records indicated otherwise. The attendance records checked for a nine month period in the 1982 school year showed that about 50% of the children enrolled went to school only one-third of the days school was in session. Approximately one quarter of the children attended between one- and two-thirds of the sessions, the other quarter attended two-thirds or more of the days the school was in session. It should be noted that most attendance was not consecutive, but broken up into periods of a few days to a few weeeks scattered over the nine month period. In the Yambio area, the maximum number of days one school was open in nine months was seventy-six days. Another showed sixty-five days, a third 52 days and a fourth thirty-eight days. In the Nuer area the maximum was eighty-seven days in nine months. The Raga school record showed eighty-one days in session for a nine month period. Of the six primary school attendance records (1982) checked, the schools averaged 67 days of attendance or 33% of the 200 days required school attendance. Forty-three (87 days) was the highest number of days attended and 19% (38 days) was the lowest. This means an average of 25% of the children attended school 45-67 days out of the nine months; 25% attended 22-45 days out of the nine months and the remaining 50% attended less than 22 days in the 1982 school year.

Teacher strikes, food shortages and subsistence activities accounted for much of the lost time. Most students who attended school at all in a given year, even if only for a few weeks, were pushed on to the next class when the following school year began. "Promotion within each level of education primary; junior secondary, senior secondary is automatic from one grade to the next..." (Garvey-Williams 1976:90). Even under ideal conditions, children attending school so infrequently would find it impossible to learn and build knowledge from one lesson to the next.

Another problem which surfaced repeatedly in the interviews concerning attendance was that over 50% of the P1-3 students in all three areas said they went to school hungry. School began at 7:30 or 8 a.m. and was dismissed from 9 to 10 a.m. to allow the children to return home for breakfast, but some students did not return to school after breakfast. This was especially true of those children who had a long distance (two to four miles) to travel to school, but also included many who did not get fed during breakfast hour because the parents were not home or no food was prepared.

One thing that became quite clear in the interviews with the parents was their lack of understanding of the necessity for daily sequential school attendance to facilitate the learning process. The concept of one day's lesson building upon another did not seem to have cultural relevance. The parents seemed to think that the child would at least learn half of the information involved if he went half of the time, whether they went three months straight, or whether they attended sporadically. A further complication became apparent when we checked the parents' answers in the interview against the attendance record at school and against what the children interviewed were saying. Many parents said their children attended school most of the time. The attendance record showed that none of the children attended 100% of the time school was in session, although there were a few who had near perfect attendance records. Almost 50% of the children attended one-third or less of the time the school was in session. (This was less than one eighth the specified time.) Since school was only in session an average of 67 days for P1 and P2 pupils, 50% of them received a scant 22 days of schooling for an entire school year.

When asked about this discrepancy, the parents would either claim ignorance about the matter, or say that sometimes it was necessary for them to send the children to take care of the cattle, protect the cultivated fields, run errands or watch a younger child., On the other hand, when the children were asked, they indicated that they sometimes stayed away from school without their parents' permission or they were required by their parents to attend to various family considerations. But the main reason given for the children missing school was that the teachers were on strike or absent for some other reason. When the parents were asked if they understood why it was necessary for the children to attend school every day, most of them indicated that they did not, except that the teacher said it was necessary, or they gave some alternate answer about the child getting a good education so that he could have a better job; none gave an indication that they understand the mechanics of the educational process and the necessity of building one lesson upon another.

2.4 DISCUSSION

The results of this survey confirm the observations regarding teaching practices currently used in the schools which are recorded in considerable detail in the second and third impact evaluations. Teachers admitted freely that the methodology stresses activities which de-emphasize productive learning. Hence this finding lends support to the recommendations for changes in methodology and materials if any but the smallest percentage of children

(i.e., the most highly self-motivated) attending school are to attain functional literacy in their indigenous languages. In addition to this anticipated result, the anthropological survey produced a more complete picture of the sociological variables which influence the impact of formal education in rural schools. Due to the the restricted regional coverage of the survey, however, caution needs to be exercised in generalizing the results to the entire population of Southern Sudan.

One of the more interesting and totally unexpected results of the survey was the absence of a significant difference in attitude toward education between urban and rural and more particularly, between agrarian and pastoral societies. The data make it appear that education is valued by all segments of society in Southern Sudan, even though parents show an extremely vague idea of what benefits are to accrue from sending their children to school. Similarly, although there is clearly broad support for literacy in the indigenous languages, just how reading and writing might be of immediate practical use in daily life does not seem to be evident to many adults, as is evidenced by the preferences expressed in Table 2.4. A far greater percentage of the people interviewed see literacy as a vehicle primarily for maintaining tribal customs and history than as a means of obtaining knowledge which will improve their standard of living.

These two findings suggest that steps need to be taken to sharpen community perceptions of the practical benefits that can accrue from literacy. It does not seem likely that the initial enthusiasm for the literacy project can be sustained over many years unless all members of the community can see it's value in some aspect of their daily existence. One of the first steps that should be taken is to discover what kinds of traditional activities might benefit from the introduction of reading and writing. The results of Hoppe's study have projected some areas that might be explored in greater detail with a view to establishing the value of reading and writing in rural life.

The survey data suggest that parents would like a greater role in making decisions about school but, at the same time, view the maintenance of formal education as the sole responsibility of the government. The legacy of the colonial administration, which established the concept of formal education as the responsibility of an "outside" or "foreign" group, has been transferred to the national government. Comments generated in the course of interviews indicated that an external organization should have the responsibility for the schools just as they have had in the past, since the community neither has the know-how or resources to run them. The obvious implication here is that the Ministry should be aware of this view and that certain types of programs designed to shift some of the burden of school maintenance, e.g., "self-help" programs will meet with little enthusiasm.

In addition to the basic problem of large numbers of poorly trained teachers, which obviously affects the calibre of instruction pupils received, the survey confirmed something that the educators who participated in the impact evaluations frequently complained of --sporadic attendance by teachers and pupils and frequent interruptions throughout the year (often due to strikes), thereby curtailing the total amount of instruction planned for a year as well as the continuity necessary for learning. Teacher absences are due not only to the fact that pay is so low that primary school teachers find it necessary to supplement their salaries with gardening, building their own

houses and involvement in other subsistence activities, but also because they genuinely want to farm or raise cattle. Many of the teachers interviewed said that they viewed these activities as a regular part of their life and heritage and could not imagine doing without them. As a result of this attitude absences from their western-style job, i.e., teaching, were inevitable and in their opinion quite justified.

The survey revealed a number of attitudinal factors which combined to seriously interrupt and impede the continuity of formal education in Southern Sudan, in particular in the rural areas. These attitudinal barriers result from clash between traditional life style values, to which the Southern Sudanese cling tenaciously and the demands imposed by a western style educational system. This clash is manifested in the behavior of educators, parents, and children. One example is the parents' attitude toward education and their recognition of the need to recruit the largest possible work force to sustain their subsistence economy life-style. Although parents overwhelmingly endorsed the concept of formal education, they also recognized how useful their children could be helping in subsistence pursuits. Consequently, many parents subscribed to governmental educational policies and gave them lip-service until demands were placed upon them, e.g., providing what is necessary for the child to go to school: clothes, regular meals, school materials and actually losing the child from the family workforce. Daily necessity then began to dominate and children missed school frequently since many parents were not able or, at times, not willing, to withstand further economic deprivation. The fact that the schools in their area had poorly trained teachers and no supplies and generally did not live up to their ideal of what a school should be did little to encourage them to sacrifice additional workers by sending their children to school. This problem is compounded by another finding of the survey -- the fact that parents do not comprehend the necessity of continuous attendance. Thus, those parents who do send their children to school often believe that extremely sporadic attendance is acceptable and represents an adequate sacrifice on their part.

Poor attendance was obviously in part due to the same reasons which cause children throughout the world to shun formal education, i.e., lack of interesting activities or challenge provided by the teacher, learning difficulties, etc. But the survey revealed another important cause: a clash between the traditional subsistence schedule and the western education schedule introduced during the colonial era. As many as 50% of these children did not return after the morning breakfast breaks because they lived too far away and their parents were occupied during the school recess and could not prepare food for them. They therefore had to seek food in their compound or in their parents' fields.

Some of the attitudinal conflicts mentioned here can be treated by government intervention, but others may be more difficult to deal with. Many Sudanese educators argue that the reinstitution of the boarding school system at the primary school level would do much to reduce truancy resulting from children having to leave school to find a source of food. Better and regularly paid salaries would doubtless make teaching more attractive and reduce teachers' dependence on outside sources of income. It should also be noted that regional governments have attempted to accommodate pressures which stem from traditonal cultural patterns through the institution of official holidays, such as "planting day" in Western Equatoria province. Whether a

carefully planned and well executed campaign to educate parents about the necessity of insuring that their children attend school "regularly" (a concept which obviously needs to be redefined for many adults) would be successful depends in large part on demonstrating the practical value of education and the activities of the schools to provide it. The survey showed that at the present time neither of these conditions are fulfilled in the eyes of most rural Sudanese. Education is presently sustained through vague promises and hopes that good things may come in the future.

An issue that surfaced time and again in the interviews was the problem of discipline in the schools and at home. Lack of discipline in the schools was usually blamed on the northern Arabic influence in the educational system. Many tribes-people said, "The Northerners are using the schools to steal our children from us." This was heard repeatedly, not only through the interviews, but also while traveling or visiting with people. Often as soon as people heard that an "educational survey" was being conducted, this topic would come up. Parents said the lack of discipline in the schools and the encouragement of students by northern Sudanese Arab or Arab-enculturated teachers to defy the authority structure in the home was at the core of the problem. Southern parents and townspeople said that since the Arabs could not defeat them in the civil war, they were going to do it through control of the educational system and the economy. This conflict spawns a great deal of latent hostility and suspicion between parents in certain areas such as Bahr El Ghazal province and those involved in the educational system and it may be one of the primary reasons why many parents regretted the absence of some organization such as PTA where they could express their views about what goes on in the school.

A surprisingly large number of people interviewed expressed the view that the major problem with education in Southern Sudan is political. They felt that many teachers were politically involved and used the schools as platforms for their political beliefs by indoctrinating the children from P1 through senior secondary school and by involving them in political activities in the later school years. In this regard, money and school materials were said to be given or withheld by the North in accordance with the "cooperation" of groups in the southern provinces. Money and books were available for teaching Arabic and subject matter in Arabic, but were said to be withheld for subject matter in the vernacular and English. As a result, parents and townspeople distrust the educational system, believing it to be a tool for the Arabization of the South.

Because of the conflict, some parents would send their children only to a "vernacular" school and others would not allow them to go to school at all. A large number of parents verbalized their dismay at the increasing loss of language and culture by members of the younger generation. Many feel that this is happening because they believe the North is carefully orchestrating a plan to convert to Islam not only the Southern Sudanese but also black Africans of other nations further south.

Thus, although on the surface there seems to be a real desire for education among old and young alike, there also seems to exist a covert mistrust of education. Many of the Southern Sudanese claim that the Northerners are using the educational process as a medium for converting their children to Islam. They also claim that this process is destroying traditional Sudanese black

African culture, breaking down tribal and family relationships and distorting economic patterns upon which these groups depend. Although Hoppe's study did not delve into this matter in depth to determine the reality of what is happening regarding these claims, the fact that over half of the people expressed these feelings certainly indicates that a problem exists in this area.

A first step in dealing with this problem may be the recognition that political and philosophical differences between the North and the South have spilled over into the educational system. In order for a workable educational system to be developed for Southern Sudan, differences must be appreciated, appropriate programs developed, economic needs shared. As Beshir (1974, p. 11) points out, new educational values for a new future must be hammered out: "The problem today is what new values and attitudes are to be injected into the minds of those enrolled in the schools, colleges and universities and how to do this...." (p. 1). The real hope of Southern Sudan is its people -- so much potential, flexibility and genuine concern. The bright spot is their deep desire for education -- education that they believe can be used to overcome the difficulties of their present situation and the visions they have for their children and country and the hope that one day they will be able to direct the future of their land.

3.0 THE LITERACY MATERIALS

Of the nine Role A languages, five -- Bari, Dinka, Lotuho, Moru and Ndogo -- already had orthographies developed for them by missionaries prior to the Civil War (see Gabjanda & Bell, 1979). The SIL personnel decided against a detailed examination of these orthographies, which might have resulted in possible changes, for two practical reasons. First, the IRL literacy officers assigned to work with them were familiar with the existing orthographies and felt they were adequate. Second, SIL was under considerable pressure from the Southern Regional Ministry of Education to show some progress as soon as possible. It was, therefore, decided to forge ahead developing primers in these languages, which were now designated "Cycle 1" languages. The project commenced in Palotaka in June 1977 and by 1979 trial editions of primers in four of the five Cycle 1 languages (Bari, Dinka, Lotuho, and Ndogo) had been completed, pilot tested in 14 schools, and revised. Work on Moru had had to be postponed because the Sudanese sent to collaborate with the SIL consultants had great difficulty grasping the technology of materials development. The completion date for trial editions of primers in Kresh, Nuer, and Zande, now designated "Cycle 2" languages, was scheduled for late 1980 or early 1981 due to lack of personnel, facilities to house the language officers, and the need for further linguistic analysis. No work could be undertaken on Shilluk due to the unavailability of native speakers. The construction of additional living quarters at Maridi enabled the project to be moved there in 1979 and by 1980 the trial editions of the Cycle 2 primers were almost finished. Some preliminary linguistic research on selected Role B languages (Mundu, Murle, the Jur Beli dialects, Jur Luo and Bongo) was carried out in 1977 and 1978.

A six-year timetable was worked out for the production of trial editions of Cycle 1 and Cycle 2 primers, their field testing and revisions and the training of teachers. By October 1979, primers had been produced in Cycle 1 languages and were being tried out in local schools. Preparation of the Cycle 2 primers began in March 1980 at Maridi. Their testing was to begin in the 1981 school year. Work on the preparation of the English and Arabic bridge materials had just begun in January, 1980, when the CAL consultants made their initial visit. At that time schools were not in session, so the consultants focused on an examination of the Cycle 1 materials and planning future research strategy. The following sections of this chapter contain a description of the methodology used in preparing the Cycle 1 materials, a critique of these materials, recommendations for improvement and other results of a seminar held in Maridi in October 1980 during which various changes to be incorporated in the Cycle 2 primers were agreed upon.

3.1 METHOD

The method used by the SIL group to assemble data and process it in preparation for writing the literacy materials is detailed in the Manual of

Literacy for Preliterate Peoples by the late Sarah C. Gudschinsky (1973). Gudschinsky, an excellent linguist trained in the tradition of Leonard Bloomfield, devoted considerable attention to the subject of literacy. Her approach to the teaching of reading does not draw heavily on any particular method presently in use, rather it is derived primarily from her extensive personal experience in this field. The Manual is intended as a "cook book" which can be applied to produce literacy materials anywhere in the world within a short time and it has guided SIL efforts for many years. Literacy Primers: The Gudschinsky Method in an updated and modified version of of the Gudschinsky system, authored by Ernest W. Lee (1982), an SIL linguist.

The preliminary stages undertaken in the preparation of the primers described to us by the SIL personnel follow the procedure set down in the Manual. As mentioned earlier Sudanese teachers assigned to the literacy project had previously taught the four languages initially selected for concentration -- Bari, Ndogo, Lotuko and Dinka -- using primers which had an orthography based on symbols developed at the Rejaf conference in 1926 at which the famous Africanist, Dietrich Westermann was present. The SIL linguists worked with these teachers, learning as much as they could about the languages and providing them with initial training in the Gudschinsky literacy method. The SIL personnel had the Sudanese teachers write several hundred pages of stories in their languages. The only restriction placed on the content of the stories was that they be typical of the respective cultures. These stories then constituted a corpus, which was the data base for a frequency count made on all morphemes contained therein. The frequency count was arranged in two categories -- content words and "functors" (grammatical morphemes). An additional frequency count for all alphabetic letters was made (Gudschinsky, 1973, p. 55). based on the content words. Then a rough estimate of the most frequent sentence types was made. The SIL linguists then began to coach Sudanese writers in the preparation of the materials. The frequency counts formed the basis for arriving at decisions on the introduction and sequencing of letters, word and functors.

3.2 DESIGN OF THE MATERIALS

The pre-primers, each 40 pages in length, contained exercises to develop the students' ability to hold a pencil and make some of the strokes which are components of the alphabet letters. A few sight words necessary for the introductory lessons in the primer were also taught through pictures. Examples are shown in Appendix 3A.

We were informed that the purpose of the primers was to expose the students to all of the letters of the alphabet "in all of the contexts they occur and to teach all of the basic functors." It is a basic contention of the Gudschinksy method that satisfying these two conditions effectively equips a child to read without hesitation the written form of any speech act, i.e., results in the attainment of functional literacy. In fact a stricter, operational definition of functional literacy for this project would have been that upon completing the primer the student would be able to read all of the stories in the post-primers. The level of proficiency required for this might be greater or less than that attained by Sudanese children who have

completed a similar number of years in schools were Arabic or English is taught.

One or two primers for each language were developed depending on how much material needed to be covered prior to the post-primer. The format was always the same. Three types of lessons follow sequentially: (a) Letter Drills; (b) Functor Drills; (c) Review Lessons. Each lesson contained some connected reading using words introduced earlier in the lesson.

The Letter Drill consisted of five parts. It began by displaying a "key" word, i.e., a content word (a noun or verb) matched with a picture. Then, in boxes, there were five component stages: (a) analysis, which isolated the letter that was to be practiced; (b) synthesis, which was used to focus on the smaller bits within the unit, e.g., a vowel within a consonant-vowel unit; (c) an identification drill, which was supposed to provide the student with an opportunity to see the "sameness" of the new letter and identify it; (d) a contrast drill, which had the purpose of contrasting the new letter with previously studied letters which occur in the same position in the syllable, and (e) a word-building drill, which built words with the same letter studied in the word and previously studied letters. The purpose here was to give the student the opportunity to see the new letter in larger chunks and "to tie it to meaningful units." An example of a Letter Drill is shown in Appendix 3B.

The Functor Drills were composed of three parts (again, separated in boxes): (a) an analysis drill, which isolated the morpheme from the broader frame provided by the sentence (the stated purpose, defined in tagmemic terms, was to provide an example for focusing on the position of the morpheme in its "slot"); (b) an identification drill, which was supposed to provide the opportunity for focusing on the visual shape of the functor; and (c) a contrast drill, which contrasted the function in a sentence frame with a previously learned functor in a sentence which, as near as possible, was otherwise identical. Once again, as was the case with the letter drill, a short stretch of connected discourse, using sentences with familiar words and the new functor, was presented on the opposite page for reading practice. An example of a Functor Drill is shown in Appendix 3C.

The Review Units consisted of three parts: (a) a box in which syllable shapes, which were not always complete morphemes, were contrasted; (b) a list of words previously taught; and (c) a box in which functors were contrasted in sentence frames. Again, a reading passage appeared on the opposite page. Appendix 3D shows an example of a Review Unit.

All teacher's editions of the literacy materials came provided with a simple but effective teacher's guide written in the vernacular that outlined the teaching procedure for each section along with the appropriate page of the pupils' book.

3.3 PROBLEMS WITH THE CYCLE 1 MATERIALS

While in Juba and Maridi during their January 1980 visit, the consultants had the opportunity to inspect all of the Cycle 1 primers with two Sudanese

linguists, Dr. James Dahab Gabjanda and Dr. Ushari Mahmud of the Institute of African and Asian Studies at the University of Khartoum. The SIL linguistic consultants who had supervised the preparation of the Cycle 1 primers, carefully led the consultants through a page-by-page examination of these materials. Two major types of problem areas were discovered.

3.3.1 PROBLEMS WITH ORTHOGRAPHY CONSTRUCTION

The decision to use the original orthographies designed for the Cycle 1 languages led to a number of difficulties since these orthographies often violate an accepted principle of alphabet construction -- that the need to maintain a consistent shape for morphemes should take precedence over the desire to achieve a perfect fit between sounds and symbols. This can be simply illustrated in American English, where a single printed form of the past tense morpheme, -ed, is used in spite of the fact that there are three phonemic shapes, /t/, /d/ and / d/.* The orthographies devised for the Cycle 1 materials often violated this principle by symbolizing too much phonetic detail and representing morphophonemic alternations that are not subject to ambiguity. The following examples illustrate these points.

In Dinka the conjunction "and" is normally pronounced /ku/ and hence was transcribed as ku in sentences like (1):

(1)	Akec	ku	Kon	aci	wel	cop
	(name)	and	(name)	pers./past	guinea-fowl	chase

"Akec and Kon chased the/a guinea fowl"

However, it is frequently written kua in sentences like (2):

(2)	Kon	aket	wel	kua	aweec
	(name)	3rd pers/carrying	guinea-fowl	and	bird

"Kon is carrying (the/a) guinea fowl and (the/a) bird"

The a added to the ku in example (2) represents the Dinka consultant's correct perception of the initial vowel in the word "bird." What has occurred in this case is compensatory lengthening, a phenomenon quite common in many languages. Coming off the /u/, which is realized largely as lip rounding, the speaker begins the articulation of the following, the /a/ of aweec, with the result that the latter is lengthened. This would have occurred with any vowel, it just so happened that all of the words in pages 85 through 91 of the Dinka primer (when it occurs some 23 times) that followed ku began with an a. What the Dinka consultant insisted upon carrying over into their orthography in all of these cases was the extra lengthening of vowel in the following word, hence the extra a is added to the ku in only these instances. Predictably, the spelling always remains ku when the following segment is a constant as in (1). The preservation of the form ku as "and", which is motivated by the principle that orthography should facilitate the extracting of meaning, is very relevant here. It makes no more sense to have two spellings for this morpheme in Dinka than to have two alternative spellings like going and goin in English. In fact, errors of this kind are a violation

of Gudschinsky's fourth principle of transcription -- "the slow speech form should be written rather than the fast speech form (p. 125)."

Less of a problem for learning to read, but nevertheless an inefficient spelling that will eventually have to be corrected in Bari orthography is the rendition of progressive aspect marker. As can be seen from example (3), this morpheme is suffixed to the outer stem.

(3) Past/Completed Aspect Marker	Verb Stem	Progressive Aspect Marker	Gloss
a	tatu	ǰa	was killing
a	joŋ	ga	was carryin
a	lala	ǰa	was washing
a	luŋ	ga	was calling
a	der	ǰa	was cooking

It is perfectly obvious from the forms in (3) that the alternation from a to ga is totally predictable. If the last segment of the verb stem is a velar consonant (/ ŋ/ in the examples) then this initial consonant of that aspect marker will be the velar stop /g/. If it is not a velar consonant, then the progressive aspect marker begins with a palatal /ǰ/. This is an instance of progressive assimilation, where the choice of a palatal or velar consonant is automatically signalled by the preceding segment. As Venezky (1970) and Chomsky (1970) have demonstrated, the correct oral reading will normally be given in cases like this, since the child knows the rules of his language. Gudschinsky, too, suggests that both phonemic forms should be used only in those cases where ambiguity would arise from a morphophonemeic spelling (1973, p. 125). Certainly, no such possibility exists here. It is as unnecessary to symbolize both phonemic manifestations of the initial segment of the progressive aspect marker in Bari as it would be to represent with another letter all cases in English where a velar nasal stop assimilates to a following velar stop, e.g., a ŋchor, si ŋ i ŋ, etc. Hence, a single symbolization, i.e., ja, is perfectly adequate.

An inspection of the Lotuho primer revealed evidence that the orthography designed for this language may pose processing problems for beginning readers. The hypothesized difficulty was attributable to violation of the principle stated earlier -- unnecessary changes in the basic shape of morphemes should be avoided. Lotuho orthography faithfully renders a large number of phonological alternatives which appear to be grammatically rather than phonologically conditioned. Two common changes are the deletion of initial vowels (4a-e) and vowel change plus insertion of epenthetic /h/ segment (4f).

(4) a. iger amana --> iger mana
near (the) field

b. to twa esese --> to twa sese
from (the) pumpkin

c. 1. Omoro amata amoti honyi -->
(name) is smoking pipe his

2. attati Omoro mata amoti honyi

"and then Omoro is smoking his pipe"

d. 1. Bwo Acaha oromo imana honyi -->
and (name) is hoeing in field his
"Acaha is hoeing in his field"

2. Acaha olo romo imana honyi
(name) goes/is going to hoe in field his
"Acaha is going to hoe in his field"

e. eriŋo amoloŋ --> eriŋo moloŋ
meat baboon meat (of) the baboon

f. eriŋo eyaya --> eriŋo hiyaya
meat porcupine porcupine meat

One of the classic studies of how words are stored in memory, Brown and McNeill (1966) produced evidence that the beginnings and ends of words are critical to their recognition and retention. As the examples above show, Lotuho orthography results in frequent alterations of the beginings of words, and indeed, as many as three or four such alternatives may occur in a given sentence. Even though these shape changes may cause no serious problems for skilled readers, it is conceivable that beginning readers might be confused by the trucated forms. The problem we are hypothesizing here is analogous to what might occur if children learning to read English first encountered words in their full form, e.g., other, reader, thinking, etc. and then labor hard to recognize them with the initial consonant or vowel removed, i.e., ther, eader, hinking, etc. Of course the only way to determine if this is a serious impediment in the development of reading skills is through controlled experimentation. But such speculation and testing would have been obviated by giving the morphemes a constant shape and trusting in the native speaker to follow the phonological rules of his language, i.e., make the deletions and vowel changes himself.

The end result of mixing different levels in transcription is that the orthographies devised for the Cycle 1 languages vacillate between the overly phonetic symbolization typical of transitional, learning alphabets like the i.t.a. (international teaching alphabet) and a phonemic representation that is not optimally efficient for adult reading. This compromise orthography does not optimally serve either of the two audiences -- literate adults or beginning readers -- which might wish to make use of it.

A related issue which should probably have been looked at carefully was whether or not some homophonous semantic concepts might not have been more readily identifiable through the selective use of diacritics. Tone is not represented in Ndogo spelling; thus, those morphemes with different meanings distinguished solely by this feature must be processed with care if reading confusions are to be avoided. To cite one example: the letter a represents the copula, e.g., Kiya a no, "Kiya (antelope) is an animal." An alternate pattern A...a is used with adjectives: A niki a no, "the animal is good." But sentences initially, a serves as the passive marker for immediately following verb, e.g., A na no gi, "the animal was killed." The different spoken realizations of the single letter a are apparently distinguished by the tone, but this is not carried over into orthography. Since the primer

contains a large number of morphemes like this, it is easy for a reader to assign an incorrect meaning to a partially processed sentence. For example, note that in (5) and (6), the first two morphemes are indistinguishable in print.

(5) A ku na
Passive marker present/progressive aspect marker shoot
"(It) is being shot"

(6) A ku no
(It) is hide/skin animal
"(It) is the hide of an animal"

There is a good deal of basic research supporting Goodman's (1967) "psycholinguistic guessing game" model of reading, whereby the reader predicts what is likely to occur next in the sentence based on the material already assimilated. Comprehension occurs if the predictions are fulfilled but breaks down whenever unanticipated material crops up. Now it is very clear that, given the absence of tone markings in the Ndogo orthography, a beginning reader might well start processing either of the two sentences shown above with the unintended meaning. If he does not notice the difference between na and no, he may assign a completely incorrect reading to the sentences. If he does notice the difference, he will have to stop, backtrack, and figure out the source of confusion. Beginning readers are notoriously poor at resolving these kinds of ambiguities, frequently becoming totally confused and disoriented when unintentionally misled in this manner.

The possibility of confusions of this type occurring in Ndogo should not by minimized. We found a number of homonymic morphemes in our inspection of the first primer, e.g., mi = (a) "x is/exists", (b) habitual progressive aspect marker, (c) "skin, hide"; se = (a) "outside," (b) "fish"; gi = (a) morpheme indicating completed action, (b) intensifier "very", (c) verb "come"; ta = (a) "with", (b) "and"; ka = (a) "just", (b) relative clause introducer "which/who", (c) "is/are"; ti = (a) "with", (b) "for the sake of" benefactive with taco, (c) "in", (d) "at" (as in "look at" something). Of course not all of these give rise to ambiguities, since some meanings are restricted to the occurrence of that morpheme in a given position in a sentence. But there is sufficient overlap for the possibility for erroneous readings of a given morpheme to justify considering the use of selective tone marking. For example, the use of a diacritic for the passive marker, e.g., ̱ would have effectively naturalized the potential confusion alluded to in examples (5) and (6).

3.3.2 PROBLEMS RELATED TO VOCABULARY CONTROL

A far more serious problem than the infelicities discovered in the Cycle 1 orthographies had to do with the introduction and repetition of new words. The SIL/IRL writing teams had adopted a policy of drastically curtailing the number of new words that could appear in each consecutive lesson. Furthermore each new word was recycled a minimum of five times in five successive lessons

after its initial appearance. We were told that the rationale underlying this policy was that recycling this often promoted word recognition and retention. This word recycling policy had two undersirable effects, the first of which was the occasional creation of unnatural passages, where adjacent sentences had no logical connection. An excellent example of this is found on page 71 of the Ndogo primer which is repeated in its entirety in (7) below.

(7) Nda ce ku iri ka co to.
plural snail pres.-prog. go/crawl around down.

Mu niki ti ndu la, Mu niki a i
tree good for they not, tree good are something

ti nda mu, taco ndu ku o
for plural bird because they pres.-prog. fly

ka co tari. Nda ce o la, ndu
round sky. plural snail fly not, they

ku iri ka to. Nda da mu la.
pres.-prog. go/crawl over down. plural chop wood not.

"Snails crawl around on the ground. Trees are not good for them. Trees are good for birds, because they fly up in the sky. Snails don't fly, they go around on the ground. They don't chop wood."

The final sentence, which is clearly incongruous in light of the preceding context, was attached because the word "chop" needed to be repeated one more time to conform with the constraint on the repetition of new words. There is a growing body of research, e.g., Glenn (1978), Kintsch and Van Dijk (1975), Mandler and Johnson (1977), Stein (1979), Stein and Glenn (1979), which suggests that the word recycling policy may be counterproductive if it results in texts like the above, which distort episodic structure, since comprehension and retention of content appear to be highly dependent on the sturcture of stories.

The constant repetition of a limited number of words also produced a large number of totally predictable sentences. Although there is no evidence that a high degree of vocabulary repetition is optimal for reading, one study by Carterette and Jones (1963) suggests that it may be extremely detrimental. Seeking to determine how much vocabulary repetition is present in reading material that children prefer, these two researchers asked librarians from all over the United States to provide them with a list of those stories most popular with children. This popularity rating was determined according to two criteria: those story books which were taken out most frequently and those stories which children liked to have read in story hours. Three levels of stories were considered in this study: (a) stories written for kindergarten up to the second or third grade; (b) those written for Grades 2 and 3 up to Grade 5, and (c) those written for children from Grades 4 to 6.

The study turned up a number of interesting facts. First, there was little evidence that the length of words was uniform at any of the three levels. Long words and short words seemed to be included regardless of the level.

However, there was a distinct increase in sentence length as grade level increased. Most importantly, however, when Carterette and Jones compared the preferred stories at the first level (kindergarten to grades 2 and 3) with commercial readers designed for these grades, they found the vocabulary repetition rate in the preferred stories to be considerably lower. This would indicate that children who are beginning to read may very well be bored by commercial readers because the rate at which words are recycled in them is so high.

Some of the Cycle 1 materials provide a graphic illustration of this criticism. One Sudanese graduate student who assisted Cziko in the preparation of the Bari literacy tests was sufficiently impressed by the repetition rate of words and sentences in the Bari primer to remark that the book appeared extremely boring to him and might well be perceived as such by the children for whom it was designed. However, the constant repetition of the same vocabulary poses a far greater danger to the development of effective reading skills than was apparently recognized by the SIL staff. In order to determine with reasonable precision just how redundant a Cycle 1 primer could be, Cowan selected one -- the Bari Book 2 -- and did a vocabulary count of the words used in sentences in the first 35 pages (the primer is 75 pages long). Table 3.1 shows the total frequency of the words used in the first 35 pages.

The high frequency counts for the two names can be ignored, since Jada and Poni are the main characters in the stories and hence appear in practically every sentence. But note that only 10 nouns and 5 verbs are used in the 35 pages. An inspection of the noun and verb tallies reveals the extraordinary repetition of vocabulary. Two nouns, tapiŋi (guinea fowl) and kayata (sweet potato) appear almost as many times as the name Jada. Also, two verbs, derja (cook) and nyesu (eat) have extremely high counts, 26 and 27 respectively. (The low counts for lala (wash) and di (say) do not reflect the fact that these two verbs are not introduced into stories until page 29.) Given these two facts, it should be obvious that practically every page of the first half of this book contains one of eight sentences:

a. Poni aderja tapiŋi "Poni is cooking the guinea fowl"

b. Poni aderja kayata "Poni is cooking the sweet potatoes"

c. Poni anyesu tapiŋi "Poni is eating the guinea fowl"

d. Jada anyesu tapiŋi "Jada is eating the guinea fowl"

e. Poni anyesu kayata "Poni is eating the sweet potatoes"

f. Jada anyesu kayata "Jada is eating the sweet potatoes"

g. Poni ko Jada anyesu tapiŋi "Poni and Jada are eating guinea fowl"

h. Poni ko Jada anyesu kayata "Poni and Jada are eating sweet potatoes"

There is considerable research which shows that two factors assist children in decoding words. The first is the overall frequency of the word in the

Table 3.1

Vocabulary Frequency of Bari Book 2, Pages 2-35

Word	Frequency
Nouns	
Jada (name)	39
Poni (name)	56
tapini 'guinea fowl'	33
kayata 'sweet potato'	29
lokore 'meat, food'	9
muri 'dyker, antelope'	4
kima 'millet, grain'	14
koropo 'leaves, beans'	11
tuki 'jug, pot'	9
kolu 'cola nut'	6
rabolo 'banana'	6
Verbs	
tatu 'kill, shoot'	11
derja 'cook'	26
nyesu 'eat'	27
lala 'wash'	2
di 'say'	6
kata ko 'have'	9
Prepositions	
ti 'of'	13
kata (i) 'in/inside, in the place of'	12
Conjunctions	
ko 'and'	26
Adverbs	
dika 'in the morning'	7

language. Children have less trouble with very familiar words. The second factor has to do with the beginning and ends of words. These carry more information than the middle of a word and hence children may make a guess at what a word means based on partial recognition -- i.e., the first few letters, the last, or both the beginning and the ends.

Now, all of the words used in the Bari primer are very familiar. It undoubtedly doesn't take very long before the children realize that one of the 8 versions (a-h) is going to occur on every page. This being the case, they can adopt a strategy which will allow them to guess any sentence with 100% accuracy (and thus perform well in class) by attending to very little information in the print. For (a) through (f), the children have only to look at the first letter of the first and last word to determine the subject (either Poni Jada) and the object (either tapingi kayata). Similarly, by looking at the first two letters of the verb, they can discover whether the subject is cooking or eating.

One cannot escape the conclusion that the policy of recycling new vocabulary five times in five successive lessons carries with it the very real danger that the children are not learning the word-attack skills the letter drills are supposed to teach. Rather, this policy is more likely to promote an unproductive analphabetic strategy -- a kind of trick which will even fool the teacher: "Look at the first two letters of each word and you can tell what the word is." In fact, there was some anecdotal evidence that children who had been exposed to the Cycle 1 materials were not learning to read, but were simply memorizing the contents of the very redundant stories. Wanda Pace, the SIL consultant who helped develop the Ndogo and Dinka materials, stated that in spot tests with Ndogo sentences, the children would seize upon one word, the name of one of the characters in the primer and instead of reading through the actual sentence, would simply make up sentences which were actions that character typically performed in stories they had memorized. Obviously there is no way of determining whether the children are actually learning to read unless they are confronted periodically with passages containing words they have never seen before.

3.3.3 PROOFREADING

The proofreading of the primer passages left much to be desired. We found errors which destroyed the logical development of a prose passage, like the one on page 83 of Lotuho Book 1. In this story, Achaha, one of the main characters in this primer, discovers some porcupine meat that belongs to him at Ihuma's house. Enraged, he draws his knife and Ihuma, obviously frightened by this gesture, runs away to Omoro's field. There Ihuma finds Omoro sitting under his thatched sun shelter eating pumpkin. The final sentence of the story, which caps this entire sequence of events is: attati inyi ifa jyo Omoro. "And then they (both) run away from Omoro." This obviously makes no sense in light of the preceding events and one can easily imagine the consternation of the native speaker when the conclusion is read.

Sometimes the errors were due to the fact that the SIL linguists had not had the opportunity to gain more than a casual command of the language with

which they were working. For example, the exercises on pages 62 and 70 of the Bari primer are designed to teach the students when the orthography signals vowel harmony, but some of the words selected to exemplify the application and absence of this rule are not correctly allocated.

3.4 THE ENGLISH BRIDGE MATERIALS

In those rural schools where books have been available for teaching English in P1, the most widely used text was First Year English for Africa, Part 1 (Speaking) and Part 2 (Reading), by F. G. French. The SIL consultant in charge of English materials felt that this book was unsuitable for the Sudan since it contains references to machine made products and pictures of things unknown to Sudanese children.

Most rural schools have few facilities beyond a blackboard. Many of them are nothing more than open air classrooms with crude benches for the children to sit on. For this reason it was decided that the Level 1 (first year) English materials should be simple and durable enough to be used for several years. The Level 1 materials were to consist of 17 charts with pictures of subjects around which oral lessons will be built. The topics selected for the charts were; (a) greetings, (b) animals, (c) body parts, (d) people, (e) family members, (f) "action" verbs, e.g., sit down, stand up, squat down, cook, eat, drink, (g) foods, (h) more action verbs: walk, run, talk, look at, (i) terms that pertain to the school, (j) household items, (k) the numbers 1 through 6, (l) expressions pertaining to life at home in the house, (m) life at home outside the house, and (n) the numbers 7 through 12. A single chart was to be used for Lessons 15 and 16, the topic being things one sees on the road. Lesson 17 teaches the upper and lower case letters of the English alphabet.

The goals of the first year course were modest -- the child should know about 100 English words and the alphabet. In Maridi the consultants were able to examine the teacher's guide for the Level 1 English materials. It contains two pages of instructions to the teacher concerning general procedures (e.g., always speak English in class), basic considerations for an oral English course, (e.g., provide a good model of spoken English for the students) and helpful hints (e.g., use songs and games to make the instruction interesting). This is followed by a demonstration of the method to be used in teaching English from the charts, which is presented in the form of a sample lesson. Finally, there are lesson plans for all 17 charts and a chart showing the strokes to be used in making the upper and lower case letters of the alphabet. The guide seems to cover all of the important things a teacher should be aware of and it is written in clear, explicit language. Whether it needs to be made more explicit or simpler to be of real benefit is something that we were unable to ascertain since there was no opportunity to speak with English teachers. We were told that the work on the charts was in progress. It was being impeded somewhat by the fact that the SIL expert on ESL was in Maridi while the artist who was illustrating the charts was at the IRL office in Juba.

The SIL consultant was also working on an elementary reader patterned after the popular text used in Kenya, Hallo Children! (The Progressive Peak English Course, Book 1, Oxford University Press). A plan for Level 2 English materials has been completed. The projected lessons will cover possessive pronouns, demonstrative pronouns, plural forms, negation, time concepts, the days of the week, conjunctions, colors, more action verbs, the verb have, the adjectives had, good, up, down, hot, cold, the verb want followed by a noun phase and for/to complement, assorted prepositions, indirect objects with the verb give, teacher expressions such as listen to and talk to, the verbs bring, come, take, the past tense with the verbs open, cook, jump, close, walk, and kick, and the irregular past with the following verbs that undergo suppletion: eat, sit, go, come, bring, and see. Sentence building activities using words on flash cards will be introduced after completion of the aforementioned material. There is a third year reader planned, which is intended to prepare the children for the Primary 4 materials that the Ministry of Education is using.

The SIL person in charge of the English program seemed to be competent, dedicated and enthusiastic. The idea of basing the materials on situations that the child is familiar with was a good one and the projected schedule for completing various phases of the materials development appeared to be realistic.

3.5 RECOMMENDATIONS FOR IMPROVEMENTS

In addition to the problems detailed in Sections 3.3.1 and 3.3.2, examination of the Cycle 1 literacy primers prompted the consultants to make a number of broader recommendations for their modification or revision. It was noted that the format of the Cycle 1 materials gave the superficial impression that the child is learning to read because he is gradually exposed to sound-symbol correspondences and grammatical morphemes. As the child completes each lesson and moves on, a sense of progress is felt. Due to the high repetition of the vocabulary, one might even hypothesize that the child could learn every word in the primer by sight alone. What is likely to happen is that the child is actually being trained to recognize many of the morphemes he will encounter in the post-primer. Of course everything that he retains from the primer will assist him in the decoding act, but it cannot be strictly claimed that this approach is imparting skills which will enable the child to decode new texts composed of elements he has never seen.

A fundamental assumption of reading theory which is supported by considerable empirical research is that the reader extracts information from texts using several sources of available information -- knowledge of meaning, grammar and correspondences between writing and speaking. The reader undoubtedly brings these sources to bear on the decoding task simultaneously, sometimes emphasizing one or the other skill depending on the nature of the task. Most innovative reading methods provide opportunities for showing the child that he may exploit all of these sources. The Cycle 1 materials, in contrast, emphasize only one of these sources, sound-symbol correspondences. It is hard to believe that the Functor Drills do anything more than teach

sight recognition of the grammatical morphemes; they certainly do not teach the child to use his knowledge of the grammar to assist in decoding.

The Cycle 2 materials are deficient in that they provide no opportunity for the child to realize that meaning can be extracted from clues which are present at various levels: (a) partially available visual information within the word as in g__ss_ng w_rds w_th__t v_w_ls; (b) grammatical knowledge (e.g., using knowledge of grammar to recognize that a new word is a noun, verb or adjective, etc. and then making an intelligent guess as to what it may mean based on the rest of the sentence or the preceding sentences, and; (c) meaning (e.g., given the broader context that I am looking at the Nile River, if the next sentence is: "Suddenly I saw a f___ move below the surface" you realize that the possibilities of what that could be are extremely limited). If the primers are to actually train children to read, they must incorporate opportunities for the children to become aware of these kinds of clues. They should also contain passages which are in advance of the children's abilities in order to provide practice in using all three levels of information in decoding.

3.6 THE READING WORKSHOP

The above recommendations for improvements in the literary materials were viewed favorably by John and David Bendor-Samuel (two SIL administrators), and at a meeting held in April, 1980, attended by G. Richard Tucker, Director of CAL, the two CAL consultants and the Bendors-Samuel, it was suggested that Cowan provide a workshop on reading theory and research for SIL/IRL personnel working on the Cycle 2 materials in Maridi. John Bendor-Samuel proposed that the workshop take place sometime after the report of the consultants' first visit (Cowan and Cziko, 1980), had been circulated in Sudan, but soon enough so that any innovations which might come from the workshop could be incorporated into the Cycle 2 materials. It was emphasized that SIL/IRL personnel should not feel obligated to incorporate any such innovations, if this would pose a serious setback to the timetable for the Cycle 2 materials. Two tentative dates were proposed for the first workshop -- August, or late fall, the most acceptable time to be determined through correspondence with the SIL Director of Literacy, Julie Van Dyken and James Dahab Gabjanda, who was to continue as CAL's in-country resource person.

The workshop eventually took place at the IRL Training Center in Maridi in late October of 1980. Due to illness, Dahab Gabjanda was unable to accompany Cowan to the South. While in Juba, Cowan was able to confer with Eluzai Moga Yokwe, a faculty member at the University of Juba who was assisting Cziko in the preparation of reading tests for the Bari children.

Cowan arrived in Maridi on October 20th, 1980 and conferred with Julie Van Dyken. It was decided that the workshop would commence the next day and that only SIL personnel and their IRL counterparts would take part. There were thus twelve participants: eight SIL consultants -- Julie Van Dyken, Jocelyn Clavenger, Wanda Pace, Claudia Scott, Rick Brown, Marian Farquhar, Alice Van Bergen and Rick Sampson -- and four IRL counterparts: Edward B. Mandeson, Vice Principal, IRL; John Baptist Asan, Patrick Ramadan Ladu and Daniel Ladu.

Regrettably, Job Dharuai Malou, the Director of IRL, was not at Maridi during the seminar.

The workshop began with a series of lectures which treated reading theory and aspects of reading research. These were intended to provide a basis for discussing how the literacy materials could be improved. Cowan's intention was to move from a lecture format to a general discussion of the issues raised and then, if time permitted to work-sessions where the participants would attempt to try out suggested innovations using Cycle 2 materials. As it turned out, this was more or less what happened. What follows is an abbreviated summary of the lecture.

3.6.1 CURRENT READING THEORY AND RESEARCH

At present there are three major theoretical approaches to understanding the process of reading. The first of these, usually referred to as the "bottom-up" approach, holds that both in learning to read a first language, as well as in mature reading, there is a unidirectional flow of information, beginning with visual, i.e., graphic input and proceeding through higher-level stages, e.g., translating symbols to sound units (at the level of the phoneme or syllabic units), which are in turn amalgamated into larger units of sounds (words or morphemes) which are recognized as meaningful concepts. Scholars associated with this theoretical view of how reading comprehension takes place are Bloomfield (1942), Bloomfield & Barnhart (1963), Fries (1963), Gibson (1965), and Gough (1972). Methods for teaching reading which take the "bottom-up" view as basic, have been proposed by Bloomfield (1963) and Fries et al.(1965). Their predominant feature is a heavy reliance on drills which seek to inculcate appropriate symbol-sound correspondences for graphemes, often at the expense of meaning. A good example of a basal reader series which embodies the Bloomfield-Fries approach is the Sullivan Associates "Read and Think" Series (1973), published by McGraw-Hill.

The letter-by-letter processing and subsequent amalgamation into meaningful units implied by the "bottom-up" view of reading has been shown to be impossible. Tachistoscopic experiments in perception have demonstrated that although the eye can perceive more than five units, it cannot register a larger number than this. In other words, there is a severe limit to the amount of material which can be input from the sensory store into short-term memory. Obviously reading cannot proceed, given this restriction, if the units to be registered are graphemes or even syllabic units composed of two graphemes. In a language which contains long, polysyllabic words, like Lotuho, the neophite reader will have forgotten what he has read by the time he reaches the end of the word he is trying to "sound out." This explains why children who have been taught to "sound out" using methods like phonics cannot handle longer words and why they simply lose track of the meaning of an entire sentence when they encounter them.

The only solution to this problem, one which permits reading to occur as we know it, is for the reader to input higher level units -- chunks composed of many lower-level units. Miller's (1956) classic article demonstrates graphically that this type of recoding is essential for all types of

processing, especially reading, (and recent research, by McConkie, 1982, has clearly established that the word is the minimal unit perceived by skilled readers). The obvious pedagogical implication is that any method which keeps the learner at the lowest level of processing and does not provide him with opportunities for bringing higher levels of information to bear on the task, runs the risk of teaching him just to "bark out the sounds," but not to learn to read.

The model of reading which envisions the use of larger units of information has been referred to as a "top-down" theory. According to this theory, the reader rarely makes use of an intermediate speech code; rather, he is sensitive to different kinds of "clues" which facilitate chunking. As portions of the printed page are taken in, the reader posits hypotheses about the as yet unprocessed text. Chunking occurs because the reader uses natural properties of language such as redundancy and syntactic structure. Redundancy enables the reader to identify larger stretches of material, even though he need not register all of the individual units of which it is composed, e.g., all of the letters in a word. Hypothesis testing is facilitated by the speaker's knowledge of grammar, which allows him to reduce the number of possible kinds of information which can occur sequentially (Shannon and Weaver, 1949). For example, the probability of a determiner like the a occurring immediately after the in a text is virtually zero. Indeed, the possibility of some words occurring to the exclusion of others increases over stretches of discourse. The top-down theory of reading is most often associated with Goodman (1967). It is similar in many respects to the Stevens-Halle (1967) analysis-by- synthesis model of speech perception. The constructive process proposed by Ryan and Semmel (1967) and Smith's (1971) cue sampling process may be classified at top-down theories of reading.

There is empirical evidence that beginning readers exhibit behavior predicted by the top-down theory of reading. Weber's (1970) oft-cited study of children's oral reading errors indicates that, at the earliest stage of learning to read, children are sensitive to the structural clues of the sentence they are attempting to decode. She found that children's errors which resulted in ungrammatical sentences displayed great similarity to the graphic configuration of the word they did not know. Children who did not correct errors which resulted in ungrammatical sentences were consistently poorer readers. Similar results have been obtained by Neville and Pugh (1976), with different types of cloze tests. They found that poorer readers do not avail themselves of contextual confirmation and frequently "give up" whenever they encounter a word that they do not know. Although comparative studies are rare and far from conclusive, at least one indicates that teaching methodology can affect reading performance. Elder (1966) found that Scottish children who had received more analytic word-attack training than a group of American children, whose training had emphasized trying to obtain meaning as well as decoding, made more errors that changed the meaning of sentences.

The pedagogical implication of studies like these are clear. The methodology used to teach children to read should emphasize that reading is meaningful and should not focus solely on developing the ability to sound out unfamiliar words. The danger of relying too heavily on teaching the child to analyze words may, as Gibson and Levine (1975, p. 238) have put it, cause beginning readers to become "stuck" at the phase of handling only the graphic information..." Good reading materials will contain exercises which call the

learner's attention to the use of different levels of information -- redundancy within the orthographic system, syntactic and semantic information -- in such a way as to help him reduce uncertainty at various points in the text.

Recently reseachers have turned their attention to how the structure of discourse may affect reading comprehension. Scholars such as Rumelhart (1975, 1977) have proposed (the notion of a "story grammar" i.e. specific principles by) which any type of pure passage - descriptions, explanations, jokes, paragraphs - are organized. Rummelhart has argued persuasively that the organization a "grammar" of a text is extremely important for comprehending it and recalling the information contained in it. If this is true, it is quite important for the design of good reading materials, since it would imply that stories which deviate from the story grammar are harder to understand. The research of Kieras (1978) and Thorndyke (1977) demonstrates that adults do have trouble recalling stories which violate a basic canonical form. Kieras present adults with paragraphs, all of which were composed of sentences containing a single preposition. These were scrambled in four different orders and presented to subjects one sentence at a time by a computer. At the end of the presentation, the subjects were required to write down the story as accurately as they could and later to write summaries. The subjects always did better at these tasks when the paragraph had a "classic" organization of topic sentence followed by a series of sentences linked to one another in terms of the information previously supplied. Thorndyke has performed similar experiments with longer stories composed of more than one paragraph and obtained similar results, proving that the internal structure of the story plays a major role in comprehension. Children's sensitivity to story structure and its importance for comprehension and retention regardless of cultural background has been demonstrated by a number of studies: Mandler, Scribner, Cole and Deforest (1979), Mandler and Johnson (1977), Stein (1979), Stein and Glenn (1979) and Nezworsky, Stein and Trabasso (1982).

The pedagogical implication of this research is that connected prose in beginning reading material must, if the purpose is to facilitate the acquisition of reading skills, be governed by conventions of coherence and naturalness. Pedagogical practices that lead to the production of illogically structured sequences of sentences like those described above are to be avoided.

Based on the major points raised in these lectures, Cowan then recommended the following additions and changes in the format of the literacy materials:

1. The Cycle 2 literacy materials contain no provisions for teaching children how to use graphemic, syntactic and semantic clues in reading. Exercises to teach these clues should be developed. Cloze procedures are widely used for this purpose. The workshop participants were provided with a taxonomy of cloze procedures and examples drawn form commercial readers. A few adaptations using Lotuho were also discussed.

2. The policy of recycling new vocabulary, which frequently forces writers to distort what would otherwise be a natural-sounding, coherently structured story and defeats the whole purpose of the letter drills, should be modified.

3. All non-meaningful elements of the existing format should be changed to emphasize that reading is for meaning.

4. In order to create more variety and interest, emphasize that reading is pleasurable and meaningful and provide the necessary reinforcement which will sustain the proficiency gained from the primers, a separate story book should be prepared. This should contain stories about children and the way they interact in the life of their village. The stories will be continuous, running from 6 to 15 pages. Each page would contain an illustration of the events described in the three lines of print on that page. Writers were to carry out simple research -- observing children at play and asking them to talk about what they regularly do and enjoy doing -- to gain material from which stories may be created. Vocabulary control would be relaxed in these stories, which were, in part, intended as a feedback measure for the teacher to check the children's progress. The story book might be prepared in the future at the same time the primers are written. It was hoped that story books might still be written for the Cycle 2 materials. Examples of story books like those envisioned in this recommendation, which were prepared for Hausa, a language spoken in Northern Nigeria, are shown in Appendix 3E.

5. As mentioned by Cowan and Cziko (1980, p.25), the overall justification for functor drills is not clear. In an unpublished manuscript, SIL linguist Ernest Lee implies that the purpose of the functor drills is to facilitate chunking. Unfortunately he is unable to supply any compelling arguments in support of this implication. It was suggested that the functor drills be organized on the basis of semantic criteria rather than on their present syntactic (Tagmemic, "slot-filler") basis. One could devise an organizational schema composed of semantic categories, e.g., aspects, directional, positional morphemes, temporal expressions, etc.

6. In literate societies, children approach their initial instruction in reading with a good deal more pre-reading training than is afforded by the SIL/IRL preprimers. In view of the complete lack of written materials in rural homes, which might provide reinforcement and generate some interest in reading, it was recommended that the existing pre-primers be expanded, the pre-reading instruction be extended and an alphabet book be prepared for each language. Examples of rebus materials used for early pre-reading training in English were presented and the advantages of this approach were discussed.

At this point the reactions of the participants to these recommendations were solicited. The general response was favorable, but it was felt that considerable discussion would be required to determine which recommendations could be implemented and what form this would take. In order to avoid shutting down the groups working on the Cycle 2 primers, it was decided that a smaller group would discuss what the recommendations entailed in terms of format changes and then try them out with Cycle 1 and 2 languages. The discussion group consisted of Julie Van Dyken, Joycelyn Clavenger, Wanda Pace and Claudia Scott. Edward Mandeson was invited to participate but his duties were too pressing to permit this. Cowan was present only to provide additional information and clarification of any points made earlier.

It would be impossible to describe the intense discussions which took place during the next two days. These were admirably led by Julie Van Dyken and sometimes went on well into the night. This approach was to examine in detail

each element of the present lesson format. The members of the group were asked to evaluate the advantages and disadvantages of each element in light of the lectures and their experience as teachers. After two days there was a consensus as to what changes and additions should be made and which of these might be incorporated in the Cycle 2 materials and which would have to be deferred until work on Cycle 3 materials is begun. The following two days were spent trying out the innovations in three languages: Zande (Julie Van Dyken), Nuer (Joycelyn Clavenger) and Ndogo (Wanda Pace). The three SIL members and Cowan then met to analyze problems uncovered in these trials. The next day a meeting of the original group was held, at which Julie Van Dyken reported on the groups conclusions and the innovations which had been tried out in the three languages were demonstrated. This was a long meeting where almost everyone raised a question about some aspect of the innovations or made comments and suggestions for improvements. With the exception of the new version of the functor drill, all of the innovations and changes developed over the past four days were approved. Some of the innovations, because of the work they entail, were relegated to Cycle 3, others were to be incorporated in the Cycle 2 materials.

3.6.2 INNOVATIONS IN THE LITERACY MATERIALS

The following account of the alterations proposed for the design of the literacy materials presumes a knowledge of the types of drills which were in use. For a concise description of these the reader is referred to the subsection Design of the Materials in Cowan and Cziko (1980, pp. 8-10 and appendixes).

3.6.2.1 Cycle 2 Innovations

3.6.2.1.1 THE LETTER DRILLS

In keeping with recommendation 3, Box number 4 of the letter drills, which contrasts syllables that are often meaningless, will contain only meaningful words. This means that sometimes there will not be an even display of four contrasts; however, this was not viewed as a problem. The important point is that the words should contain meaningful examples of the syllables being contrasted. It was also felt that box 3 does not contribute much to the overall teaching procedure (it was essentially the same as box 2), so it was omitted.

A new box 5 would replace the old one. It is intended to provide listening practice. The four words which appear in this box all have the same sound. After the children listen to the teacher pronounce the sound, they read the words together with the teacher. The teacher would then present a few new words with the same sound. All of the drill 5 words may be "sight" words (words that the children have been exposed to) or "built" words (words which contain letters that have been taught). Below each of the words in this box would be pictures. To facilitate reading the words in the earlier units and

reinforce the idea that the symbols on the page have meaning. A sample of a letter drill lesson, devised for lesson 13 of the Nuer primer by Joycelyn Clavenger is shown in Appendix 3F.

3.6.2.1.2 CONTEXT CLUES

In accordance with the first recommendation made above, a new set of exercises was added to provide much needed practice in using the different levels of information in a text that can facilitate comprehension. This innovation, was to appear as a separate page of exercises after the letter drills and before the story, was unanimously endorsed by the workshop participants. In accordance with the results of Weber's (1970) research, it was decided to provide a gradation of difficulty, starting with syntax, which is the clue that children are most attentive to. For lessons 1-25, the context clues would focus on syntax. Examples of Nuer cloze exercises designed for these units by Jocelyn Clavenger are shown below. Notice that the choice of the correct word for the blank is syntactically determined.

ManDɛɛŋ cɛ rɛc _____.

Choices: kal thal yieer

ManDɛɛŋ she fish _____.

Choices: compound cooked river

Units 25-50 would contain items like the one shown. Here the child must choose the most semantically plausible item to complete the sentence. Blanks would now appear in the middle of the sentence as well as at the end.

GuanDɛɛŋ cɛ guec _____ kɛ mac.

Choices: yiɛth may bär

GuanDɛɛŋ giraffe _____ with gun.

Choices: speared fished shot

Lesson 51 and those following would contain cloze items where the alternatives are graphemically similar, but the appropriate choice is syntactically determined. The child would now be forced to pay close attention to both the spelling of the word as well as context features. primer. The following example was devised by Joycelyn Clavinger for Lesson 54 of the Nuer primer.

Jɔk cɛ _____ luaak.
Choices: riŋ röŋ riŋ

Jɔk he _____ to barn.
Choices: meat enough run

Guidelines for preparing cloze items and the teaching procedure for this section which were developed at the seminar are found in Appendix 3G.

It was felt that all of the words taught in this section should, initially, be words the children have been exposed to. From lesson 50 on, the alternatives might be built words. This new section would not replace the existing Word Attack section.

3.6.2.1.3 SUPPLEMENTARY STORY BOOKS

Recommendation 4 was unanimously endorsed. It was decided that the preparation of separate story books for the Cycle 2 languages was possible, but that this could not be undertaken until after the Christmas break. The story books would have a greater emphasis on children's activities and the language in them would contain examples of nonreported, i.e., quoted speech and questions. It was decided that the children should be introduced to the story book upon completion of the revision section of lesson 25 and that they should read a new story with each new revision lesson.

There was considerable discussion regarding the vocabulary control in the story books. A sliding scale was proposed: in lessons 25-5-, 5% of all of the words may be unfamiliar; in lessons 50-75, the percentage may be raised to 7%; in lessons 75-100, 8% and from lesson 100 on, 10% might be permitted. It was finally decided to use the first set of story books as a test to determine what a reasonable figure for each block of lessons would be.

The current teaching procedure for the primers was devised appropriately for the story books. The teacher would tell the students to read the story silently and then questions would be asked about the content of each page. If the students could not answer the questions, the teacher would ask a student to read aloud as much of the first sentence as he can. (The teacher would first refer to the picture to set the scene.) The teacher would encourage the student to use the syntactic and semantic clues available to decipher any words he is having problems with. After the entire story has been worked through in this manner, the teacher would read the story aloud. Then the teacher would read each sentence. Individual reading aloud would follow. It was suggested that the class might be split into two groups, one reading the primer and the other the story book.

One of the most valuable suggestions made at the workshops concerned the use of the story books to achieve a double impact on the literary problem. Several participants noted that students will often keep the primers at the end of the school year, even at the risk of a fine. In areas where this occurs, adults have been seen attempting to learn to read from the primers. It was suggested that if the Ministry could be encouraged to produce these new story books cheaply enough so that the parents might purchase them at the end of the year for a nominal fee, two benefits might accrue. First, the reading skills acquired during the school year would not deteriorate quite as rapidly over the long semester breaks (4 months) because the children would have at least something to read. Secondly, the parents might be stimulated to learn something from these books.

3.6.2.1.4 ALPHABET BOOKS

In keeping with recommendation 6, the preparation of an alphabet book was

approved. The group felt that this was a relatively easy task and would produce a greater familiarity with letters which, in turn, might improve the effectiveness of the letter drills.

3.6.2.2 Cycle 3 Innovations

3.6.2.2.1 FUNCTOR DRILLS

The functor drills turned out to be the most controversial subject at the workshop. There was considerable debate as to their value. About the only thing everyone agreed on was that selection of functors to be contrasted should be based on semantic criteria. Cowan argued for a new format which provided for four sentences only one or two of which matched a picture and provided examples of how this was done in commercial readers. When Wanda Pace agreed to try out this approach using Ndogo, she discovered two problems. Picturable contrasts like the one shown in Figure 5.1, worked fine and permitted the teaching of more than on functor per lesson. The question was raised: what does one do when the contrasts are not picturable? And the answer "teach them without pictures" did not satisfy the group.

Another problem was the obvious impossibility of having one procedure for both contrasts with pictures and those without. After considerable discussion, it was decided to proceed with a modification of the present format proposed by Rick Brown. This is described by him in detail with a rationale for all elements and proposed procedures in Appendix 3H.

3.6.2.2.2 REVIEW

The review lesson was changed so that all letters, words and functors selected for review would appear in sentences. The rationale for this change is rooted in recommendation 3: that all exercises should emphasize that reading is for meaning. A planned match of pictures to sentences was devised by Julie Van Dyken. This should be effective for reviewing letters and words, but it will not permit the review of grammar points which are not picturable. This was, however, not considered to be a serious drawback. The format developed by Julie was to be considered tentative and might undergo changes when tested in Cycle 3. An example of the new revision lesson and instructions for writing and teaching a lesson are found in Appendix 3I.

3.6.2.2.3 UNDERDIFFERENTIATION DRILL

A new type of drill being tried out is the underdifferentiation drill, which is supposed to provide the child with practice in differentiating sounds. Cowan was given a sketch of what it looks like. The one thing that struck Cowan about the drill was that it contained no provision for testing whether the children could actually perceive the differences that had been practiced. He therefore suggested that some sentences which contained words that have the sounds be added as a test and that a procedure be devised where the teacher determines if the children have indeed mastered the distinctions.

3.6.2.2.4 READING PASSAGES

Rick Brown suggested that at some point the reading passages should have the questions which are normally asked orally printed on the same page as the passage, so that the children may gain practice reading questions. This is in fact the approach taken in most commercial English readers. However, due to time limitations this proposal was never discussed.

3.7 CYCLE 2 ORTHOGRAPHIES

Cowan was only able to examine the Kresh orthography in detail and get some feeling for the writing system devised for Nuer. Rick Brown, who was supervising the preparation of the Kresh material, argued that tone must be marked, since many words are distinguished by this feature alone. Cowan could not determine whether the five tone levels posited by Rick Brown were phonemic, but noted that the practice of marking all tones presented yet another learning task for a child. Not a great deal of data exists on how much longer it takes to learn a language where tone must be marked. The only case that comes to mind is Thai and this is a slightly specious comparison, since that language has an overly complex system which uses consonants and diacritics to indicate tone patterns. Cowan felt that Kresh would undoubtedly be harder to learn because the child must attend to many diacritics in addition to the alphabet symbols.

The general SIL approach to devising orthographies involves using diacritic marks rather than indirect symbolization and this naturally creates the additional learning problem referred to. For example, instead of signifying breathy vowels in Nuer with an h, underlining, a mark that is easily missed in reading, was chosen. Cowan felt that a lecture series on the history and principles of orthography construction would be useful since very little useful guidance is provided in the Gudchinsky (1973) Manual.

3.8 THE ARABIC MATERIALS

Rick Brown described in detail the oral/aural Arabic program and the Arabic reading material he was developing for the primary schools.

During the first year and a half that the children were learning to read in the vernacular, they were to receive instruction in spoken Arabic. The rationale for this was that the students must learn to speak the language before they can learn to read it. But Rick Brown also claimed that tests conducted in Juba (there was some vagueness about who had done the testing and what tests were used) had shown that many Sudanese have trouble distinguishing sounds which have distinctly different representations in Arabic, e.g., س /šīn/ and ش /sīn/. It was assumed that this would seriously affect their ability to read and hence the oral/aural training should address this problem.

The oral/aural program Brown was devising spanned 50 weeks and employed several kinds of drills: (a) total physical response, (b) same-different discrimination drills, (c) "oddball" drills (which of the three or four sounds is different?) and (d) production drills where the students were to be asked to make a sound which a certain animal makes, or some other sound in their environment similar to an Arabic letter. For example, they might be told to make a sound like "gargling" in preparation for learning the pharyngeal ع /ʕain/.

Learning to speak Arabic was to begin with total physical response drills where the children do what is said in Arabic. Later, production drills would be introduced as an extension of this. Children would then respond to questions such as: "Where did you put the pencil?" Conversational role-playing and experience charts would be used to generate conversation. The teacher might tell stories with the help of the chart and then ask questions about the story or have the children retell the entire story. It was intended that the children become familiar with the range of politeness formulas which are mandatory in Arabic but absent from or lacking equivalents in Sudanese languages.

The reading program began with prereading work: sam different drills like those in the vernacular primers and entire words arrayed in triplets. The first lesson of the primer has two sight words displayed next to two pictures, e.g. a name, John, and the word chicken. Below the pairs of words and pictures was a picture of John carrying a chicken. On the opposite page was the sentence: "John is carrying a chicken." The next lesson distinguished the phrase "to the market" from the word "market." This contrast was set off in a box like a typical functor drill. The teacher would point out the difference between the phrase and the word in terms of the letters used. On the next page the sentence "John is carrying the chicken to the market" would appear. The lessons proceeded this way until a few sight words have been taught. In Lesson 7, the distinction market vs. the market, was taught; this introduces a single letter change which affects the shape of the word.

For the first ten lessons, there was a high rate of repetition so that the sight words are firmly established. In Lesson 10, the first vowel- letter sequence was introduced: د /de/ vs. ر /re/. Lessons 12 and 13 were revision lessons and lesson 14 began the first real letter contrast: د /dā/ vs. ر /rā/. This was done using a format very similar to the letter drills in the current vernacular materials.

Cowan felt that the Arabic program showed considerable promise. Rick Brown obviously knew the language well and he had produced a syllabus composed of often original and creative exercises which were blended with conventional teaching techniques. With careful monitoring, the program would probably be adequate to the task. Cowan had only two suggestions. First, he felt that it might be wise to teach the students all of the letters before they begin the sight word lessons. Recognizing Arabic letters and how they are joined to one another is something that does not come easy for second-language learners, even if they are children. Secondly, Cowan suggested that the spoken Arabic training should be extended to a full two years. There is some research (Cowan & Sarmad, 1976) which shows that in a situation somewhat comparable to Sudan, successful performance in learning to read a second language is related to the extent that the second language is spoken at home. Since Arabic will

rarely, if ever, be spoken at home, it follows that a solid foundation must first be established at school.

4.0 IMPACT OF THE PROJECT

The project's impact on the development of literacy skills was investigated by a series of three evaluations conducted from November 1980 to November 1982. Although the original project proposal called for an evaluation of the effects of the project on the self image and behavior patterns toward development of the participants, it was decided to omit these aspects from the evaluation given the difficulty of developing reliable and valid instruments to measure these variables, especially for young children. Since it had been hypothesized that any beneficial affective consequences of the project would be due to students' success in reading their mother tongue, it was felt that the best return on any evaluation effort would be obtained by determining just how well the children involved in the project were acquiring literacy skills in their language.

In addition to determining the effects of the project on the development of literacy skills by comparing the skills of children participating in the project with comparable children who were not, the evaluation was planned to obtain descriptive information on the schools, teachers, curricula and pupils involved in the project as well as information on the actual use of the project materials. It was hoped that this background and process information would provide a better understanding of the context and impact of the project and provide a basis for suggesting changes to improve the effectiveness of the project. The first impact evaluation was conducted by Cziko over a four-week period in November and December 1980. This evaluation included both project and non-project (comparison) Bari and Lotuho pupils at Primary 2. The second impact evaluation took place a year later in November and December of 1981 during which time Cowan and Cziko collected data from Bari, Lotuho, Nuer and Zande schools. The third impact evaluation was undertaken during October and November of 1982 by Cowan and involved Primary 1 Zande project and comparison pupils and Primary 1 and Primary 2 Nuer project pupils. Although a fourth final impact evaluation visit was planned for the fall of 1983, civil unrest in the region forced its cancellation.

This chapter describes the three impact evaluations and discusses their results. The design of each evaluation is first presented, followed by the results which comprise background information on the schools, teachers, school activities and the outcome of literacy tests administered to both project and comparison primary school pupils. The chapter concludes with a general summary and discussion of the impact evaluation findings.

4.1 FIRST IMPACT EVALUATION

4.1.1 DESCRIPTION OF EVALUATION

4.1.1.1 Evaluation Design

The design of the first impact evaluation evolved over a period of ten months as information on the project and participating and comparison schools was collected during three visits by Cziko to Southern Sudan in January, June and November/December 1980. The principal feature of the design involved comparing two Bari and Lotuho schools, one school of each pair using the new project materials (to be referred to as project schools), the other not (to be referred to as comparison schools). Of the four Cycle 1 languages for which project materials were being used, Bari and Lotuho were chosen due to the relative accessibility of rural schools using these languages from Juba, the regional capital. The four rural primary schools actually chosen (Rejaf East, Bari project; Bungu, Bari comparison; Hiyala, Lotuho project; and Loronyo, Lotuho comparison) were among the ten Bari and Lotuho schools visited in June 1980 which provided at least basic necessary educational facilities, i.e., shelter, blackboards, chalk, paper, and writing instruments. It should be noted that these four schools should not be considered in any way typical of primary schools in rural areas of the Southern Sudan but rather were chosen since they appeared to provide what could be considered a reasonable chance for the literacy project to make its impact felt.

Originally, it had been planned to focus on the Primary 1 pupils in these four schools in November/December 1980 and then to follow up these same children at the end of Primary 2 in November/December 1981. However, it was discovered that the 1980 Primary 1 children at the Bari project school had not been able to use Book 2 of the Bari materials since the Primary 2 pupils at the same school were still using these materials and there were not enough copies for both classes. Therefore, it was decided to modify the evaluation design by focusing on the Primary 2 children in both Bari and Lotuho schools in November/December 1980 and to follow up these same children in November/December 1981 at the end of Primary 3.

4.1.1.2 Instruments

To collect background information, questionnaires were prepared and left with the Bari and Lotuho language officers in June 1980. Completion of the questionnaires required supplying information on the size of each school (enrollment at each grade), the number of days in session during the 1980 school year, the number of Primary 6 pupils who passed the primary school leaving exam at the end of the 1979 school year, the curriculum (subjects taught at each grade, by whom, using what materials), the teachers (education, teaching experience, subjects taught) and the Primary 1 and 2 pupils (name,

mother tongue, age, and attendance). It was hoped that this background data would provide information on the context of the project and indicate the ways in which the four schools differed.

The instruments developed for the collection of outcome data involved the creation of measures of the actual reading performance of the Primary 2 pupils. A group-administered reading test and individual tests of oral reading and comprehension were constructed. The group-administered tests were adaptations and translations of the reading subtests of the Primary Level 1 Stanford Achievement Test. Tests of vocabulary, reading and word study skills were constructed in both Bari and Lotuho. The vocabulary test required the pupils to indicate the one word (out of three choices) which best fit the sentence read by the examiner. The three words were read by the examiner and the pupil had to indicate the correct word printed on his answer sheet. The reading test consisted of two parts. Part A involved indicating which one of three printed words best described a picture presented above the words. Part B involved choosing the one word (embedded in groups of three) which best fit a short printed "story" consisting of a sentence or several sentences. Pictures were used to provide some context for each of the stories. Finally, the word study skills test was a type of word recognition task. The examiner read a word aloud twice and the pupil was required to indicate the target word from a group of three words printed on his answer sheet. The correct word and the two distractors were usually similar visually and auditorily (an English example would be stiff, stitch, stick).

The oral reading tests consisted of four parts: (a) a list of ten words included in the project materials for Primary 1 and 2, (b) a list of ten words not contained in these materials, (c) a short story of approximately 50 words containing all of the words in the two lists and (d) five comprehension questions based on the story. These oral reading materials were constructed in both Bari and Lotuho.

4.1.1.3 Data Collection

Three procedures were employed to collect the background, process, and outcome data. Most of the background data were collected by the Bari and Lotuho language officers between July and November 1980 via interviews with school staff and referring to school records with the school director. Additional information was obtained during the time of the author's visits to the schools in November/December 1980. While much of the information desired was collected, some was not available. For example, some of the age data that were obtained in most cases represent the best guess of the teacher, pupil or language officer. Finally, since some of the teachers were not present at the time of the evaluation visits, some of the information on teacher's education and teaching experience may not be completely accurate since it was obtained from secondary sources.

Process data were collected on the actual teaching and learning activities of the Primary 2 vernacular classrooms at each of the four schools. These data were obtained by tape recording and taking notes on a complete vernacular reading lesson which the author attended, assisted by the language officer of

that language who was fluent in English and was able to provide the author with explanations and interpretations of the class activities.

The outcome data were obtained using the group administered and individual reading tests described above. The group reading tests were administered to all Primary 2 children present at the four schools at the time of the author's visits in November/December 1980. The first group to be administered the group reading tests was the Primary 2 class of the Bari project school. Since these pupils had great difficulty in understanding and completing the vocabulary test (and in fact as a group performed only at a chance level on this test), they were not administered the second and third tests (Reading: Parts A and B) but proceeded directly to the last test of word skills. Consequently, the word study skills test, which appeared to be the easiest of the group tests, was the only test administered to the other three Primary 2 classes. A total of 83 Primary 2 pupils in the primary schools were administered this group reading test. The oral reading test was administered individually to 43 Primary 2 pupils in the four schools. Although time limitations prevented the individual testing of all Primary 2 pupils present, an effort was made to include a representative sample from each of the four Primary 2 classes including weak, strong and average pupils from each class. These same 43 pupils were interviewed to determine their reasons for attending school and learning to read and write. The individual oral reading tests and the interviews were conducted by the Bari or the Lotuho language officer under the supervision of the author. Each pupil's oral reading performance, answers to the comprehensive questions and interview responses were tape recorded.

4.1.2 RESULTS

4.1.2.1 Background Data

General background data from the four participating schools is shown in Table 4.1. Examination of this table reveals a number of important characteristics of the four schools. Both project schools are larger in terms of pupil enrollment and staff although the teacher-pupil ratio was identical for the schools of each language group (1:36 for the Bari schools; 1:21 for the Lotuho schools). Both project schools seem more successful in preparing their pupils for the primary school leaving examination, the passing of which is prerequisite to entering junior secondary school. Among the Bari project school and Lotuho project school Primary 6 pupils who took this examination in January 1980, 32% and 52% passed, respectively, while these figures were 16% and 12% for the Bari comparison and Lotuho comparison schools, respectively.

With respect to teacher education, the two project schools had a higher proportion of teachers who had done at least some studies at a teacher training college either in Sudan or Uganda (75% and 60% for the Bari project and Lotuho project schools, respectively, vs. 40% and 43% for the Bari comparison and Lotuho comparison schools, respectively). The Bari project school also differed markedly from the other three schools in terms of teachers' work experience with the median number of years of primary school

Table 4.1

Background Data

Variable	School			
	Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
	School Data			
Pupils enrolled in 1980:				
P1	79	38	40	31
P2	82	24	35	14
P3	44	13	27	19
P4	47	32	28	18
P5	14	40	29	20
P6	26	33	48	43
Total	292	180	207	145
Teacher/Pupil ratio	1:36	1:36	1:21	1:21
P6 pupils in 1979	53	56	31	32
Above pupils passing leaving exam	17 (31%)	9 (16%)	16 (52%)	4 (12%)
First day of class in 1980	8/27	8/25	5/14	6/15

(cont'd)

Table 4.1 (cont'd)

Background Data

Variable	School			
	Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
General Teacher Data				
Number of teachers	8	5	10	7
Above teachers with regional mother tongue[a]	5 (62%)	3 (60%)	7 (70%)	6 (86%)
Education (years)				
Median		11 or 12	9.5	
Range		8 - 15	7 - 12	
Trained teachers[b]	6 (75%)	2 (40%)	6 (60%)	3 (43%)
Experience[c] (years):				
Median	30	5	8	6
Range	3 - 48	1/4 - 6	2/3 - 27	2 - 26

(cont'd)

Table 4.1 (cont'd)

Background Data

Variable	School			
	Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
Primary 2 vernacular teacher information				
Mother tongue				
Education (years)	7	8	8	6
Training				
TTC[d]	yes	no	yes	no
SIL[e]	yes	no	yes	no
Experience[c] (years)	35	6	27	5
Experience: P1 & P2 (years)	15	6	27	5
Primary 2 pupil information				
Enrollment:				
Total	82	24	35	14
Male	47 (57%)	16 (67%)	32 (91%)	14 (100%)
Females	35 (43%)	8 (33%)	3 (9%)	0 (0%)
Regional mother tongue[a]	72 (88%)	24 (100%)	34 (97%)	14 (100%)

(cont'd)

Table 4.1 (cont'd)

Background Data

Variable	School			
	Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
	Primary 2 pupil information			
Age:				
Mean	9.38	9.79	10.42	12.08
Standard deviation	1.08	1.25	1.90	2.25
n[f]	70	24	7	13

[a]Regional mother tongue refers to Bari in Bari schools and Lotuho in Lotuho schools.

[b]Trained teachers are defined as teachers with at least some teacher training college attendance.

[c]Experience refers to years of working as a primary school teacher.

[d]A yes in this row indicates some attendance at a teacher training college.

[e]A yes in this row indicates participating in the SIL teacher training for use of the project materials.

[f]Numbers in this row refer to the number of pupils for whom age estimates were obtained.

teaching experience equal to 30 for the Bari project school compared to 5, 8 and 6 for the Bari control, Lotuho control and Lotuho comparison schools, respectively. This is likely due to the fact that the Bari project school (Rejaf East) is the oldest school of the four, having been established by Italian missionaries after World War I.

The Project 2 vernacular teachers at the four schools differed markedly with respect to education, training and teaching experience. In general, the project teachers had received training from both a teacher training college and from SIL on the use of the project materials while the Primary 2 vernacular teachers at the two comparison schools had had no teacher training of any kind. Also, the two project teachers had from 2.5 to 5 times more teaching experience at Primary 1 and 2 than did the comparison school teachers. This finding reflects the fact that the project sought experienced teachers who had taught vernacular literacy skills in missionary schools to participate in the first trial of the new project materials.

There were large differences in the size of Primary 2 enrollment, the percentage of female pupils and the estimated age of the Primary 2 pupils in the four schools. Both project schools had markedly more pupils than their corresponding comparison schools. Also, while females made up a sizeable part of the Primary 2 classes at the two Bari schools, there were only three females in the Primary 2 class of the Lotuho project school and no female pupils in the Primary 2 class of the Lotuho comparison school. Almost all of the Primary 2 pupils in the Bari comparison, Lotuho project and Lotuho comparison schools had the regional language as their mother tongue (Bari or Lotuho) while 10 out of the 82 Primary 2 pupils did not have Bari as their mother tongue in the Bari project school. These 10 pupils were refugees from Zaire whose families had recently settled near Rejaf East. The mean approximate age of the Primary 2 pupils in each of the four schools was generally comparable except for the Lotuho control school whose Primary 2 pupils were generally older with an approximate mean age of 12 years. Since children are supposed to start Primary 1 at age seven and therefore Primary 2 at age eight, the ages of the four groups of Primary 2 pupils indicates that it is not unusual for children start their primary education at 8, 9 or 10 years of age.

Information on the Primary 2 curriculum and materials used in the four schools is presented in Table 4.2. The most striking aspect of the curriculum and materials used in the four Primary 2 classes is the serious lack of materials for the pupils. Of the 20 subject by school combinations represented by the four Primary 2 classes, only five of these included materials for the pupils. None of the four Primary 2 classes had pupil materials for mathematics and for three of the schools, only one Primary 2 subject was taught with the aid of pupil materials. Of particular relevance to this evaluation is the fact that while the Bari project class had the new project materials for about half of the Primary 2 pupils in the vernacular class, all pupils in the Bari comparison Primary 2 class had for class use a copy of a Bari primer first published in 1958 by L. J. Fallon, Ltd. (Dublin) and republished by the Regional Ministry of Education (Juba) in 1976. Unlike the Bari project teacher, however, the Bari comparison vernacular teacher did not have a teacher's manual for this primer nor training in the use of the primer. For the two Lotuho schools, the Lotuho primary school was able to supply all of its Primary 2 pupils with copies of the new project materials to

Table 4.2

Primary 2 Curricula and Materials

Subject	Minutes/ Week[a]	Medium	Teacher's Materials/ Language	Pupil's Materials/ Language	% Pupils with Materials
Rejaf East (Bari Project School)					
Vernacular	240	Bari	project/ Bari	project/ Bari	46%
Mathematics	240	Bari	RME/ English	none	0%
Religion	80	Bari	Catechism/ Bari	Catechism/ Bari	100%
Bungu (Bari Comparison School)					
Vernacular	270	Bari	old/ Bari	old/ Bari	100%
Mathematics	270	Bari	RME/ English	none	0%
Religion	270	Bari	Catechism/ Lotuho	none	0%
Hygiene	270	Bari	Yuggu/ Bari	none	0%

(cont'd)

Table 4.2 (cont'd)

Primary 2 Curricula and Materials

Subject	Minutes/ Week[a]	Medium	Teacher's Materials/ Language	Pupil's Materials/ Language	% Pupils with Materials
Hiyala (Lotuho Project School)					
Vernacular	200	Lotuho	project/ Lotuho	project/ Lotuho	100%
Mathematics	240	English & Lotuho	RME/ English	none	0%
Religion	160	Lotuho	none	none	0%
English	240	English & Lotuho	OUP/ English	none	0%
Arts & Crafts	80	Lotuho	none	none	0%
Loronyo (Lotuho Comparison School)					
Vernacular	240	Lotuho	old/ Lotuho	none	0%
Mathematics	240	English	RME/ English	none	0%

(cont'd)

Table 4.2 (cont'd)

Primary 2 Curricula and Materials

Subject	Minutes/ Week[a]	Medium	Teacher's Materials/ Language	Pupil's Materials/ Language	% Pupils with Materials
Loronyo (Lotuho Comparison School)					
Religion	240	Lotuho	Catechism/ Lotuho	none	0%
English	240	English	Oxford/ English	Oxford/ English	100%
Hygiene	80	Lotuho	none	none	0%
Arts & Crafts	80	Lotuho	none	none	0%
Arabic	240	Arabic	CME/ Arabic	none	0%
Physical Education	80	English	none	none	0%

Note. Abbreviations used to specify materials refer to their source, i.e., RME = Regional Ministry of Education (Juba); CME = Central Ministry of Education (Khartoum); OUP = Oxford University Press.

use during the vernacular class while the teacher used the teacher manual developed for these materials. In contrast, the Primary 2 pupils at the Lotuho comparison school had no educational materials in Lotuho. The only materials available to the Primary 2 vernacular teacher at the comparison school was an old copy of the Lotuho primer previously used to teach reading in Lotuho. It was also brought to the author's attention that this battered copy of the primer was only located a few days previous to the author's visit to the school on 1 December 1980 and consequently its use with the Primary 2 pupils at this school was very recent.

Although as mentioned above none of the schools kept complete attendance records, it is important to make a few comments on the number of days the four schools were in session in 1980. While primary schools in the Southern Sudan are supposed to open officially in April and close just before Christmas, all four schools began sessions considerably later than April in 1980. The Lotuho project school began classes on May 14 with the Lotuho comparison school about a month later on June 15. The late opening of the two Lotuho schools seemed to be due primarily to the holding of regional elections in April and May 1980 for which primary schools were used as polling places. The opening of the two Bari schools was further delayed by a teacher strike and it was not until Augusty 25 and August 27 that the Bari comparison and project schools began, respectively. In addition, at the time of the author's evaluation visit in November 1980, the four schools were closed for one week of "local leave" with relatively few Bari pupils in attendance one week later, there having been some confusion over whether local leave was to last one or two weeks. This unexpected break seriously affected the amount of time the author had to visit these schools and resulted in testing fewer individual pupils than originally planned and the elimination of the elicited imitation task from the evaluation design.

Finally, it should be mentioned that the Primary 2 project pupils included in this evaluation began using the new project materials in Bari and Lotuho in October 1979. Since this was already toward the end of their Primary 1 school year and since the beginning of their Primary 2 year was delayed, their performance on literacy tasks could be expected to be poorer than if they had begun use of the materials at the beginning of Primary 1 and had the advantage of school years of normal length.

To summarize the background information collected from the four schools, it should be quite clear that the two comparison schools should not be considered control schools in any real sense of the word. The background information reveals systematic differences between the two project schools and their respective comparison schools on many important factors. These factors, which appear to favor the two project schools, include enrollment, proportion of primary school leavers qualifying for entrance into junior secondary schools, number of teachers, teacher training and experience and the availability of pupil materials. In spite of these differences, however, the inclusion of the two comparison schools nevertheless provide some baseline information on the development of literacy skills in rural primary schools which had not had the intervention of the literacy project.

4.1.2.2 Process Data

The process data obtained from the observations and tape recordings of vernacular classes in the Bari project, Bari comparison, Lotuho project and Lotuho comparison are summarized and presented in Tables 4.3, 4.4, 4.5 and 4.6, respectively. These tables represent an attempt to analyze the classroom activities of the vernacular reading classes in terms of stimuli, respondent and response and present the activities in the order in which they took place in the classroom. While it is recognized that this simplified scheme is inadequate to portray all the fine details of classroom activities, it is felt that this analysis does present useful information on the major teaching and learning activities which took place in the four classes. This is due to the fact that virtually all classroom activities involved the teacher and the entire class and that there were very few interactions between teachers and individual pupils, between teachers and small groups of pupils, or among pupils themselves.

In reading through the sequential descriptions of class activities described in Tables 4.3 through 4.6 one is struck by the complete lack of activities in the two comparison classes which present reading as a meaningful activity requiring pupils to attempt to comprehend what they read. Although the two project classes did involve some meaningful reading activities (Table 4.3, nos. 18, 19, 24; Table 4.5, nos. 9, 10), these meaningful activities took up a relatively small part of the vernacular classroom activities. Also, in the case of the Bari project class, the teacher read the entire story aloud (Table 4.3, no. 20) followed by three readings of the story by the class (nos. 21, 22, 23) before addressing the comprehension questions to individual pupils (no. 24). Therefore, for this class it was possible that reading comprehension per se was not involved in answering the questions based on the story.

The overall impression, then, of the vernacular reading activities in the four schools is that these activities consist almost entirely of group reading and repetition of syllables, words and unrelated sentences with some practice in spelling and writing individual words.

Some observations made of these four classes which do not appear in Tables 4.3 through 4.6 are worth mention. In both project classes, a great deal of time was spent by the teacher in writing syllables, words and sentences on the blackboard, although only one set of materials written on the board did not appear in the pupils' materials. During these times, the tempo of the class was completely lost while the teacher very slowly (although very clearly) printed on the blackboard. It seems likely that the project teachers were still not accustomed to the pupils having their own materials and felt more comfortable in controlling their reading activities by pointing to parts of the blackboard. Also, in all of the classes the repetition of sounds and words was done quite vigorously and often took on a rhythmic, chanting quality which seemed to help sustain the tempo of the classroom activities. In one class (Bari comparison), the teacher would get the pupils to repeat the word by simply saying "uh?", which would often be done several times in quick succession. This is mentioned to underscore the finding that the sounds of the words and the rhythm in which they were repeated seem to be given much

Table 4.3

Sequential Description of Vernacular Class Activities: Rejaf East (Bari Project Class)

No.	Stimuli	Respondent	Response
1	sentence on board	class	reads sentence aloud
2	nonsense syllables on board	class	reads syllables aloud
3	sentence, phrase, word on board	class	reads board display aloud
4	sentences on board	class	reads sentences aloud
5	syllables on board	class	reads syllables aloud
6	syllables, sentences on board	individuals	points to syllables, sentences reads them aloud
7	function on board	class	reads function aloud
8	teacher reading aloud unrelated sentences from manual	class	listens to teacher
9	teacher's instructions	individuals	produces sentences following grammatical pattern(not connected discourse, sentences, not written on board)
10	sentences on board	class	reads board aloud
11	words, sentences on board, teacher's reading aloud	class	repeats words, sentences after teacher
12	syllables, words, sentences on board	individuals	reads board aloud
13	teacher's pointing to functions in sentences on board	class	reads functions aloud
14	Book 2, p. 60 (letters, syllables words)	individuals	read page aloud

(cont'd)

Table 4.3 (cont'd)

Sequential Description of Vernacular Class Activities: Rejaf East (Bari Project Class)

No.	Stimuli	Respondent	Response
15	teacher's pronunciation of juju	class	repeat teacher's pronunciation of juju
16	story on board	teacher	reads board aloud
17	story on board	class	reads board aloud
18	story on Book 2, p. 61 instructions to read silently	class	reads page independently, but not very silently
19	repeated instructions to read silently	class	reads "more silently"
20	story in Book 2, p. 61	teacher	reads story aloud
21	story in Book 2, p. 61	class	reads story aloud
22	story in Book 2, p. 61	all girls	reads story aloud
23	story in Book 2, p. 61	all boys	reads story aloud
24	teacher's questions on story	individuals	answer one question
25	ji, je, juju on board, eight times each	individuals	reads board aloud
26	ji, je, juju on board, eight times each	class	prints words in exercise book corrects work
27	teacher's dictation of lalaju, koti	class	prints words in exercise book
28	student's written work from nos. 26, 27	teacher	corrects work

Table 4.4

Sequential Description of Vernacular Class Activities: Bungu (Bari Comparison Class)

No.	Stimuli	Respondent	Response
1	story in book; teacher's reading of each sentence	class	reads (repeats) each sentence aloud after teacher
2	story in book; teacher's corrections & guidance	class	reads story aloud
3	words on board	class	reads board aloud
4	words on board divided into syllables	class	reads syllables aloud & blends into words
5	story in book; teacher's guidance & corrections	class	reads sentences aloud
6	story in book; each sentence read aloud by teacher	class	reads sentences aloud
7	story in book	individuals	read story aloud
8	word pronounced slowly by teacher	individuals	print word on board (different word for each pupil)
9	test heading on board	class	copies of test heading on test paper (name, date, "Bari Spelling")
10	25 words pronounced several times slowly by teacher	class	prints words on test paper
11	25 spelling words pronounced quickly by teacher	class	checks spelling on test paper

Table 4.5

Sequential Description of Vernacular Class Activities: Hiyala (Lotuho Project Class)

No.	Stimuli	Respondent	Response
1	picture of antelope with abobito on poster	class	says abobito
2	list of words on board	class	reads words aloud
3	list of words on board	individuals	points to and reads aloud all abobito in list
4	words, syllables on board	class	read aloud
5	teacher's instructions	individuals	say words beginning with a given letter
6	sentences on board	individuals	say new sentences beginning with word ofeach given sentence
7	Book 2, p.56 (words, syllables, letters)	individuals	read page aloud
8	words on board; teacher's instructions; teacher's saying of word	individuals	say new sentences containing given word
9	story in book, teacher's instructions	individuals	read story independently, silently
10	teacher's questions on story (new question for each pupil)	individuals	answer one question
11	teacher's reading story aloud	class	listens to teachers
12	story in Book 2, p. 57	individuals	read story aloud
13	words on board	class	prints words in exercise book (copy words letter by letter)

(cont'd)

Table 4.5 (cont'd)

Sequential Description of Vernacular Class Activities: Hiyala (Lotuho Project Class)

No.	Stimuli	Respondent	Response
14	sentence dictated by teacher word by word (each word repeated four times)	class	prints words in exercise book
15	student's written work from no. 14	teacher	corrects written work

Table 4.6

Sequential Description of Vernacular Class Activities: Loronyo (Lotuho Comparison Class)

No.	Stimuli	Respondent	Response
1	nonsense syllables on board read aloud by teacher	class	read syllables aloud after teacher
2	words on board read aloud by teacher	class	read words aloud after teacher
3	words on board	class	reads words aloud
4	sound of n given by teacher	class	repeats sound
5	syllables, words & sentences on board	individuals	read board aloud
6	syllables, words & sentences on board	class	board copied in exercise books (done at author's request)

more importance than the meaning of the words and the communicative function of literacy.

Finally, the analysis of the errors made by some of the Bari project pupils in answering the class comprehension questions is revealing. Since many of the comprehension questions can be answered by simply repeating an appropriate sentence or part of a sentence from the story, it was often not clear whether the pupils were actually understanding the stories or simply memorizing them from repeatedly hearing them read aloud by the teacher and by the class. However, three pupils during the Bari project literacy lesson began their answers to comprehension question with the word a, which means and and then and is often used at the beginning of a non-initial sentence of a Bari story for the purpose of text cohesion. However, answering an oral question with a sentence beginning with a is not appropriate (in fact the teacher vigorously corrected these pupils) and seems to indicate that these pupils had in fact memorized the story and went so far as to violate some basic discourse rules of spoken Bari to use what they had memorized to answer the question.

4.1.2.3 Outcome Data

The outcome data of the first impact evaluation of the literacy project are summarized in Tables 4.7 and 4.8. Before examining these results, however, several factors should be kept in mind. First, a relatively small number of pupils were administered the individual reading tests. Usually, this was due to low attendance at the four schools and/or lack of time. Therefore although the pupils tested are believed to constitute a fairly representative sample of all of the pupils in each of the four classes, they were not randomly selected from their Primary 2 class. Also, there were important differences between the two comparison classes. While the Bari comparison class was able to provide all of its Primary 2 pupils with reading material in the vernacular, no materials whatsoever were provided for the Primary 2 pupils in the Lotuho comparison class. Finally, it should be kept in mind that although tests of statistical significance (i.e., t-tests) were computed to compare the reading performance of each project class with its comparison class, these tests were performed for descriptive purposes only. Since the pupils were not randomly selected from their respective populations, the results of these analyses should be considered to provide information only on the differences in performance between the actual pupils being compared. Generalizations of these results are only valid insofar as these pupils, teachers, materials and contexts are similar to those elsewhere in the Southern Sudan.

4.1.2.3.1 READING PERFORMANCE

The reading test performance of these Bari and Lotuho pupils is summarized in Table 4.7. On List 1 (reading aloud 10 words taken from Books 1 and 2 of the project materials) all groups were able to read approximately three-quarters of these words except the Lotuho comparison group which could read virtually none. On List 2 (ten words not appearing in Books 1 and 2 of the project materials), performance was, as expected, poorer. However, while the Lotuho project group performed markedly better than the Lotuho comparison group, the Bari comparison group performed at a higher level than did the Bari

Table 4.7

Reading Test Results

Variable	School			
	Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
List 1				
M	7.6	7.5	7.7	0.1
SD	1.8	2.4	2.1	0.3
N	14	6	9	9
List 2				
M	2.9	5.2	3.8	0.0
SD	3.0	3.2	4.4	0.0
N	14	6	9	9
Story				
M	24.6	20.2	17.8	0.1
SD	9.4	16.3	9.2	0.3
N	14	6	9	9
Comprehension Questions				
M	3.4	2.7	1.6	0.0
SD	1.0	2.2	1.1	0.0
N	14	6	9	9
Word Study Skills				
M	32.2	52.3	42.6	23.2
SD	11.8	3.7	14.4	3.1
N	22	14	24	6

Note: Maximum score is 10 for both Lists 1 and 2, 5 for Comprehension Questions and 60 for Word Study Skills. Maximum socre for the Bari Story is 41 while that for the Lotuho Story is 52. A solid line between two means indicates a significant difference ($p < .05$)

project group. The better performance of the Bari comparison pupils on List 2 seemed to be due primarily to their ability to use letter names to sound out unfamiliar words. Almost all the Bari comparison pupils attacked words by first reading the letter names of the component letters and repeating these names with increasing speed until the word was recognized. No pupils from the other three classes employed this strategy since apparently they had not been taught the names of the letters or the individual sounds that each letter represented.

It was only while reading aloud the story and answering the comprehension questions that both project groups performed better than their respective comparison groups. However, since it was possible for the pupils to answer these comprehension questions correctly without fully understanding the story or even parts of the story, it is likely that with the exception of the Lotuho comparison pupils these scores overestimate the pupils' ability to read with comprehension. (The easy nature of the comprehension questions is due to the fact that they were constructed to be similar to the comprehension questions used in the project materials. See the second point in the discussion section.)

Finally, performance on the group-administered word study skills test indicated that the Lotuho project group performed better than the Lotuho comparison group while the Bari comparison group performed at a higher level than the Bari project group.

4.1.2.3.2 INTERVIEW DATA

The reasons obtained from the interviewed pupils for attending school are categorized and presented in Table 4.8. The most popular reasons for attending school were related to obtaining employment (61% of all pupils interviewed). The jobs specifically mentioned were teacher (26%), government official (13%), doctor (5%) and nurse (3%). The second most popular reason given for attending school was related to some aspect of literacy (i.e., learning to read and/or write) with 42% of all pupils having given such a reason. The most popular remaining reasons were general academic reasons (e.g., to obtain knowledge, to be educated) and reasons related to obtaining prestige in some way (26% of pupils interviewed gave one or both of these types of reasons). The prestige reasons included becoming a "big man" (16%), being clever (11%) and obtaining a car (3%).

With respect to group differences in reasons for school attendance, the Lotuho project is characterized by a relatively high proportion of pupils having given general academic reasons and no pupils having given literacy-related reasons for school attendance. The Bari project class was characterized by a relatively low proportion of pupils having given prestige- and employment-related school attendance reasons. However, the Bari project pupils were interviewed immediately after the administration of the individual reading tests while for the other three classes the interviews preceded the administration of the individual reading tests. This may then explain why the Bari project pupils gave a high proportion of literacy-related reasons and a relatively low proportion of employment- and prestige-related reasons for attending school.

Table 4.8

Reasons for Attending School

Reason	School: Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)	Total
General academic	1 (7%)	2 (33%)	6 (75%)	1 (11%)	10 (26%)
Learn vernacular	3 (20%)	0	0	0	3 (8%)
Be literate	8 (53%)	3 (50%)	0	5 (56%)	16 (42%)
Learn to read	6 (40%)	3 (50%)	0	2 (22%)	11 (29%)
Correspondence	3 (20%)	0	0	0	3 (8%)
Books	1 (7%)	0	0	0	1 (3%)
Learn to write	5 (33%)	0	0	3 (33%)	8 (21%)
Correspondence	3 (20%)	0	0	0	3 (8%)
Learn mathematics	2 (13%)	0	0	0	2 (5%)
Obtain prestige	0	4 (67%)	3 (38%)	3 (33%)	10 (26%
Be a big mar	0	1 (17%)	2 (25%)	3 (33%)	6 (16%)
Be clever	0	3 (50%)	1 (12%)	0	4 (11%)
Have a car	0	0	1 (12%)	0	1 (3%)

(cont'd)

Table 4.8 (cont'd)

Reasons for Attending School

Reason	School				Total
	Rejaf East (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)	
Find employment	3 (20%)	5 (83%)	7 (88%)	8 (89%)	23 (61%)
Be teacher	2 (13%)	2 (33%)	2 (25%)	4 (44%)	10 (26%)
Be nurse	0	1 (17%)	0	0	1 (3%)
Be doctor	0	0	2 (25%)	0	2 (5%)
Be government official	0	2 (33%)	0	3 (33%)	5 (13%)
Other	1 (7%)	0	0	0	1 (3%)
Learn Arabic	1 (7%)	0	0	0	1 (3%)
Number interviewed	15	6	8	9	38

Note: Indentation of reasons indicates subordination. For example, 8 Bari Project pupils gave a "be literate" reason for attending school of which 6 pupils specifically gave a "learn to read" reason. Of these latter 6 pupils, 3 further specified a "learn to read correspondence" reason. Since superordinate reasons include all pupils giving a more specific subordinate reason plus less specific pupils and since pupils often gave more than one reason, sums of columns percentages exceed 100%.

4.2 SECOND IMPACT EVALUATION

4.2.1 DESCRIPTION OF EVALUATION

4.2.1.1 Evaluation Design

The second impact evaluation was originally intended to follow up the same Bari and Lotuho pupils studied in the first evaluation. However, since some modifications in the design of the literacy materials had taken place for the Cycle 2 languages (due to the workshop held by Cowan in Maridi in October 1980 described in Chapter 3), it was felt that it was imperative to collect information on the impact that these modified materials were having on the acquisition of literacy skills. Therefore, Primary 1 project classes using trial editions of the materials prepared for two Cycle 2 languages (Zande and Nuer) were also visited, observed, and tested. Although it was not possible to collect similar data from Nuer and Zande comparison classes at this time, it was felt that the data collected from the Nuer and Zande project classes in itself would provide valuable information on the effectiveness of the Cycle 2 modifications and considerably broaden the base of our evaluation. In addition to the six classes mentioned above, information was also collected from two additional Bari and Lotuho classes not included in the first impact evaluation. Therefore, data were collected from a total of eight classes. The four Primary 3 classes followed up from the first evaluation were Rejaf East (Bari project), Bungu (Bari comparison), Hiyala (Lotuho project), and Loronyo (Lotuho comparison) Primary Schools. The two Cycle 2 classes were the Primary 1 classes of primary schools in Nasir West (Nuer) and Yambio (Zande). The two additional Cycle 1 classes consisted of a Primary 3 project class in Rejaf West (Bari) and the Primary 2 project class of Torit East Primary School (Lotuho). Information was collected toward the end of the school year in November and December 1981 by Cziko (Bari and Lotuho classes) and Cowan (Nuer and Zande classes).

Because of time limitations, we were unable to visit Raga, where the testing of the third Cycle 2 language (Kresh) was taking place. Jocelyn Clavenger reported that the IRL language officer and the two literacy inspectors who wrote the first three primers with SIL consultant Rick Brown were testing Books 1 and 2. Because of a teachers' strike, they were unable to begin before August 1981 and hence had only begun Kresh Book 2 when our visit was made in November. SIL consultant Julie Van Dyken had made one supervisory visit of about 15 days. The students had been divided into two groups on the basis of language ability, one being comprised of native speakers and the other of non-native speakers. The two literacy officers were teaching the respective groups under the supervision of the language officer. Regrettably, the only person who might have supplied us with detailed information about plans for expanding Kresh instruction in other schools around Raga in 1982, Julie Van Dyken, was in Nigeria at the time of our visit.

4.2.1.2 Instruments

To collect background information, the same questionnaire that was used for the first impact evaluation was again used to interview the director and teachers at each school. For the four Bari and Lotuho classes that were included in the first evaluation, only that information which had changed since last year was recorded (e.g., new teachers, class enrollments, Primary 3 curriculum and materials).

The instruments developed for the collection of outcome data involved the creation of measures of the reading ability of both project and comparison pupils in their respective mother tongue. For pupils in Primary 2 or 3, a writing test was also developed and administered. The literacy tests developed for each of the classes are described below for each of the four languages included in the evaluation.

4.2.1.2.1 BARI TESTS

The Bari literacy test battery was made up of three principal parts. The first part was a test of word skills composed of four subtests. The subtests were (a) Vowel Words, (b) Consonant Words, (c) Known Words and (d) Unknown Words. The subtest involved reading aloud 10 two-syllable common Bari words containing the 10 vowels of the Bari language. Since only six letters (graphemes) are used to represent these 10 vowels (the tense-lax distinction not being indicated for four of the vowels), this subtest required the pupils to apply their knowledge of Bari vocabulary to decode each word. For each of the ten items of Vowel Words subtest, the vowel had to be read in one way only (either tense or lax) to make a Bari word and the word had to be correctly read for the pupil to pass the item. One-syllable nonsense words, each containing one of the 19 consonants of Bari, made up the subtest. For this subtest, the pupil was scored on whether or not he read the consonant correctly, ignoring what was read for the vowel sound. The subtest consisted of 10 words used in Books 2 and 3 of the new Bari literacy materials while the subtest consisted of 10 words not contained in Books 2 or 3 of the materials. The latter two subtests were the same ones that had been used for the first evaluation in 1980 and pupils were required to read aloud the entire word correctly. These four subtests therefore comprised 49 items.

The second principal part of the battery involved reading aloud a story of 52 words and answering six comprehension questions based on the story. These questions included some which referred to information stated explicitly in the text of the story as well as others which required the inferring of information implicitly included in the text. The last part of the battery involved a dictation of a short passage consisting of a total of three sentences and 16 words. These words were all included in Books 2 and 3 of the new Bari literacy materials.

4.2.1.2.2 LOTUHO TESTS

The Lotuho literacy test battery was also made up of three principal parts. The test of word skills comprised four subtests, viz., (a) Vowel Words, (b) Consonant Words, (c) Known Words and (d) Unknown Words. The Vowel Words subtest consisted of five nonsense words each containing one of the five

vowels used in the Lotuho language. The Consonant Words subtest contained 27 nonsense words, each containing one of the 27 consonants of Lotuho. The Known Words subtest included 10 Lotuho words from Books 2 and 3 of the new Lotuho literacy materials while the Unknown Words subtest included 10 words not contained in these same materials.

The second principal part of the Lotuho literacy test battery involved reading aloud a story of 52 words and answering eight comprehension questions based on the story. As for the Bari test, these questions referred to information both explicitly and implicitly stated in the reading passage.

The last part of the Lotuho battery involved the dictation of a short passage consisting of a total of three sentences and 20 words. These words were all included in Books 2 and 3 of the Lotuho literacy materials.

4.2.1.2.3 NUER TESTS

Both the Nuer and Zande literacy tests were developed in the field during Cowan's visit. They were modeled after the Bari and Lotuho test batteries. The first subtest consisted of 12 nonsense syllables which contained letters the students had been exposed to in the primer. The purpose of this subtest was to gain a general measure of the students' decoding ability. The second subtest comprised a list of 20 words, 10 of which were "known words", i.e., they were drawn from the lessons the students had studied up to the testing dates (Lesson 45 for the Nuer primer, Lesson 49 for the Zande primer). The other 10 words were "built" words, i.e., containing letters the students had been taught, but which had not actually been used in previous lessons. (The word bok, "book", was used in both tests and although it is never used in the primer, it does appear on the title page.) The final subtest consisted of a short passage in which all of the previous 20 test words appeared. The original Nuer passage, which was 56 words long, had to be drastically revised after testing revealed it was much too difficult for the pupils. The revision was then pretested, using three adults and a literate sixth grader before continuing the testing. The passage was followed by six comprehension questions; the answers to two of these were not directly stated in the passage, but could be inferred from the content. The children read all of the various subtests aloud in the order described above (nonsense words, 20 test words, comprehension passage) and were then asked the six comprehension questions.

4.2.1.2.4 ZANDE TESTS

The Zande test had exactly the same format as the Nuer test, the major differences between the two being that the Zande test had 15 nonsense syllables and the comprehension passage was 84 morphemes long. The disparity in length is virtually unavoidable if one is concerned, as the tester was, with creating passages in all languages that have roughly the same number of prepositions. Since Zande uses a large number of monosyllabic morphemes, which are represented as free-standing "words" in the Zande script, an overall word count of a passage containing approximately an equal number of prepositions as found in the Bari, Lotuho and Nuer passages would be higher for Zande.

4.2.1.3 Data Collection

Four procedures were used to collect the background, process and outcome data. Most of the background data obtained from Rejaf East, Bungu, Hiyala and Loronyo Primary Schools were collected by the Bari (Sejario Latansio) and Lotuho (Massimino Allam) language officers (employees of the Regional Ministry of Education in charge of inspecting project schools and supervising project teachers) during the 1980 evaluation visits by Cziko. Background information on the additional Bari and Lotuho project classes evaluated in 1981 was also collected at this time. Background data were collected for the Nuer class at the school in Nasir and for the Zande classes at Yambio school by means of the same questionnaire used for the Bari and Lotuho schools. The SIL consultants and the IRL language officers completed the questionnaires soliciting the assistance of school officials whenever this was possible. Only the background data from the school in Nasir were available. However, the quality of student attendance from the time the Nuer school opened in June 1981 is extremely accurate and comprehensive.

For the two Bari and Lotuho classes which were included for the first time in this second evaluation, we attempted to collect information on the teachers, pupils, curriculum and materials of each school with particular emphasis on the project literacy classes under study. This information was obtained via interviews with teachers, school directors and from available school records. However, as described below, some of this background information was often impossible to obtain (e.g., pupil attendance data) or of doubtful reliability (e.g., in some cases discrepancies existed between what the teacher or director described as the language of instruction for a certain class and what was actually observed in the classroom). In other cases, the director and/or teachers were absent at the time of our visit. Nevertheless, the background data which were obtained do provide useful information on the context of primary education in the rural Southern Sudan and indicate ways in which the eight classes visited differed from each other.

Process data were collected by observing vernacular class lessons at seven of the eight schools visited (the project teacher at Rejaf West was on sick leave at the time of our visit). As was done for the 1980 impact evaluation, these data were obtained by tape recording and taking notes while observing a vernacular literacy lesson assisted by the language officer or SIL personnel familiar with the language who was able to provide the evaluators with explanations and interpretations of the class activities.

Finally, the outcome data for the Bari and Lotuho schools were obtained using the literacy tests described above. All reading tests were administered individually to a sample of pupils from each of the eight classes evaluated. These were P3 pupils at all of the Bari and Lotuho schools (except Torit East where P2 pupils were tested) and P1 pupils at the Nuer and Zande schools at Nasir and Yambio. All reading tests involved oral reading and the oral answering of reading comprehension questions. These tests were administered by the respective language officer or SIL associate who was fluent in the local language and all responses were recorded on audio tape. The scoring of these tests either took place at the time of administration (using the recordings to verify the scoring when necessary) or at a later time from the recordings and was done by persons fluent in the language being tested. The

dictation test was group administered to all Bari and Lotuho classes except Rejaf West. The dictation text was read to the pupils three times: first, completely through with no pauses for writing; second, with pauses after progressively larger groups of words during which time the pupils were instructed to write what they had heard; and third, one final time for the pupils to check and correct what they had written. All pupils present in the vernacular class at the time of the testing were given the dictation test. In addition to the literacy tests, all pupils who were individually tested were asked three questions: (a) "Why do you come to school?"; (b) "Why do you want to learn to read and write?"; and (c) "What do you read or write outside of school?" Pupils' answers to these questions were also recorded on audio tape for subsequent translation, classification and analysis.

At Nasir West Primary School, the students had been grouped, on the basis of past performance, into four ability levels. It was the judgement of the SIL consultant that only the top two groups would stand a chance of successfully completing the test. For this reason, all of the children tested were selected from those two groups. The children were tested individually in a teacher's room at the school. Each pupil was seated beside either the SIL consultant or the language officer. The evaluator, Cowan, sat on the other side of the table, in the center of which was positioned the tape-recorder. The child was first asked the three questions: "Why do you come to school?"; "Why do you want to read and write?"; and "What will you read and write outside of school when you know how?" Next, he was asked to read the nonsense syllables and the 20 test words. Following this, he was told to read the story aloud and after he had finished, the examiner put the six comprehension questions to him. The entire protocol was tape-recorded by the consultant and the SIL consultant, who did most of the interviewing, transcribed the pupils' oral reading errors. Due to the fact that the SIL consultant possesses virtually native speaker competence in Nuer and because all of the children tested read at such a slow rate, it was possible to make very accurate transcripts of the oral reading errors during each interview.

The Zande children tested at Yambio Primary School were examined using the same procedure. There were three classes formed, once again, on the basis of ability. Only the top two levels were examined, most of the children (9 of 12) coming from the better class. The interviews were recorded by SIL literacy consultant, Jocelyn Clavenger and the IRL Language Officer, Bullen, attempted to make a running record of the children's oral reading errors during the test. Due to an oversight on Cowan's part, one irregularity occurred int the protocol: the first seven children were allowed to read the comprehension passage twice, once silently and once aloud. This does not appear to have greatly increased the comprehension scores of those children; indeed an inspection of the data indicates that the major differences were due to level. However, these children did have the benefit of two readings which may have improved their performance.

4.2.2 RESULTS

4.2.2.1 Background Data

4.2.2.1.1 BARI AND LOTUHO SCHOOLS

General data on the Bari and Lotuho schools included in the evaluation, except Torit East, are shown in Table 4.9 while information on the curricula and materials used in these five schools is included in Table 4.10. Since only a very brief visit was made to Torit East Primary School and since the regular vernacular teacher was not present at the time of our visit, no systematic background data were collected from this school (although a class observation was made and 10 Primary 2 pupils were individually tested). Unfortunately, some important background data (such as school attendance) were often unavailable from the schools in Rejaf East, Bungu, Hiyala and Loronyo; missing information is represented by a dash in these tables.

As can be seen from Table 4.9, fairly wide variation existed among these five schools on several dimensions, including number of enrolled pupils and proportion of trained teachers, while the five schools were more similar with respect to teacher-pupil ratio, teachers' teaching experience and the proportion of Primary 6 pupils who were reported to have passed the Primary School Leaving Examination in January 1981. Among the five individual classes evaluated, noticeable differences existed for enrollment (Rejaf East had four times as many P3 pupils as Rejaf West), the proportion of female pupils (from none to a maximum of 42%), and, of course, the presence of vernacular reading instruction in the curriculum and the availability of vernacular reading materials for teachers and pupils. Neither of the two comparison schools were teaching vernacular reading to these classes in 1981. With the exception of the new vernacular reading materials for the four project classes, Bari catechisms for Rejaf East and English materials for the Loronyo pupils, no other educational materials were available to the pupils in these five classes. Finally, among the five Primary 3 reading teachers, two project teachers had had some teacher training at a college or institute while the remaining project teacher and two comparison teachers had not. All three project teachers, however, had received IRL/SIL training on the use of the new vernacular literacy materials.

As cautioned in the description of the first evaluation, information collected from these five schools indicated that the two comparison schools cannot be considered control schools in any strict sense of the word since several noticeable differences were found Among the five Bari and Lotuho schools and Primary 3 classes from which background information was obtained. However, the factors which appeared to favor the two project classes over the two comparison classes which were described in the previous year's evaluation report (see Cziko, 1981, p.12) seem to have evened out somewhat with the most apparent differences between the project and comparison classes appearing to be due to the literacy project itself.

4.2.2.1.2 THE NUER AND ZANDE SCHOOLS

The background data for the school used as a test site for the Nuer materials are presented in Table 4.11. Nasir West school is roughly equivalent to schools like Rejaf East and the Lotuho comparison school,

Table 4.9

Background Data

Variable	School				
	Rejaf East (Bari Project)	Rejaf West (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
	School Data				
Pupils enrolled in 1980:					
P1	94	31	22	--	39
P2	59	30	21	--	31
P3	48	12	35	29	25
P4	39	12	20	--	24
P5	35	0	25	--	16
P6	9	0	32	--	16
Total	284	85	155	--	151
Teacher/Pupil ratio	1:28	1:21	1:26	--	1:25
P6 pupils in 1979	39	--	--	--	42
Above pupils passing Leaving Examination	6 (15%)	--	--	--	21 (50%)
First day of class in 1981	5/11	7/15?	8/15	7/15	7/12

(cont'd)

Table 4.9 (cont'd)

Background Data

Variable	School				
	Rejaf East (Bari Project)	Rejaf West (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
General Teacher Data					
Number of teachers	10	4	6	9	6
Above teachers with regional mother tongue[a]	6 (60%)	3 (75%)	5 (83%)	8 (89%)	4 (67%)
Education (years):					
Median	--	--	--	10	8.5
Range	--	--	--	7-12	7-9
Trained teachers[b]	8 (80%)	0?	3 (50%)	4 (44%)	4 (67%)
Experience[c]					
Median	8.5	--	6	6	8
Range	1-39	--	1-36	2-28	2-29

(cont'd)

Table 4.9 (cont'd)

Background Data

Variable	School				
	Rejaf East (Bari Project)	Rejaf West (Bari Project)	Bungu (Bari Comparison)	Hiyala (Lotuho Project)	Loronyo (Lotuho Comparison)
	Primary 3 Reading Teacher Information[f]				
Mother tongue	Bari	Bari	Bari	Lotuho	Acholi
Education (years)	11	7	12	8	—
Training:					
TTC[d]	yes	no	no	yes	no
SIL[e] yes	yes	yes	no	yes	no
Experience[c] (years)	32	9	1	28	3
Experience: P3 (years)	7	4	1	--	--
	Primary 3 Pupil Information				
Enrollment:					
Total	48	12	35	29	25
Males	28 (58%)	11 (92%)	20 (57%)	26 (90%)	25 (100%)
Females	20 (42%)	1 (8%)	15 (43%)	3 (10%)	0 (0%)

[a]Regional mother tongue refers to Bari in Bari schools and Lothuo in Lotuho schools.

[b]Trained teachers are defined as teachers with at least some teacher training college attendance.

[c]Experience refers to years of working as a primary school teacher.

[d]A yes in this row indicates some attendance at a teacher training college.

[e]A yes in this row indicates participating in SIL teacher training for use of the project materials.

[f]This teahcer was the vernacular literacy teacher for project classes and the English teacher for the comparison classes.

Table 4.10

Primary 3 Curricula and Materials

Subject	Minutes/ Week[a]	Language of Instruction	Teacher's Materials/ Language	Pupils' Materials/ Language
		Rejaf East School (Bari Project)		
Arabic	40	Arabic	CME/ Arabic	None
English	240	English	None	None
Mathematics	240	Bari	None	None
Religion	40	Bari	Catechism/ Bari	Catechism/ Bari
Science	40	English	Missionary/ Bari	None
Vernacular	360	Bari	Project/ Bari	Project/ Bari
Total	960			

(cont'd)

Table 4.10 (cont'd)

Primary 3 Curricula and Materials

Subject	Minutes/ Week[a]	Language of Instruction	Teacher's Materials/ Language	Pupils' Materials/ Language
		Rejaf West School (Bari Project)		
Arabic	180	--	--	--
Arts & Crafts	90	--	--	--
English	315	--	--	--
Geography	90	--	--	--
Mathematics	270	--	--	--
Religion	45	--	--	--
Vernacular	180	Bari	Project/ Bari	--
Total	1170			
		Bungu School (Bari Comparison)		
Arts & Crafts	40	English	None	None
English	400	English	None	None
Geography	80	English	None	None
History	120	English	None	None
Mathematics	240	English	CME/ Arabic	None
Religion	80	English	Bible/ English	None
Science	80	English	None	None
Total	1040			

(cont'd)

Table 4.10 (cont'd)

Primary 3 Curricula and Materials

Subject	Minutes/ Week[a]	Language of Instruction	Teacher's Materials/ Language	Pupils' Materials/ Language
		Hiyala School (Lotuho Project)		
English	225	English	OUP/ English	None
Mathematics	225	English	RME/ English	None
Religion	225	Lotuho	None	None
Science	90	English	None	None
Vernacular	270	Lotuho	Project/ Lotuho	Project/ Lotuho
Total	1035			

(cont'd)

Table 4.10 (cont'd)

Primary 3 Curricula and Materials

Subject	Minutes/ Week[a]	Language of Instruction	Teacher's Materials/ Language	Pupils' Materials/ Language
		Loronyo School (Lotuho Comparison)		
Arabic	90	Arabic	None	None
Arts & Crafts	90	English	None	None
English	450	English	Oxford/ English	Oxford/ English
Geography	90	English	None	None
Mathematics	270	English	RME/ English	None
Physical Education	90	English	None	None
Religion	180	English	None	None
Science	90	English	None	None
Total	1170			

Note. Abbreviations used to specify materials refer to their source, i.e., RME = Regional Ministry of Education (Juba); CME = Central Ministry of Education (Khartoum); OUP = Oxford University Press. Dashes indicate missing information.

Table 4.11

Background Data: Nasir West School (Nuer Project)

Primary 1 Curricula and Materials					
Subject	Minutes per Week	Language of Instruction	Teacher's Materials	No. Pupils with Materials	No. of Pupils in Class
Arabic	240	Arabic	First Arabic Book	0	89-110
Math	240	Arabic	Arithmetic Book	0	89-110
Nuer	480	Nuer	Nuer Primer	45	89-110
Religion	240	Arabic	Koran	0	89-110

General Teacher Information	
Number of Teachers	15
Above Teachers with Original Mother Tongue	9 (60%)
Trained Teachers	4 (27%)

Loronyo, on some variables, e.g., teachers with mother tongue. Although there are more teachers at Nasir West than at many of the comparison schools, the percentage of trained teachers is considerably lower--27%. The number of subjects offered at Nasir West is also smaller, with the result that more time is spent on them than at the project schools. The SIL consultant, Marian Farquhar, Explained that she had just begun to offer some limited English instruction three days a week as a response to student requests. In terms of enrollment, Nasir West appears to be slightly larger than many of the project schools. Interestingly, the availability of teacher's materials apparently exceeds that found in most project schools. The number of minutes devoted to vernacular instruction as shown in Table 4.11 represents two 60-minute periods per day: one before the mid-morning breakfast and one after. Attendance fluctuated considerably from one period to another. Many children who attended the pre-breakfast class did not return for the later period.

4.2.2.2 Process Data

4.2.2.2.1 THE BARI AND LOTUHO SCHOOLS

Literacy classes were observed and recorded for all of the Bari and Lotuho classes except for Loronyo (the teacher being absent at the time of our visit). Since the Primary 3 class at Rejaf East was divided into two separate groups for literacy instruction, literacy classes were observed for both of these groups. These classes were conducted in the vernacular for the four project classes and in English for the one comparison class observed (Bungu).

As was observed in the first evaluation, the project teachers in general closely followed the instructions of the teacher guide for the lesson they were presenting and the same general findings discussed in the first impact evaluation were found again in this second one. Once again, practically all classroom activities involved the teacher and the entire class with few interactions between teachers and individual pupils and virtually no interactions between teachers and small groups of pupils or among pupils themselves.

Classroom activities in all classes observed consisted primarily of group reading and repetition of syllables, words and sentences (often unrelated sentences). At the four project schools there was also some practice in spelling and writing individual words and in the making up of new sentences containing words included in the lesson. The only observed activity which clearly involved reading comprehension was the answering of reading comprehension questions based on the lesson's story which each pupil read individually and silently. The entire class at the comparison school consisted of repeating four English sentences written on the board. These sentences were: "A man and a woman a boy and a girl are walking. They are walking to a house. A tree is near the house. The man and the woman are walking around the house." These sentences were either read aloud by the entire class with the teacher pointing to each word as they were read or read aloud by individual pupils who came up to the chalkboard and pointed to each word as they read. These activities lasted for about 20 minutes until it was decided to use the remaining class time to administer the dictation test.

There was no evidence that the pupils understood the meaning of these sentences, although the teacher did review the meaning of the word house at the beginning of the lesson.

As noted the previous year, a great deal of time was spent in both the project classes and comparison class by the teacher in writing syllables, words and sentences on the chalkboard. In the case of the four project classes, what was written on the chalkboard was always already printed in the pupils' books.

In one of the project classes observed, the teacher never called the pupils by name and it appeared that he did not in fact know their names. In the other classes observed, teachers also often simply pointed to pupils to select them for individual reading activities, although they did on occasion use the pupils' names.

It was also observed that in general the project pupils appeared to read more fluently in the literacy class than they did during the individually administered oral reading tests. It is not known whether this was due to being familiar with the materials of the class lesson, anxiety caused by the testing situation, or a combination of these or other factors.

4.2.2.2.2 THE NUER SCHOOL

Three different lessons were observed at the Nasir West School. As stated earlier, there were about 96 pupils who regularly attended the literacy classes. The SIL consultant, Marian Farquhar, devised a unique solution to deal with these large classes. She recruited two untrained teacher helpers from the school. One was a woman who had been trained by the SIL consultant before the civil war and who was literate in Nuer. The other, a man, was a messenger, who had learned to read Nuer in the church literacy class. The SIL consultant divided the entire class into four ability groups. The IRL literacy officer, Simon Kuoon Puoc, taught the highest level, the SIL consultant (who, as pointed out earlier, is bilingual in Nuer and English) taught the next highest level and the teacher helpers taught the two lower levels. The teacher helpers learned some procedures simply by watching the IRL officer teach some lessons, such as the letter lessons, to a combined class made up of all four groups and they also were periodically supervised by the SIL consultant. Pupils could move up to a higher group or be asked to join a lower group whenever the IRL language officer or the SIL consultant felt this was appropriate, and, indeed, the Cowan observed this happening several times during his stay.

The procedure used for presenting each new alphabetical symbol ("letter" lessons) followed a given sequence, which the teacher worked through in five steps which were intended to present the new letter and contrast it with known sequences. This was a laborious process which requires writing the letter and contrasts (represented in five boxes in the primers) on the board and having the students read them aloud in chorus and, to a limited extent, individually. Only steps one and five actually contained meaningful material. In general, one cannot avoid the impressions that this activity, which is the cornerstone of the method, was time-consuming and boring. Only a small percentage of the students (the better ones, who may already be able to read the letter) were capable of maintaining their concentration for the 30 to 50 minutes that may

be expended on this lesson. Attention wandered during the time that elapsed while the teacher wrote each new box on the board (the chalkboard at this school was so slick that many of the letters were not discernible from the back of the room) and during the endless choral repetition after the teacher or a student has read whatever sequence is on the board. The teacher did not often deviate from one order of presentation, so after two or three repetitions, it was possible to memorize each box and repeat an entire sequence with one's eyes closed.

At Nasir West, the letter lesson was taught to all four ability groups, which then broke up into their individual groups and worked on whatever lesson they had reached. While Cowan was there, he watched the entire student population being taught letter lesson 42. As soon as this was finished, the students reassembled in their individual groups. Only the most advanced group continued working on lesson 42. Group 2 dropped back to the lesson they had been working on lesson 19 and the other two groups worked at even lower levels. (This pattern is not followed at Yambio School. There the three groups work at different speeds and no joint meeting takes place. This may have something to do with the superior results obtained at Yambio to be discussed later.)

The reading lesson observed using the comprehensive passage at Nasir West School was with the most advanced pupils--Group 4. There were 12 children in this group. The procedure was as follows: Books were passed out to the children. The teacher had the children divided into small subgroups of four students each. Each subgroup first read aloud in chorus the five boxes in the letter drill page. When each subgroup had finished, the teacher told the class to read the story silently. They did this, closing their books to indicate when they were finished. When all but one student had finished, the teacher informed the class that he was going to ask them some questions about the passage. In the first question, he called on one boy, who answered it correctly. The entire class blurted out the answer to the next question before the child called on had an opportunity to answer it. When all of the questions had been answered, the teacher split the class into two groups and the entire story was read aloud in chorus, sentence by sentence, alternating from one group to the other. The choral reading was then repeated, but this time, one group read half of the passage and the other group the remaining half. There followed another choral reading, where the first group had the half that had been assigned to the other group previously and vice versa. The rhythmic chanting quality of this choral reading was devastatingly monotonous and unnatural, in the sense that it did not appear to approximate the true patterns of stress and pauses characteristic of the few Nuer readers that Cowan heard. Again it appeared that the sounds of the words and the rhythm in which they were repeated seem to be given much more importance than the meaning of the words and the communicative function of literacy. When the choral reading was finished, the teacher called on individual children to read. The entire lesson consumed one hour and ten minutes.

The only innovation developed as a result of the reading workshop held in Maridi in November of 1981 and incorporated in the Cycle 2 materials at that time was the "context clue" drill. This was essentially a cloze exercise, the purpose of which was to show children that different levels of contextual information are available in the text to decipher words they may not yet have encountered. The original plan, as described above, was that the context

clues for lessons 1-25 would focus on syntax; for lessons 25-50, the choice of items to fill the exercise would be semantically determined and that from lesson 51 on, the alternatives for the cloze items would be graphemically (visually) similar. Initial reports from the SIL consultants and IRL officers at the testing sites in Nasir and Yambio indicated that these context clue drills were extremely popular with the children. At the Nasir West School, the IRL language officer provided a demonstration of how these units are taught. For the purposes of this demonstration, one adjustment was made: instead of teaching the lesson from the books, as is normally done, the lesson was taught from the chalkboard to all four levels.

The teacher began by writing the frame (a sentence with one word deleted and replaced by a blank) and the three possible choices (words) on the board. He then turned to the children and said: "I want someone to read this and put one of these three words--the one that is the right (correct) one--in the blank space." Almost all of the entire group (48 children) raised their hands. There was visible excitement in the room, many children calling out "qu r, qu r, qu r!" ("teacher, teacher, teacher!") and snapping their fingers in an attempt to get the teacher to choose them.

The teacher, Simon Kuoon Puoc, was extremely skillful and was obviously well liked by the students. He developed an effective technique for handling the various outcomes of the students' attempts. Frequently a child would read the sentence and simply substitute a word in the blank that was not one of the three alternatives arrayed below in the sentence. In this case, the teacher would respond: "Okay. Is that word (says the word that the child has substituted, e.g., "cow") one of these three words here? Is it this one?" (pointing to the first word). The class, or at least part of it, would respond: "No." "Is it this one?" (same response). "Is this one 'cow'?" (same response). "No, it isn't any one of these here." Then he would proceed to call on another student. As soon as a sentence was read with the correct alternative, the teacher would take pains to first ask the class if the answer was correct, usually saying something like, "Did Col (the child's name) get it right?" Upon receiving an affirmative answer, he would go back and take up each alternative and demonstrate that the context of the sentence excluded it as a possible substitution. Initially, the teacher read the alternatives to the children, inserting them into the blank, reading the entire sentence and then asking: "Is this Nuer? Can we say this in Nuer?" The predictable response form the class would be laughter and a chorus of "No." Later, at Cowan's suggestion, the teacher changed the procedure and had the children volunteer to read the incorrect alternatives; then he would substitute them into the blank and ask the children if the result were acceptable in Nuer. This latter procedure seems to be more desirable, since even though it extends the lesson somewhat, it nonetheless solicits wider participation.

4.2.2.2.3 THE ZANDE SCHOOL

The Zande school at Yambio had an edge over the testing site for the Nuer materials in terms of available resources. There was only one trained teacher at Nuer West School, whereas there were three at Yambio. The decision had been made to group the students by ability and to assign the two best teachers to the two highest groups and the other to the most elementary class. The SIL consultant, Alice Van Bergen, then monitored all classes and worked consistently with their teachers at the pace determined by the teachers at the

time of the consultant's visit. The lowest group was still on the first book, the middle group on Book 2, lesson 29 and the top group was reading lesson 49 in Book 3. The consultant observed three different kinds of lessons at Yambio which were taught in the two advanced classes.

Perhaps the biggest difference between the procedure for teaching the letter drill witnessed in Nasir and the one used in Yambio was the extra emphasis placed on syllabification. The teachers in Yambio tended to complete the letter lesson in about 35 minutes, which is probably the maximum amount of time that can be devoted to this lesson without making it deadly dull. There was still too much choral repetition and virtually no meaningful activities associated with the presentation of the letter lessons, but the consultant witnessed some effective word attack teaching in the functor drills. When the students had trouble reading a bisyllabic word, the teacher would write the word on the board, cover the second syllable with his hand and have them read the first syllable. Then he would reverse the procedure and have the children read the second syllable, whereupon he would then present the entire word and the children would be able to read it. This procedure was extended effectively to trisyllabic words beginning at the left and uncovering the new syllables and amalgamating them in succession from left to right, e.g., for bakere, "great", the teacher begins, "ba"; the children repeat this, then the teacher reads "ker"; the children repeat; the teacher reads "ba ker", and the children repeat. The pupils are then asked to read the entire word.

The other major difference seen at Yambio was more individual participation. Although the individual classes are about the same size at both testing sites, there seems to be more provision for individual reading in the Zande classes. This is no doubt due to the fact that there are more trained teachers at Yambio and the Zande children have better overall reading proficiency; hence, individual participation does not take up as much time as it does at Nasir.

4.2.2.3 Outcome Data

4.2.2.3.1 BARI AND LOTUHO LITERACY TESTS

The results of the Bari and Lotuho literacy tests are presented in Tables 4.12 and 4.13. The effect sizes (ES) were calculated by subtracting the mean of the comparison group from the mean of the project group and dividing this difference by the standard deviation of the comparison group. A positive effect size indicates that the project class was superior to the comparison class while a negative effect size indicates that the comparison class was superior. An effect size with an absolute value of .5 or greater can be considered indicative of an important difference (Minium, 1978, p. 96).

For the Bari schools, examination of Table 4.12 reveals that Rejaf East scored above the comparison school (Bungu) on only three of the eight literacy measures while Rejaf West performed worse than comparison class on all of the eight measures.

Bari Literacy Test Results

Test[b,c]	School[a] Rejaf East (Project)	Rejaf West (Project)	Bungu (Comparison)
1. Vowel Words (10)			
M	8.2	7.4	9.1
SD	2.7	4.0	1.7
ES	-.52	-1.00	--
n	20	11	15
2. Consonant Words (19)			
M	14.5	14.4	16.1
SD	4.2	5.8	1.2
ES	-1.33	-1.42	--
n	20	11	15
3. Known Words (10)			
M	9.4	8.4	9.0
SD	1.1	2.0	1.2
ES	.33	-.50	--
n	20	11	15
4. Unknown Words (10)			
M	6.6	5.9	7.2
SD	3.3	[illegible].6	2.6
ES	-.23	-.50	--
n	20	11	15
5. Total Word Skills (49)			
M	38.8	36.1	41.4
SD	10.3	14.7	5.1
ES	-.51	-1.04	--
n	20	11	15
6. Story Words (52)			
M	44.2	42.2	45.0
SD	14.2	14.5	10.4
ES	-.08	-.27	--
n	20	11	15
7. Reading Comprehension (6)			
M	3.2	2.4	2.7
SD	1.7	1.2	1.4
ES	.36	-.21	--
n	21	11	15
8. Dictation (16)			
M	15.0	--	13.7
SD	1.4	--	1.5
ES	.87	--	--
n	24	--	28

[a]Primary 3 pupils were tested at Hiyala and Loronyo; Primary 2 pupils were tested at Torit East.

[b]Numbers in parentheses indicate the maximum possible socre for each test variable.

[c]M = arithmetic mean, SD = standard deviation, n = group size; effect size (ES) was computed by subtracting the mean of the comparison group from the project group mean and dividing this difference by the standard deviation of the comparison group.

Table 4.13

Lotuho Literacy Test Results

Test[b,c]	School[a] Hiyala (Project)	Torit East (Project)	Loronyo (Comparison)
1. Vowel Words (5)			
M	4.2	4.9	2.9
SD	1.7	.3	2.7
ES	.48	.74	--
n	20	10	7
2. Consonant Words (5)			
M	19.8	18.6	9.6
SD	7.7	4.5	9.2
ES	1.11	.98	--
n	20	10	7
3. Known Words (10)			
M	9.0	9.1	3.3
SD	2.2	2.2	4.3
ES	1.32	1.35	--
n	20	10	7
4. Unknown Words (10)			
M	7.3	6.3	2.9
SD	3.3	2.9	4.9
ES	.90	.69	--
n	20	10	7
5. Total Word Skills (52)			
M	40.4	38.9	18.6
SD	14.0	9.2	19.1
ES	1.14	1.06	--
n	20	10	7
6. Story Words (53)			
M	43.2	43.1	15.7
SD	16.7	11.5	25.5
ES	1.08	1.07	--
n	20	10	7
7. Reading Comprehension (8)			
M	6.0	4.7	1.4
SD	2.6	1.9	2.5
ES	1.84	1.32	--
n	19	10	7
8. Dictation (20)			
M	14.9	7.2	3.2
SD	6.6	7.0	5.9
ES	1.98	.68	--
n	22	42	17

[a]Primary 3 pupils were tested at Hiyala and Loronyo; Primary 2 pupils were tested at Torit East.

[b]Numbers in parentheses indicate the maximum possible socre for each test variable.

[c]M = arithmetic mean, SD = standard deviation, n = group size; effect size (ES) was computed by subtracting the mean of the comparison group from the project group mean and dividing this difference by the standard deviation of the comparison group.

Among the Lotuho pupils (see Table 4.13) the two Lotuho project classes outperformed the comparison class (Loronyo) on all eight measures of literacy skills with all effect sizes of .5 or above. Of the two Lotuho project classes, Hiyala performed better than Torit East on six of these measures while Torit East scored slightly higher than Hiyala on the remaining two measures.

It should be kept in mind that the pupils tested at Torit East were in P2 while the other two classes tested were in P3. This suggests that the pupils of Torit East have acquired literacy skills at a much faster rate than the students in the other two schools. Although we can only speculate on why this is the case, the fact that the town of Torit is much more developed than the rural villages of Hiyala and Loronyo is very likely related to the relative success of these pupils. In contrast to the villages of Hiyala and Loronyo where children are very unlikely to see anything written outside of school, Torit (which became the provincial capital of Eastern Equatoria in 1981) has at least some signs with written English and/or Arabic and one can also find canned foods and other packaged goods in the market and shops with printed labels. It is also fairly certain that some of the Torit East pupils come from higher socioeconomic backgrounds than pupils of the other two schools. Finally, it should be mentioned that the P3 vernacular teacher at Torit East complained that on the day his pupils were tested, many of his best students were not present in class since they were making preparations for the visit of the head of the regional government which took place the following day.

Both the Bari and Lotuho test results are fairly consistent with the results obtained the previous year. In both the first and second impact evaluations the Lotuho project schools clearly did better on the Lotuho literacy tests than did the comparison school while among the Bari schools the project schools did not generally do better than the comparison school. These findings were obtained in spite of the fact that although we sought to retest for the second evaluation all children who had been individually tested the year before, inconsistent attendance made this impossible. (Of the 14 pupils who were tested individually in Rejaf East in 1980, only 5 or 36% were again individually tested in 1981 with the addition of 15 pupils who were not individually tested in 1981. For Bungu, Hiyala and Loronyo schools the percentage of P2 pupils individually tested in 1980 who were again tested individually in 1981 at P3 was 83%, 22% and 44%, respectively.)

Therefore, if we assume (as appears to be the case) that most primary schools in Southern Sudan have no or very limited amounts of pupil materials for use in teaching vernacular literacy skills, then the difference between the Lotuho project and Lotuho comparison groups in performance on the Lotuho literacy tests could be taken as some indication of the impact of the literacy project. However, as noted last year and seen again in this report's findings, the relatively good performance of the Bari comparison group suggests that what makes a difference is the availability and use of vernacular literacy materials by the pupils and there is as yet no clear evidence that the Cycle 1 materials are superior to the older materials that had been used by the Bari comparison group (Bungu) at P1 and P2.

In fact, the generally superior performance of the Bari comparison group in the total absence of vernacular literacy instruction during P3 indicates that the materials and method used for this group in P1 and P2 may have some

important advantages over the new project Cycle 1 materials and methods. As described in the first evaluation, one of the major differences between the two materials and methods is the teaching of letter names and sound blending to decode written words to their spoken forms. This would suggest that the drills and format of the new Bari and Lotuho materials designed to teach a decoding or "word attack" are not as effective as the more traditional techniques of teaching letter names and the sounds represented by each letter.

The overall literacy skills of the Bari and Lotuho project groups appeared to remain quite low. Very few of the Bari or Lotuho pupils tested demonstrated literacy skills that went beyond basic word recognition and word attack skills. Although it is Cziko's impression that there was in general a slight improvement in these skills over last year, pupils continued to have considerable difficulty reading most words which they had not already studied, including common short words made up of letters with which the children should have been well familiar. Since only a few Lotuho pupils demonstrated fairly fluent oral reading skills with good comprehension, it appears that the majority of the project pupils tested have acquired at best some basic decoding and word recognition skills but are weak in reading comprehension skills. It may well be that the high repetition rates of a relatively small number of words and the slow rate of introducing new words into the Bari materials noted earlier are at least partly responsible for this since the children are not given much opportunity to develop skills for decoding new words. Considering the amount and type of vernacular materials these pupils have available to them, the type of instruction they receive in school and their very limited or non-existent exposure outside of school to demonstrations of the functions of literacy, we would predict that under present conditions the overwhelming majority of the pupils in these Bari and Lotuho classes will not achieve true functional literacy and that the few who do will not keep these skills for long given the almost total lack of vernacular reading materials in the rural areas of the Southern Sudan. Recommendations to improve this situation are included in Chapter 5.

4.2.2.3.2 NUER LITERACY TESTS

Table 4.14 shows that the performance of the Nuer children on the literacy tests was not very impressive. A generally decreasing trend is evident in the percentages of the nonsense syllables (72%), known words (67%), unknown words (25%) and number of comprehension questions (27%) correctly answered. One possible interpretation of this is that, at the time the test was administered, the children had gained some minimal facility in recoding symbols into sound (evidenced by the children's performance on the nonsense syllables), but that they were still unable to apply this to new words and hence were largely dependent upon recognizing known words in order to read with comprehension. Two findings tend to support this interpretation. First, the Pearson product-moment correlation between the number of known words correctly read in the tests and the number of comprehension questions correctly answered is quite high, $r = .72$. Secondly, the performance of the children in the oral reading test (see Table 4.15) mirrored the classic symptoms of poor readers found in studies like Weber's (1970) and Neville an Pugh (1977).

Whenever the children encountered a word that they did not immediately recognize, they would adopt one of two strategies: most of the time they

Table 4.14

Nuer Literacy Test Data: Nasir West Primary School

A.	Number of Pupils Tested	21
B.	Average Age	9 yrs. 8 mos.
C.	Average Number of Days Attended Class (total = 115 days)	87
	Range	78 - 112
D.	Mean Number of Nonsense Syllables Correctly Read(12)	8.7
	SD	3.0
	Range	1 - 12
E.	Mean Number of Know Words Correctly Read (10)	6.7
	SD	2.6
	Range	2 - 10
F.	Mean Number of 'Built' Words Correctly Read (10)	2.5
	SD	2.8
	Range	0 - 8.5
G.	Mean Number of Words in Passag Read Correctly (56)	33.4
	SD	12.3
	Range	11 - 50
H.	Mean Number of Comprehension Questions Correct (6)	1.6
	SD	1.3
	Range	0 - 4

Note. Numbers in parentheses indicate the maximum possible score for each test.

Table 4.15

Nuer Oral Reading Errors

Error Type Examples	Total	% of Total Number of Oral Reading Errors
1. Internal Vowel Change	34	9.3
ken → kän rɛk → rɔk		
2. Substitution	53	14.5
tee → gat kuää r → bithdɛk		
3. Final Element(s) Retained	65	17.8
ɛ lɔŋ → kɔlɔŋ pi → ki kuää r → raar		
4. Initial Consonant Retained	86	23.5
bakɛl → bä guath → gua bok → bom		
5. No Attempt	45	12.3
6. Single Vowel Retained	52	14.2
rɛk → ɛ yöyö → nöŋ kuää r → cäŋ		
7. Difference of one V or C (Includes deletions and epenthesis)	29	7.9
ken → kenɛ kuää r → käär wecdiɛn → weciɛn		
8. Other	2	.6

would substitute a word which physically resembled the one they could not read. Table 4.15 shows the bases of these substitutions. The overwhelming majority fall into categories 1, 3, 4 and 6. Of these four error types, the most common was the retention of the initial consonant (and/or vowel elements). The child attempts to read a word (the "target"), but is unable to process more than the first few segments and simply creates a meaningful word that has sound which matches those that he has recoded. The match can also be on the basis of final elements of the target word (type 3), or a simple vowel (type 6). With monosyllabic words, the child may simply misread the medial vowel (type 1). Certain high frequency functors which differ only by the absence or presence of a single element and make perfectly good sense may be interchanged, e.g., /kenɛ (negative/past/3rd singular) is read /ken (negative/past/3rd sing., sentence initial) or a single element will be united (type 7). Slightly over 14% of the substitutions occur with words which have no visible similarity to the target word.

What is critical for the interpretation of these data is that only about 2% of the substitutions would make partial sense for part of a clause, but not for the entire sentence. For example, a high frequency substitution (10 tokens) was the word man (mother), for mee (when) in the sentence,

Mee	cɛ	bɛn	/ken	kuäär	gaak	kɛ	jɛ
When	3rd sing. past	come	neg. 3rd sing. past	teacher	scold	with	her

"When she came, the teacher did not scold her."

The substitution results in a meaningful first clause, since man cɛ bɛn means "(the) mother came." But the remainder of the sentence cannot be continued, since a conjunction like kɛnɛ (and) would have to be inserted before the negative morpheme to preserve grammaticality. The result of this substitution would be a grammatical sentence: "Mother came and the teacher did not scold her." But even this sentence would then be meaningless in light of the preceding context, since the story is about two girls, one of whom, Nyaluaak, has lost her school books and is afraid that the teacher will scold her for this when she arrives at school. The subject of this sentence is Nyaluaak and there is no mention of a mother anywhere in the story. In general, all meaningful and grammatical substitutions were of this type. The substitution maintains grammaticality for the extent of one or more adjacent constituents, e.g., dupkien (their paths) was substituted for wecdien (their village) in the phrase: kɛ ɣöö (because) kam (between) wecdien (village/their) kam (and) rɛk (town) "between their village and the town"; dodien (another) was substituted for wec (village) in the noun phrase wecdien (their village); guil (look at) was substituted for gɔl (skirt/go around) in the verb phrase pi gɔl (skirt the water). Although these substitutions produce grammatically and semantically acceptable alternatives, one cannot help noticing the similarity in terms of common letters between the target words and the substitutions and it is difficult to avoid the conclusion that the primary basis for substitution is the recognition of a few letters in each word that the child can read.

The other strategy manifested by the Nuer children was simply to remain silent whenever they encountered a word that they could not sound out. This is generally considered to be a classic symptom of weak readers. Very rarely

did a child ever back up and attack a sentence again in an attempt to make use of previous context to decipher a problem word. Taken together, these two strategies argue that the Nuer children are extremely "word oriented," and have yet to develop proficiency in word attack skills. Moreover, they seem unable to make effective use of context in reading.

Pearson product-moment correlations were computed to determine possible relations between performance on different levels of the test and attendance. These were all fairly low: (a) attendance and comprehension score, $r = .51$, (b) attendance and nonsense syllables, $r = .40$ and (c) attendance and known words, $r = .11$.

4.2.2.3.3 ZANDE LITERACY TESTS

Due to the projected short duration of the second impact evaluation visit at Yambio, testing on a scale comparable to that undertaken at Nasir was not contemplated. It was hoped that there would be time to develop a reasonably adequate Zande reading test similar to the one used for the Bari and Lotuho children for the first evaluation which would be ready for use for the following year's third impact evaluation. Other than that, Cowan had planned to observe several classes and collect process data. However, these plans were changed when the performance of the first class observed revealed a dramatic contrast with what the consultant had seen in Nasir. The unavoidable impression was that the Zande pupils were reading with far greater facility than the best Nuer pupils in Nasir. The contrast was so striking that it cried out for an explanation, particularly since both test populations were, to a large extent, matched, i.e., they had both begun school at the same time, had been assigned to classes according to their ability and were roughly at the same level in their primers. There was, one very significant difference. The Zande children had been allowed to take their primers home after school about five weeks prior to the second impact evaluation visit, whereas the Nuer children had access to their primers only for the two periods they were in school. The possibility that the Zande children's superior performance was due to extra exposure to reading outside of class was an obvious hypothesis.

In order to determine whether this impression of the Zande pupils' proficiency was justified and to discover whether the children were indeed reading outside of class, Cowan allocated different testing tasks to the IRL and the six personnel present. The IRL language officer, Bullen and the SIL consultant, Jocelyn Clavinger, administered the Zande reading test described earlier to individual students while the consultant, IRL Officer John Baptist Asan and SIL consultant Alice Van Bergen performed spot tests with pupils in each of the top two classes. The procedure for the latter test was as follows: we asked the entire class three questions: (a) How many of you read your books at home? (b) How many of you receive help with your reading at home from your parents? and (c) How many of you who don't have parents who can read are asked by them to demonstrate how well you read and write regularly? In the top class (21 children), 11 children claimed that they received help regularly from their parents, six children claimed that they read by themselves regularly and 20 children claimed that their parents required them to demonstrates what they had learned in school regularly. One child said that she had not read ahead because she doesn't have a primer. In the second group, all 14 children present that day claimed to do some reading

in their books at home. Eight out of 14 children claimed to have read to the end of the primer.

Next, we asked individual children how far beyond the primer lesson taught that day that they had read. As each child responded with the number of a lesson, he or she was asked to turn to the comprehension passage for that lesson, to read it aloud and then to answer the comprehension questions that followed it (these were asked orally by the teacher). The oral reading errors were recorded as well as the number of comprehension questions correctly answered. Of the 19 children in the top group, 17 were able to read at least one lesson beyond the currently completed lesson (lesson 49). Two children attempted lessons which were too difficult for them and were unable to read the story completely. The breakdown of the lessons attempted by the students and number of comprehension questions answered successfully is shown in Table 4.16. Note that over 25% of the students were capable of reading 12 to 15 lessons beyond where the class actually was in the primer and 77% of the class was capable of reading at least three lessons beyond the lesson just completed. In the next lowest class, Group 2, 50% of the students were able to read four lessons beyond what was currently being taught and 60% were able to read three lessons beyond the current lesson. The mean oral error rate for this class was higher than the top group (Group 1, $\underline{M}$ = 3; Group 2, $\underline{M}$ = 5.2) and the children in this class tended to block (refuse to persist when they couldn't read a word) more frequently than the children in Group

One is inevitably tempted to combine the results of these spot tests with the results of the reading tests administered by Jocelyn Clavinger and Bullen (see Table 4.17) to the 12 Zande children and make some comparison with the Nuer children tested in Nasir. Strictly speaking, such a comparison is specious, since there is no way of determining whether the tests devised for the Nuer and Zande children are in any way equivalent. Nevertheless, the small sample of children tested by Jocelyn Clavinger and Bullen achieved much higher scores on all parts of the test than the Nuer children did on their test. Table 4.18 shows that basically the same types of errors occur with some exceptions. As one might expect in a language which contains a lot of initial consonant clusters comprised of velars and bilabial stops or nasals and a homorganic stop, like Zande, an epenthetic vowel /a/ will be inserted in reading, e.g., error type 2. Similarly, initial segments will be deleted: error type 1.

It is difficult not to conclude that the Zande children were reading better than their Nuer counterparts. If this conclusion is in fact true, the difference between the two groups could be attributable to one or more of the following factors. First and most obviously, the Zande children have a more literate environment. Because they are allowed to take their books home, the possibility for additional reading outside of class exists (and is taking place, if we are to believe the children's reports), whereas the Nuer children's reading experience is confined to two periods at school each day. Second, the Zande school has more trained teachers. Consequently, the children can receive more individual instruction in their ability groups. As pointed out earlier, in Nasir, all of the children are for some period of the day taught by one teacher. It is very possible that less actual learning is taking place in these classes than in the smaller groups, where attention may be more focused. A third possibility is that the tests are not of equal difficulty. More time was spent developing the Nuer than the Zande test.

Table 4.16

Zande "Spot" Reading Test

Student	Sex	Lesson Attempted[a]	No. of Questions Correctly Answered
Student 1	male	50	All
Student 2	female	50	3 out of 4
Student 3	male	50	All
Student 4	male	51	All
[b]Student 5	female	52	3 out of 5
Student 6	male	52	All
Student 7	female	53	All
[b]Student 8	female	54	3 out of 4
Student 9	female	55	All
[b]Student 10	male	56	All (considerable difficulty)
Student 11	male	56	All
Student 12	male	57	All
Student 13	female	59	Failed to complete passage
Student 14	female	59	Failed to complete passage
[b]Student 15	male	61	All
Student 16	male	62	4 out of 5
[b]Student 17	male	62	3 out of 5
Student 18	male	63	All
Student 19	male	64	All

[a]There are 64 lessons in the primer.

[b]These children had some trouble with the story. Their reading was slower and more haiting than that of the other children and they made more than the average number of errors (3).

Table 4.17

Zande Literacy Test Data: Yambio Primary School

A.	Number of Pupils Tested	12
B.	Mean Number of Nonsense Syllables Correctly Read (15)	13.8
	SD	1.8
	Range	10 - 15
C.	Mean Number of Known Words Correctly Read (10)	9.8
	SD	.4
	Range	9 - 10
D.	Mean Number of "Built" Words Correctly Read (10)	8.2
	SD	2.7
	Range	1 - 10
E.	Mean Number of Words in Passage Read Correctly (84)	81.2
	SD	2.7
	Range	72 - 84
F.	Mean Number of Comprehension Questions Correct (7)	5.3
	SD	1.8
	Range	3 - 7

Table 4.18

Zande Oral Reading Errors

Error Type Examples	Total	% of Total Number of Oral Reading Errors
1. Deletion of Initial Consonant(s)	7	12.3
gbe → be ngbarago → gbarago barago		
2. Epenthetic Vowel	11	19.3
mbi → mabi gbe → gabe		
3. Final Element(s) Retained	7	12.3
ngbarago → rungo bere → mere		
4. Initial Consonant Retained	12	21.0
oro → ora bayugupai → bapa		
5. Deletion of Medial Consonant	3	5.3
gunde → gude bambiko → bakiko		
6. Epenthentic Consonant	5	8.8
gbe → ngbe		
7. Substitution	3	5.3
8. Retention of Single C or V	2	3.5
nda → du		
9. Internal Vowel Change	1	1.8
bere → bire		
10. No Attempt	6	10.5

Fourth, the inconsistent procedure used in administering the Zande test to the first seven children may have elevated their scores somewhat. Fifth, there is always the possibility that the difference in the sample sizes of the two groups tested may have contributed to the difference in performance. Had there been more time, the testing of more Zande children might have brought down the overall performance level of that group. And finally, the frequency with which words are recycled in the Zande primer may be greater than in the Nuer primer, making the former easier to read.

It would appear that a combination of the first two factors has resulted in the Zande children becoming better readers than the Nuer children. Obviously this conclusion deserves further investigation. Still, it appears important to point out the important implications which arise from the comparison of the Zande and Nuer children. We have argued earlier that a crucial difference in the setting of this project and most other literacy endeavors is that the rural Sudanese children have little or no exposure to the written word outside of school . The difference in reading between the Zande and Nuer children suggests that the single most important factor in promoting literacy may be an increased exposure to reading materials outside of school and the encouragement and assistance they report receiving from their parents. This implies that the effectiveness of the current program could be increased dramatically by the institution of three policies: (a) allowing the children to take their books home, (b) encourgaging them to read outside of school and (c) creating a more literate climate in the community through the dissemination of books and pamphlets in the local languages which contain subject matter of interest to adults and children.

4.2.2.3.4 PUPIL INTERVIEWS

Answers to the three questions asked of those students who were individually tested were categorized for analysis. In answering the first question, "Why do you come to school?", the majority of the Bari and Lotuho pupils in all the schools except Hiyala gave "to learn" as the principal reason, with reading or writing most commonly claimed as the particular skills they wished to learn. Among the Hiyala pupils, however, almost half of the pupils interviewed gave "becoming civilized, wise, and/or clever" as their reasons for attending school. Only one of the Bari and Lotuho pupils gave an employment-related reason for attending school and a total of five students reported that they felt obligated to go to school. Both the Nuer and Zande children seemed to be somewhat confused by the first question. The Nuer children gave different answers, ranging from "my brother brought me," to "I want to know all things they teach in school, because some day I will be a big chief." The majority, 8 of the 18 Nuer children who responded and 10 of the 12 Zande children simply said "to learn."

For the second question, "Why do you want to learn to read and write?", most pupils reported that they wanted to become literate so that they could become important (often referred to as being a "big man"), civilized, knowledgeable, clever, or "like you" (referring to the relative wealth and status of Cziko and the Lotuho language officer, Massimino Allam, who conducted the interviews). A fair number of employment-related reasons were also given at the three Lotuho schools. The Lotuho pupils also gave relatively more education- and wealth-related reasons for learning to read and write than did the Bari pupils. The Nuer children gave widely varying

answers. Five children said they wanted to be able to read the Bible. The remainder gave answers ranging from "So that when I see something that is written, I can read it," to "So that I can have respect for my clan." The Zande children, on the other hand, were split evenly in their responses. Six children said simply "to know," but five said "to be a person of the future." This may be interpreted as meaning to be someone who is knowledgeable and who thus has a better opportunity to improve his life. One child said "I want to be able to read so that if my father dies in a far place and writes me a letter to tell me about it I'll be able to understand it.

Finally, when asked, "Do you read or write outside of school?" answers varied widely from school to school. All the pupils interviewed at Hiyala and Torit East replied that they did read or write outside of school, while only one-fifth to one-third of the pupils in the remaining schools reported doing so, except for Rejaf East, where half of the pupils interviewed said they did read or write outside of school. Among the materials reported as being available at home to read, school books (the new vernacular reading materials used at the project schools) appeared to be the most popular, followed by religious materials in the vernacular language or in English. The question put to the Nuer and Zande children differed slightly due to the fact that these pupils were all in P1. The actual phrasing of the question was: "What will you read or write when you learn how to?" Again, the Nuer children gave quite varied responses. Four children said that they would read "some books." Two said that they would read the Bible. Three children said that they wanted to be able to write a letter or what ever they felt like. One said that he would get a job with his knowledge and writing would help him in this; and five children gave responses which were more appropriate for the second question: two said they would become pastors and teach their people and three said that they would become teachers. Eleven of the Zande children said that they would read the books they had in school and one simply maintained that he would write the Zande language.

4.2.2.3.5 BARI ORAL READING ERROR ANALYSIS

In order to obtain a better understanding of the reading processes and strategies used by the children, a detailed analysis was undertaken of the oral reading errors made by the Bari project and comparison pupils. First, the oral reading performance of each pupil was transcribed by listening to each tape-recorded performance and noting all deviations from the printed story on copies of the text. These errors included all substitutions, word order changes, repetitions, deletions and insertions. The accuracy of each transcript was then verified by the scorer by listening again to all the recordings and making changes where necessary. The scorer then filled out an error classification sheet for each pupil which described each oral reading error and its frequency according to the following classification scheme.

WORDSUB: Substitution of the printed word by another Bari word.

NSSUB: Substitution of the printed word by an utterance which is not a Bari, English, or Arabic word (NSSUB = nonsense substitution).

ORDER: Change in the order of two or more words of the text.

REP: Repetition of a word or phrase of the text.

DELETE: Deletion of a word or group of words of the text.

INSERT: Insertion of extraneous words into the text.

SIMSPELL: WORDSUB or NONSUB beginning with the same letter as the text word it replaced or the rest of spelling judged very similar (e.g., toto for doto).

NC: Noncontext error, i.e., any error other than NSSUB or REP which did not conform to the preceding syn- tactic and semantic constraints of the sentence in which it was located.

PC: Preceding-context error, i.e., any error other than NSSUB or REP which conformed to the preceding syntactic and semantic constraints of the sentence in which it was located but did not conform to the constraints of the entire sentence.

SC: Sentence-context error, i.e., any error other than NSSUB or REP which conformed to the syntactic and semantic constraints of the entire sentence in which it was located but did not conform to the discourse constraints of all preceding sentences of the test.

DC: Discourse-context error, i.e., any error other than NSSUB or REP which conformed to the syntactic and semantic constraints of the sentence in which it was located as well as to the discourse constraints of all preceding sentences.

NSSCOR: Corrected nonsense substitution, i.e., a NSSUB which was spontaneously corrected by the pupil.

NCCOR: Corrected NC error.

PCCOR: Corrected PC error.

SCCOR: Corrected SC error.

DCCOR: Corrected DC error.

NS: No-source error, i.e., any NC error which was not SIMSPELL and consequently could not be attributed to a pupil's use of either contextual or visual information.

MS: Multiple-source error, i.e., any PC, SC, or DC error which was also SIMSPELL and consequently could be attributed to the use of contextual and/or visual information by the pupil.

TOTAL: Total number of errors, i.e., WORDSUB + NONSUB ORDER + REP + DELETE + INSERT.

TOTNONREP: Total number of nonrepetition errors, i.e., TOTAL minus REP.

The data were analyzed to summarize the pupils' performance on both the reading tests and oral reading task and to describe differences in performance among the three groups tested. Therefore, both overall and group means and

standard deviations for all pupils tested were computed for all test scores and oral reading error frequencies for each classification described above. In addition to the error frequencies, error proportions were computed by dividing each error frequency by an appropriate denominator. For variables WORDSUB, ORDER, DELETE, INSERT, NONSUB, NC, PC, SC, DC, NS and MS the denominator used was TOTNONREP. For variable REP, the denominator was TOTAL. For variable SIMSPELL the denominator was TOTSUB. And for variables NSSCOR, NCCOR, PCCOR, SCCOR and DCCOR the denominators were NSSUB, NC, PC, SC and DC, respectively. These proportions were computed to permit group comparisons of error types that would be unaffected by the overall error rate for a certain pupil or group. For example, although Groups PS2 and CS had similar means for the frequency of NSSUB errors ($\underline{M}$ = .18 vs. .14, respectively), this group difference was greater when the proportion of NSSUB errors to TOTNONREP was considered ($\underline{M}$ = .08 vs. .02 for Groups PS2 and CS, respectively).

Group differences were further analyzed by performing two sets of analyses of variance. The first set was performed using the reading and writing test scores and oral reading error frequencies as the dependent variables and group (PS1, PS2 and CS) as the independent variable. The second set used group again as the independent variable but included the proportions of oral reading errors as the dependent variables. For this latter set of analyses, all proportions were first transformed using the arcsine transformation (arcsine of the square root of the proportion) to normalize their distributions. In addition to these inferential statistical tests of group differences, effect sizes (ES) were computed to compare the differences, between each project school and the comparison school by subtracting the mean of Group CS from that of each of Groups PS1 and PS2 and dividing this difference by the standard deviation of Group CS. Each effect size consequently indicates how many standard deviation units the mean of the project school was above (indicated by a positive effect size) or below (indicated by a negative effect size) the mean of the comparison school. As a general rule, an effect size of .5 or less is usually considered to be indicative of a negligible difference while effect size of .5 or greater is usually considered to be indicative of a difference having some practical significance (see Minium, 1978).

Table 4.19 gives the mean number of each of the 20 different categories of oral reading errors counted for all pupils and again separately for Groups PS1, PS2 and CS. Overall, a mean of between 9 and 10 errors (TOTAL) were made by pupils in each of the three groups in reading the passage of 52 words. Most errors were repetition errors (REP), followed by total substitutions (TOTSUB), substitutions similar in spelling to the target word (SIMSPELL), errors which did not fit the sentence context (NC) and errors which did conform to the preceding (PC) or entire sentence context (SC). Since SIMSPELL errors were more frequent than either PC, SC, or DC errors in spite of the fact that SIMSPELL errors were a subset of only TOTSUB errors while any non-repetition error (TOTNONREP) could be classified as PC, SC, or DC), these data suggest that the pupils relied more on visual information and top-down processes. However, there were some notable differences in the types of errors made by pupils in each of the three groups. Most noticeable is the finding that Group PS1 made more REP and NONSUB errors than the other two groups and corrected more errors which fit the preceding but not the following context of its sentence (PCCOR). Group PS2 made fewer deletion errors than the other two groups (DELETE) but more multiple-source errors (MS).

Table 4.19

Bari Oral Reading Error Frequencies

Variable	All Pupils (43)		Rejaf East (Project) (18)			Rejaf West (Project) (11)			Bungu (Comparison) (14)	
	M	SD	M	SD	ES	M	SD	ES	M	SD
1. WORDSUB	3.02	2.33	3.22	2.98	.37	3.09	2.26	.28	2.71	1.38
2. ORDER	.02	.15	0	0	--	.09	.30	--	0	0
3. REP	5.46	2.59	6.33	2.91	.85	5.45	1.97	.47	4.36	2.31
4. DELETE	.60	1.33	.39	1.24	-.03	.09	.30	-.71	1.29	1.68
5. INSERT	.47	1.08	.11	.32	-.46	.27	.65	-.49	1.07	1.64
6. SIMSPELL	1.77	1.62	1.61	1.94	.11	2.00	1.48	.16	1.79	1.31
7. NSSUB	.47	.93	.89	1.28	2.08	.18	.40	.11	.14	.36
8. NC	1.44	1.94	1.06	2.39	-.58	1.27	1.19	-.46	2.07	1.73
9. PC	.98	1.08	1.00	1.33	.19	1.09	.94	.31	.86	.75
10. SC	1.09	1.41	.67	1.14	-.65	.91	1.14	-.51	1.[illegible]	1.72
11. DC	.16	.53	.11	.32	-.22	.09	.30	-.24	.29	.83
12. SC	.93	1.39	.94	1.70	-.16	.64	.92	-.39	1.14	1.29
13. MS	.72	.93	.50	.86	-.22	1.18	1.25	.86	.64	.63
14. NSSCOR	.16	.48	.39	.70	--	0	0	--	0	0
15. NCCOR	.19	.39	.22	.43	.22	.18	.40	.11	.14	.36
16. PCCOR	.30	.64	.50	.86	2.00	.18	.40	.11	.14	.36
17. SCCOR	.07	.26	.11	.32	.15	0	0	-.26	.07	.27
18. DCCOR	0	0	0	0	--	0	0	--	0	0
19. TOTNONREP	4.11	3.56	3.72	4.18	-.39	3.55	2.42	-.44	5.07	3.45
20. TOTAL	9.58	4.08	10.06	5.06	.17	9.00	2.65	-.11	9.43	3.80

Note. Numbers in parentheses indicate the number of pupils in each group.

Table 4.20 presents oral reading error proportions which are in some ways more useful than simple frequencies in comparing differences across groups and across different types of errors. By dividing error frequencies by appropriate denominators, the resulting oral reading error proportions reported in this table permit comparisons that are affected by the overall error rate for a given group. From this perspective, it is seen that overall repetition errors (REP) constituted 61% of all errors made and word substitutions (WORDSUB) made up 83% of all non-repetition (TOTNONREP) errors. Evidence of sensitivity to visual information and bottom-up processing in reading is indicated by the fact that over half (59%) of all TOTNONREP errors were SIMSPELL errors while only 8% of TOTNONREP errors were deletions (DELETE) and another 8% were insertions (INSERT). This pattern of errors indicates fairly high dependence on visual information since most substitutions were visually similar to the target word they replaced and the low proportions of deletions and insertions indicate careful attention to the visual stimuli of reading.

Evidence of reading strategies using contextual information and top-down reading strategies is indicated by 30% of TOTNONREP errors showing sensitivity to preceding sentential contextual constraints (PC errors), 22% of TOTNONREP errors conforming to all sentential contextual constraints (SC errors) and a small 3% conforming to the contextual constraints of the entire preceding discourse (DC errors). In contrast, evidence of insensitivity to contextual constraints is indicated by the fact that 13% of TOTNONREP errors were nonsense substitutions (NSSUB, i.e., not real Bari words) and 33% of TOTNONREP errors were Bari words which did not conform to any sentential or discourse contextual constraints (NC errors). This means that almost half (46%) of all errors made were either nonsense words or Bari words which did not fit any of the surrounding context.

The pattern of error corrections also provides some insight into the types of information and strategies used by these children to read. Both Goodman (1965) and Weber (1970b) have reported that children are more likely to correct errors which do not conform to the meaning of what they are reading than errors which do fit the syntactic and semantic constraints of the passage. If this were true of the children in the present study, we would expect that a higher proportion of NONSUB, NC and PC errors would be corrected than SC or DC errors. In general, this pattern does seem to hold with 36% of NONSUB errors corrected (NSSCOR), 18% of NC errors corrected (NCCOR) and 25% of PC errors corrected (PCCOR) in contrast to only 12% of SC errors corrected (SCCOR) and 0% of DC errors corrected (DCCOR). Thus, it appears that these children had at least some sensitivity to the meaning of what they were reading and tended to correct errors which did not conform to the meaning of the passage more often than errors which did.

There were also a number of significant differences among the three groups which are indicated by the significant F ratios given in Table 4.20. Both project groups (Groups PS1 and PS2) had a higher percentage of word substitution errors (WORDSUB) than did the Group CS as well as a higher percentage of nonsense substitutions (NSSUB) and repetition (REP) errors. In contrast, Group CS had a higher percentage of deletion (DELETE) and insertion (INSERT) errors than did both project groups and Group PS1 had a lower percentage of SIMSPELL errors than did both Groups PS2 and CS. Finally, Group CS had a higher percentage of noncontext (NC) errors than did either of the

Table 4.20

Bari Oral Reading Error Proportions

Variable	All Pupils			Rejaf East (Project)				Rejaf West (Project)				Bungu (Comparison)				
	M	SD	n	M	SD	ES	n	M	SD	ES	n	M	SD	n	df	F[a]
1. WORDSUB	.83	.24	39	.94	.11	1.08	14	.90	.23	.92	11	.66	.26	14	2,36	7.23**
2. ORDER	.01	.04	39	0	0	--	14	.02	.08	--	11	0	0	14	2,36	1.29
3. REP	.61	.24	43	.69	.24	.87	18	.62	.18	.57	11	.49	.23	14	2,40	3.66*
4. DELETE	.08	.16	39	.04	.09	-.67	14	.01	.03	-.81	11	.18	.21	14	2,36	6.55**
5. INSERT	.08	.16	39	.02	.05	-.74	14	.07	.16	-.47	11	.16	.19	14	2,36	3.40*
6. SIMSPELL	.59	.34	39	.41	.31	-.72	14	.74	.35	.31	11	.64	.32	14	2,36	3.53*
7. NSSUB	.13	.27	39	.29	.39	3.86	14	.08	.17	.86	11	.02	.07	14	2,36	4.14*
8. NC	.33	.30	39	.16	.19	-.94	14	.38	.33	-.23	11	.45	.31	14	2,36	3.75*
9. PC	.30	.30	39	.37	.37	.86	14	.34	.29	.71	11	.19	.21	14	2,36	1.17
10. SC	.22	.25	39	.16	.22	-.56	14	.19	.23	-.44	11	.31	.27	14	2,36	1.62
11. DC	.03	.07	39	.02	.06	-.12	14	.02	.08	-.12	11	.03	.08	14	2,36	1
12. NS	.21	.26	39	.25	.30	.10	14	.13	.16	-.31	11	.22	.29	14	2,36	1
13. MS	.20	.24	39	.14	.17	-.06	14	.35	.32	1.11	11	.15	.18	14	2,36	2.82
14. NSSCOR	.36	.46	11	.57	.46	--	7	0	0	--	2	0	0	2	2,8	2.69
15. NCCOR	.18	.34	27	.37	.46	.93	7	.12	.23	.07	8	.10	.29	12	2,24	1.79
16. PCCOR	.25	.36	25	.44	.41	1.39	9	.17	.36	.22	8	.12	.23	8	2,22	2.19
17. SCCOR	.12	.31	21	.25	.42	.47	6	0	0	-.31	5	.10	.32	10	2,18	1
18. DCCOR	0	0	5	0	0	--	2	0	0	--	1	0	0	2	--	--

Note. These proportions were formed using the named variable in the numerator. The denominators were TOTNOREP for variables 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13; TOTAL for variable 3; WORDSUB for variable 6; and variable 7 through 11 for variables 14 through 18, respectively.

[a]F-ratios were computed using arcsin transformations of the proportions reported here.

*$p < .05$

**$p < .01$

two project groups. However, in spite of the group differences noted here, the overall profile of oral error patterns is quite similar across the three groups with a greater tendency to use visual information in reading than to use contextual information.

A final perspective on the reading skills and strategies of these children can be gained by comparing their pattern of oral reading errors with those of other primary-school children reported in the literature. While Leu (1982) reported that most of the many studies of children's oral reading errors use their own system of scoring which makes comparisons difficult, there does appear to be enough similarity in the way a number of studies scored graphic similarity and contextual appropriateness to make some comparisons possible. Thus, the relevant findings of six of these studies are summarized in Table 4.21. All were conducted in the U.S. except for Clay (1968, which was done in New Zealand) and all included children at the end of their first year of schooling, except for Hood (1975) which examined second-grade children (comparable studies of third-grade children could not be found in the literature). With respect to the proportion of substitution errors which showed some graphic similarity to the text word, the Bari children are situated in the middle of the range of the other five studies. However, the proportion of the Bari errors which conformed to at least the preceding contextual constraints of the sentence seems low when compared to the first-grade children. (Although the Bari children seem more similar to the lower proportions of contextually appropriate errors made by the second-grade children reported by Hood, this may be due to what appear to be the more difficult reading passages Hood used since she reported that they were of high third-grade readability.)

Thus, while it must be admitted that these comparisons should be interpreted cautiously due to many uncontrolled factors (e.g., the difficulty of the reading passages used in the various studies), they do suggest that the Bari children at the end of their third year of schooling were in general less sensitive to the use of contextual information in reading than average American children toward the end of their first year of school.

Table 4.21

Oral Reading Error Proportions for Selected Studies

Variable	Clay[a] (1968)	Biemiller[a] (1970)	Weber[b] (1970a)	Weber[b] (1970b)	Cohen[a] (1974-75)	Hood[b] (1975-76)	Present Study[b]
Grade	1	1	1	1	1	2	3
n	100	32[c]	19	43[d]	50	45	39
Graphic similarity	.41	.50	.53	--	.70	.50	.59
NC	--	.18	--	--	.38	.49	.33
PC	--	.82	.68 (.91[e])	.90[e]	.62	.51	.55
SC	.72[e]	--	.64[e]	.62[e]	--	.22	.25
DC	--	--	--	--	--	.12	.03

Note. To make results comparable across studies, SC contains both SC and DC errors and PC contains PC, SC, and DC errors. This system is different from that used for Tables 2 and 3 where, for example, PC errors are only those PC errors which were not also SC or DC errors.

[a]Only substitution errors were judged for contextual appropriateness.

[b]All non-repetition errors were judged for contextual appropriateness.

[c]Only children in "post-nonresponse" phase were included.

[d]Includes the 19 children of Weber (1970a).

[e]Only syntactic appropriateness was considered.

4.3 THIRD IMPACT EVALUATION

4.3.1 DESCRIPTION OF EVALUATION

4.3.1.1 Evaluation Design

Following the design used for the Bari and Lotuho evaluations in 1980 and 1981, the intention of the third impact evaluation was to compare the reading performance of Primary 1 Zande and Nuer children who had been using the IRL/SIL literacy materials since the beginning of the 1982 school year in selected "project" schools with that of children in other "comparison" schools who had been receiving instruction with other materials. The IRL has one project school for each language; for Zande it is the combined primary and middle school of Masiya, located in Yambio. The Nuer project is based at Nasir West Primary school in the town of Nasir.

The decision to attempt a replication of the Bari and Lotuho evaluations with Zande and Nuer was in part based on assurances we had received during the previous year that comparison schools would be available at both project sites in the fall of 1982. As it turned out this was true only for Yambio, where three schools providing vernacular instruction were located within a fifteen mile radius of the project school. However, late in 1982 the educational authorities in Nasir decided to postpone vernacular instruction in the designated companion schools for another year. Nevertheless it was decided to evaluate reading performance at the Nuer project school in the hope that data collected their might be useful in a follow-up evaluation planned for 1983 which would examine the progress of the selected 1983 Primary 1 pupils as Primary readers.

4.3.1.2 Instruments

With one exception, the same type of instruments used for collecting background and outcome data in the first and second impact evaluations were maintained in this evaluation. Once again background data on schools--number of pupils, teachers, subjects taught, materials available--were obtained through interviews with school principals. Early in the testing it became obvious that the pupils at both sites were giving the same responses to the questions asked about their reasons for attending school and learning to read and write as they had during the previous year. Since the pupils frequently found these questions confusing and often produced answers that defied meaningful interpretation, it was decided to omit them in order to speed up the testing. The literacy tests administered at Yambio and Nasir were, as in the previous evaluation, developed at each site in close conjunction with the IRL Language Officer and the SIL Consultant. Their format and method of construction are described in greater detail below.

4.3.1.2.1 THE ZANDE TEST

The first step in developing the literacy tests was to determine what lesson in the IRL Primer the students were beginning. The Literacy Officer then selected from the letter lessons previously studied 12 syllables which represented consonant-vowel (CV) syllables that the pupils in the project school should theoretically be able to read aloud correctly. The purpose of this section of the test was to obtain an indication of the pupils' ability to recode letters into sound. Since both the "letter lessons" in the IRL primers and at least one alternative method witnessed in a Zande comparison school emphasize the teaching of CV syllables, the use of such a test seems justified.

The second subtest consisted of 10 "known" words, i.e., words which had been taught in previous lessons and 10 "unknown" (often referred to as "built") words--words which contained letters the pupils had been exposed to. The latter had often been used in stories but never analyzed and taught in class. All of the unknown words were high frequency, basic concepts familiar to the pupils. The section containing the known words was included to provide a measure of the project pupils' word recognition ability and the subsection with the unknown words was intended to furnish an index of the pupils' word attack skills. All of the words in both of these sections were selected by the IRL Language Officer and/or the SIL Consultant.

The final section of the test consisted of a short passage and seven comprehension questions. The passages were held to a length close to that of the passages the pupils had been reading in the IRL primers. The Zande passage was 76 morphemes long, 7 morphemes longer than the passage in Lesson 14, in Book 2 of the primer, the last story they had read. (The pupils at Masiya School were just beginning Lesson 16 when Cowan arrived.) About 7% of the words in the test passage were new, unknown words, but all of these contained letters that the students had been taught. Three of the unknown words were content words (the nouns, Nako and Bako, the names of two children who are the main characters in the story and the noun ango ("dog") and four were grammatical morphemes ka "in order to" and uko "to pour from" restricted to the sense of "many small objects pouring from a container", ti "to fall" in the sense of a single object and ora "to run"). One of the comprehension questions, number six, could not be answered by quoting a sentence or part of a sentence in the story. However, the answer was transparently obvious from the context. Pilot testing with 6 children revealed that all subsections of the test were of an appropriate level of difficulty. The complete Zande literacy test with English glosses is shown in Appendix 4.A.

4.3.1.2.2 THE NUER TEST

The SIL Consultant, Marian Farquhar, had, with the encouragement of Senior SIL Linguistic Consultant Jocelyn Clavinger, attempted to group the pupils receiving literacy instruction in Nasir according to ability. The first and most advanced group consisted of 21 P2 pupils who were at the time beginning Book 4 of the IRL Nuer primer series. The second, intermediate group was comprised of 17 P2 pupils who were working on Lesson 20 of Book 2. The third group encompassed roughly 100 beginning P1 children who had no books and were reading beginning IRL primer lessons taught from the blackboard. Within this last group were repeaters from P2 who had had no previous reading instruction

and 16 pupils who had been promoted to P2 but had made such little progress in reading during the previous year that it was felt that they should repeat beginning instruction.

Since there was no possibility of obtaining comparison groups similar to those found in Yambio, It was decided to collect data on the reading performance of as many P1 pupils as possible, in the hope that this might be useful for a follow-up study in 1983. However, an obligation was also felt to honor the SIL Consultant's request that the testing provide practical feedback of immediate use to the program at Nasir--specifically that it provide a basis for determining whether the groupings truly reflected distinctly different levels of ability. Accordingly, three different tests were designed--one for each of the aforementioned groups.

The test constructed for the highest group dispensed with the CV syllable subsection, since virtually every alphabet letter in every position is covered by the time the pupils reach Book 4. As can be seen from Appendix 4.B, the known and unknown words are mono- and polysyllabic, sometimes polymorphemic and, again all common concepts the children would know. The passage used in this test was an altered version of a story which the Nuer Language Officer had written for Book 3. It is a little over 200 words and has a clearly defined narrative structure. The longest polysyllabic words in the story are all names of places in the immediate vicinity of Nasir, which the students should be familiar with. Three of the comprehension questions--numbers three, four and six--required the pupil to make inferences from the story. Acceptable answers to questions three and four could be inferred by having understood certain paragraphs in the story, but question six required the reader to have understood the entire story and recognized how serious the main character is about education and that his headmaster wishes to reward him for this.

The test created for the second, intermediate group had a shorter passage, comparable in length to the stories the students were reading in Book 2. It is the same length as the Zande literacy test. The known and unknown words are largely monosyllabic. There are seven questions for the comprehension passage.

The test designed for the lower level students contained a CV syllables section, but since the pupils had been taught only three consonant letters and two vowel letters at that time, they were tested on just six syllables using combinations of those symbols. All of the known and unknown words were monomorphemic and monosyllabic. The comprehension passage was 64 morphemes long; it was followed by seven comprehension questions, none of which required inferencing. The three tests developed for the pupils at Nasir West are shown in Appendices 4.C through 4.E.

4.3.1.3 Data Collection

Background data on teachers, pupils and availability of materials were gathered through interviews with headmasters and teachers using the same

questionnaire used in the previous evaluations. There were discrepancies on certain points as reported by different individuals, so that the complete accuracy of the information displayed in these tables cannot be assured. At best these data provide a general picture of the conditions found at the schools visited during this evaluation. No attempt was made to collect background data on teachers at Nasir West, since this was done in the second impact evaluation. It is worth noting, however, that a different number of teachers is shown for Nasir West this year than for the previous year. This is difficult to explain, but
last year's data should be quite accurate since they were supplied by the SIL Consultant, Marian Farquhar, who is extremely meticulous in such matters. As in the previous year, accurate data on attendance was available only for the project classes at Nasir West.

Process data were collected at three of the four Zande schools and at Nasir West by tape recording and taking notes while observing a vernacular literacy lesson.

Essentially the same interview procedures employed in the past two evaluations were used with the literacy tests to collect outcome data. At each school the testing took place in a room set apart from the areas where teaching was going on. The pupils were tested individually by the Language Officer (in Nasir by Marian Farquhar) while an audio recording was made of the entire interaction. As each pupil read the test aloud, the syllables and words incorrectly read were recorded on a specially prepared tally sheet. An attempt was also made to keep a written record of the oral reading errors made on the passage, but due to the variation in reading speeds, this was not as accurate at those taken for the first three sections of the test. When the pupil had finished reading the passage, the Language Officer asked each of the comprehension questions and recorded incorrect answers. The Language Officer and evaluator then conferred to determine if our respective tallies of oral reading errors were identical. All discrepancies were checked by replaying the tape of that section. In order to simulate the conditions under which the P1 pupils had done most of their reading at the Zande comparison schools and at Nasir West and to avoid potential confusions that might arise because two letters in the printed test, g and a, differed in type from the written versions they were used to, some or all of the subsections of the P1 test were put on the blackboard. Cowan would then point to the items to be read and the Language Officer or the SIL Consultant would note and record any errors.

4.3.2 RESULTS

4.3.2.1 Background Data

Characteristics of the five schools included in the third impact evaluation are described below with a summary of background data presented in Table 4.22.

Table 4.22

Background Data

Variable	School				
	Masiya (Zande Project)	Maingbangaru (Zande Comparison)	Susa (Zande Comparison)	Singbi (Zande Comparison)	Nasir West (Nuer Project)
	General Teacher Data				
Number of Teachers	12	8	3	8	8
Above teachers with regional mother tongue	12 (100%)	8 (100%)	3 (100%)	8 (100%)	-
Trained Teachers	8 (67%)	7 (87.5%)	3 (100%)	6 (75%)	-
Experience (years)					
Mean	14.5	28.67	26	26.25	-
Median	17.5	30.5	28	28	-
Range	1/3 - 30	6 - 50	20 - 30	4 - 50	-

(cont'd)

Table 4.22 (cont'd)

Background Data

	School				
	Masiya (Zande Project School)	Maingbangaru (Zande Comparison)	Susa (Zande Comparison)	Singbi (Zande Comparison)	Nasir West (Nuer Project)
	General Pupil Information				
Enrollment:					
P1	60	80	38	80	233[1]
P2	27	18	37	35	138[1]
P3	36	27	25	25	55
P4	--	14	15	17	40
P5	18	15	--	5	40
P6	36	--	--	13	40
Total:	175	154	104	175	546

[1]These represent official enrollment figures for Nasir West but attendance fluctuates considerably every day. As few as 60 to 80 P1s and between 50 to 60 P2s may attend after breakfast. If this is taken into consideration, total enrollment is reduced considerably with a conservative estimate being 245.

4.3.2.1.1 ZANDE SCHOOLS

The following four primary schools in and around Yambio were visited for the purpose of examining P1 pupils and observing literacy classes. All of the schools had been in session since July.

4.3.2.1.1.1 Masiya

Masiya school is a combined primary and middle school. It is located on the edge of Yambio, a town with a population at somewhere between ten and twelve thousand. The capital of Western Equatoria, Yambio, houses a large number of government departments, among them, the Police (both district and provincial offices), Labour, Health, Wildlife and Tourism, Co-operatives, Social Welfare, Agriculture, Forestry, Commerce and Veterinary Medicine. The school is located near several villages which form the outskirts of Yambio. It is about 200 yards off the main road leading into the center of town.

There are five buildings on the school compound, one of which is used as at teacher's room and a storeroom for equipment. Two of the other four buildings have mud walls and thatched roofs. The first of these has one classroom which is used for the middle school pupils and a small room that formerly used to house SIL/IRL shortwave radio but is presently the living quarters of the school caretaker. The middle school classroom has a large slick blackboard fixed permanently to one wall. Benches and writing surfaces have been constructed out of split logs supported by forked tree crotches anchored securely in the hard packed earth. The mud walls around the class are raised to a height of about 3 feet. The other building with mud walls is located at the far end of the compound. It is about 100 feet long and contains two classrooms at either end, each with a fixed blackboard and one small room in the center which is used solely for storing equipment. The other two classrooms are simply shelters--thatched roofs supported by poles--with a thatched wall dividing this enclosure into two teaching areas. The pupils sit on the ground, often on bricks and are either taught from a blackboard resting on a tripod or from their books. A few classes still meet under large shade trees, but construction on yet another shelter-type classroom is underway and it would appear that the school is continuing to expand its classroom facilities.

Of the four Zande schools visited, Masiya is the largest and best equipped both in terms of teaching materials and number of teachers. Only Masiya had vernacular teaching materials.

4.3.2.1.1.2 Maingbangaru

Maingbangaru Primary School is located about seven miles northwest of Yambio on the road to Nzara, a village of reportedly 8000 inhabitants. The school is located in a spacious, open area on the side of the road. It services the villages between Nzara and Yambio, providing instruction for 154 pupils in P1 through P5 (P6 is planning for 1983). There are three shelter-type classrooms, one of which (the P5 class) has benches and writing surfaces made of split logs. A thatched-roof shelter for the P3 class was under construction. The other classes were held under large trees where log benches have occasionally been provided. P1 and P2 classes were receiving literacy training and although both headmasters claimed that the students had

no literacy primers, Cowan saw a number of P2 children with what appeared to be Nuer primers produced years ago by missionaries. I was told that the school has seven trained teachers. The two headmasters, Julias Yangarayo and Francis Yorda, were trained at TTCs in Malakal and Maridi. One teacher claimed to have been trained at Dilling in Khartoum and the remaining four cited a TTC in Yambio as the source of their preparation. Cowan was unable to determine whether Yambio has a TTC Another person told me that these last four had been trained by missionaries.

4.3.2.1.1.3 Susa

Susa Primary School is located about three miles to the northwest of Nzara. It lies about 100 yards from the main road. The smallest of the four Zande schools, Susa has a staff of only three teachers, all of whom profess to have TTC training. Instruction is offered from P1 through P4 to about 104 children. There are two thatched roof shelter classrooms on the compound, one of which was partitioned into two classrooms by a dividing wall. Both buildings contain the split log bench and writing surfaces facilities seen at other schools. The headmaster claimed that seven subjects were offered, but the teachers cited only Math and English as the subjects which they were teaching at different grade levels. Although the school was officially in session, Cowan saw no instruction going on while he was there. There were only about 10 pupils at the school during my first visit and around 25 on my second.

4.3.2.1.1.4 Singbi

Approximately three miles South of Nzara just off the side of a rapidly deteriorating road that passes through a government plantation of coffee trees and stately palms planted in regularly spaced rows is Singbi Primary School. The large, open compound, which abuts on a small village, contains two two-room buildings, both having thatched roofs supported by poles. One of these has wood benches with writing surfaces. A third building with mud walls and a thatched roof serves as a teacher's room and a storage area for equipment. Cowan observed at least one class--English for P1 pupils--being taught under one of the two large trees growing in the compound. There were three lackboards and some charts with illustrations available.

The school is about the same size as Masiya, with 185 pupils in grades P1 through P6. There are only 8 teachers, so each often teaches more than one subject to different grades. Literacy instruction was being offered only to P1 pupils, but P2 instruction was planned for the coming year provided that the IRL materials could be obtained. As at the other schools, Cowan was told that there were no books for any subjects, but a number of the P2 and P3 children appeared to have assorted Math and English tests. Still, the lessons Cowan observed were always taught from a blackboard or a chart. The teachers all appeared to be teaching from a particular text.

4.3.2.1.2 THE NUER SCHOOL

Nasir West Primary School is located about 300 yards northeast of the airstrip at Nasir, close to a constantly expanding village of thatched huts which forms one part of the outer perimeter of the town. Nasir town is situated on a bend of a tributary of the Nile about 30 miles from the

Ethiopian border. It is fairly large, possessing a number of shops, a police station, a military cantonment, a mosque, a Lutheran mission, churches, a high school and two primary schools. Boats occasionally come up the river from Malakal and stop at Nasir.

The school consisted of three buildings, all of which had mud or mud and mortar walls supporting tin roofs. The first of these, a "U" shaped complex, housed classrooms, the headmaster's room, a storage room and a teacher's room. The other two buildings were one room structures approximately 80 by 20 feet. Sitting on the dirt floor or on stacks of bricks they brought with them, as many as 120 children occupied these one-room schoolhouses. Blackboards wre hung on the wall at the front of the class but removed at the end of the school day. Some classes were taught under trees or in the shade of a building.

As Table 4.23 shows, six subjects were offered in grades P1 through P6. In addition to Simon Kuoon, the IRL Language Officer and Marian Farquhar, both of whom teach only literacy, the school had a staff of eight teachers. All of these instruct different subjects at different grade levels. When Cowan arrived in early November the school had been in session only about 53 days, due to various kinds of interruptions ranging from political disturbances to planting and harvesting holidays.

Attendance at the literacy classes had increased considerably since 1981. The official roster showed 150 boys and 83 girls in P1. Average attendance before was 100 to 120; after breakfast this dropped to between 60 and 80. The same pattern was seen in P2; of the 138 registered children about 70 would attend before breakfast, between 50 and 60 after breakfast. Faced with the problem of achieving effective instruction for such large numbers, the two literacy teachers had grouped the pupils in the manner described earlier. They had just received some added assistance in the form of four men who were observing classes to learn the methodology practiced at the school. These men were employed by Mr. Michael O'Brien, a Community Development Specialist from the Lutheran World Federation. Mr. O'Brien is interested in using literacy as the main vehicle of his community development programs among the Nuer and was eager to obtain training in literacy methodology for his assistants at Nasir West. These assistants had almost reached the point where they were ready to take some classes at the school. It was Marian Farquhar's intention to break up the existing groups into smaller, more evenly grouped classes and to assign four of these to the new teachers.

4.3.2.2 Process Data

4.3.2.2.1 THE ZANDE SCHOOLS

Different lessons were observed at Masiya, Maingbangaru and Singbi. The letter lesson at Masiya was a very close repetition of what has already been described in the second impact evaluation. The writing lesson at Masiya was also virtually identical to what had been observed the previous year. The teacher would write selected letters on the blackboard and then ask the children to identify them. Having done this, the children would first watch

Table 4.23

Subject, Curricula and Materials

Subject	Grades Receiving Instruction in this Subject	Language of Instruction	Minutes per week	Pupil's Materials	Teacher's Materials
Masiya School (Zande Project)					
English	P1 - P6	Zande	240	None	--
Math	P1 - P6	Zande	240	None	--
History	P3, P5, P6	Zande	240	None	--
Geography	P3, P5, P6	Zande	240	None	--
Science	P3, P5, P6	Zande	240	None	--
Religion	P1 - P6	Zande	240	None	--
Arts	P1 - P6	Zande	240	None	--
Arabic	P1 - P6	Zande	240	None	--
Vernacular	P1, P2	Zande	240	IRL Primers	Teacher's Guide
Maingbangaru School (Zande Comparison)					
English	P1 - P4	Zande	240	None	1 copy
Math	P1 - P6	Zande	240	None	1 copy
History	P4, P5	Zande	240	None	1 copy
Geography	P4, P5	Zande	240	None	1 copy
Science	P6	Zande	240	None	None
Religion	P1 - P6	Zande	240	None	1 copy
Arabic	P4, P5	Zande	240	None	1 copy
Vernacular	P1	Zande	240	None	1 copy

(cont'd)

Table 4.23 (cont'd)

Subject, Curricula and Materials

Subject	Grades Receiving Instruction in this Subject	Language of Instruction	Minutes per week	Pupil's Materials	Teacher's Materials
		Susa School (Zande Comparison)			
English	P1 - P4	Zande	240	None	None
Math	P1 - P4	Zande	240	None	None
Geography	P3, P4	Zande	240	None	None
Science	P3, P4	Zande	240	None	None
Religion	P1 - P4	Zande	240	None	None
Vernacular	P1 - P4	Zande	240	None	None
		Singbi School (Zande Comparison)			
English	P1 - P6	Zande	240	None	1 copy
Math	P1 - P6	Zande	240	None	1 copy
History	P3 - P6	Zande	240	None	1 copy
Geography	P3 - P6	Zande	240	None	1 copy
Science	P3 - P6	Zande	240	None	1 copy
Religion	P1 - P6	Zande	240	None	1 copy
Vernacular	P1	Zande	240	None	1 copy

and then trace in the air the purposely exaggerated movements of the instructor's hand as he wrote the letter. Next, the pupils would write the letter in their books, or, more frequently, in the dirt (usually on lines they had drawn to simulate ruled paper.) The procedure was then repeated for the entire words and finally, short sentences using familiar words with the same letters. The teacher is supposed to go around and check the pupils' work periodically. These check-ups are quite important, since many of the students have serious problems with mirror image letters, i.e., b, d, p, and letters distinguished by only a single stroke, e.g., r, n, m. Quite a few children were seen to be writing vowels like e and a backwards and one child was actually writing letters rotated at a 90-degree angle from their normal orietation. It appeared that the teacher had either decided that he was unable to provide sufficient monitoring for all pupils, or had adopted the policy that he would only help those students he felt could be helped. Some pupils who knew how to make the letters correctly occasionally helped those who were having difficulty. This seemed to me at the time to be a policy worth encouraging.

At Maingbangaru, an activity was observed that may have been a review lesson in recognizing syllables or perhaps a rather lengthy review followed by the introduction of some new letters. This lesson was taught to a combined class of P1 and P2 pupils, all of whom presumably had no books. The teacher wrote about a dozen CV syllables on the blackboard. He then pointed to a syllable and asked for a volunteer to read it. Pupils who volunteered but were unable to read a syllable were told to sit down and another pupil was called upon. When a correct reading was produced, the teacher would then have the entire class chant the syllable at least a half dozen times. The lesson would proceed this way until all of the syllables (there were about 12 or 15) had been read and repeated. Then the teacher went back and began calling individual pupils and having them read a syllable. Often the student would be able to read only the vowels. When this happened, the teacher would attempt to get the pupil to sound out the initial consonant. If the pupil was unable to, the teacher would call on other students until he finally got a correct rendition. The teacher would then break down the CV syllable into its component parts and have the class repeat them. In doing so, he would commit one of the basic errors that proponents of phonics have attempted to correct for years -- the insertion of a schwa after a consonant. Thus a CV sequence like /ra/ would read /r a/. The consequences of this procedure were evident in the performance of some of the students in the syllable subsection of the reading test. The entire lesson lasted about 40 minutes. No reading of meaningful material was observed during the lesson.

In the first and second impact evaluations it was argued that the high priority placed on oral repetition of syllables and words does little to promote real learning and in fact may be detrimental when the sentences in the primers recycle words frequently. Nowhere was this more evident than in an English lesson for P1 pupils which took place a Singbi primary school. The teacher was using a chart of illustrations to prompt production of sentences with place expressions in response to "where" questions. He would point to a picture of a man under a tree and ask, "Where is the man?" and the entire class would then chorus the appropriate answer, which they had long ago memorized. The fact that this repetitious chanting was inculcating language behavior that could not be extended to new contexts was quickly demonstrated when the evaluator asked the pupils some of the same kind of questions using

vocabulary they all knew. For example, having pointed to their teacher and indicated that he was standing under the tree, the children were asked "Where is the teacher?" All of the children came back with a word-for-word repetition of the sentence they had been memorizing with the chart--"The man is standing under the tree." Identical responses were obtained to questions like "Where am I? Where are you?"

4.3.2.2.2 THE NUER SCHOOL

At Nasir an interesting twist to ending a lesson was observed which deserves reporting, since it effectively engaged the attention of a large class in some conscious learning. The Language Officer, Simon Kuoon, was teaching one of the primer stories from the blackboard. He wrote the two paragraph length story on the blackboard, having first divided the class into two groups. After allowing the pupils some time to read the story silently, he asked the comprehension questions, which were answered by individual volunteers. Next, one group of children (half of the class on one side of the room) read one sentence of the story in chorus as the Language Officer pointed to each successive word in the sentence. The next sentence was chorused by the other group and this procedure was repeated until all of the sentences had been read. Individual reading followed. When a child faltered, the Language Officer would ignore the other pupils' cries to be called on and help the reader analyze and sound out the word so that he almost always got it. The Language Officer seemed to seek out both strong and relatively weak readers for this activity. This sentence-by-sentence reading consumed a fair amount of time, as the Language Officer apparently wanted to give as many children as possible an opportunity to read. Finally pupils were called on to read the entire story.

The lesson concluded with a word reading activity which Cowan assumed originated with Simon Kun. He would ask: "Now who can show me the word _____?" Fifty hands shot into the air as the entire class volunteered. The pupil selected would then go to the board and point to a word. If it was the correct word, the Language Officer erased it, if not, the child went back to his seat and another pupil was called on. There was lots of good natured chiding by the teacher and the entire class of those students who made incorrect choices, all of which is perfectly acceptable among the Nuer. The game went on this way until all of the words were erased from the board. This activity seemed to have two things to recommend it: it enlivened the class at the end of a long lesson, while providing the teacher with a check on the word reading ability of a great many pupils.

4.3.2.3 Outcome Data

4.3.2.3.1 THE ZANDE LITERACY TEST

For several reasons it was not possible to obtain equal-sized samples across schools. Only 16 P1 pupils were tested at the project school.* The Language Officer and the two teachers at Masiya stated that there were, in fact, additional P1 pupils receiving literacy training, but these were, in their opinion, "underaged," and had therefore not made as much progress as the

children they selected for testing. Therefore, only those pupils that the Language Officer and the teachers declared were capable of reading anything at all were tested and so there is no way of knowing whether this sample was biased. The group of P1 children who took the test were divided into two categories: children deemed mature enough to take their primers home with them after school (P1A pupils) and others who were not granted this privilege (P1B pupils).

Only 10 P1 children turned up at Susa Primary School during Cowan's visits there. The explanation given for the poor attendance on both days was that the children had a tendency to skip school after a heavy rain to hunt termites. There were, however, a number of P2 pupils at the school and out of curiosity to see how well they would perform on the test we had developed, eight of them were tested.

Maingbangaru produced the largest pool of P1 pupils. In the course of three visits we tested 24 pupils, five of whom were repeaters from the previous year. Singbi was the last school visited and it was there that the school officials, no doubt concerned about how the possible low performance of their P1 children might reflect upon the reputation of the school, attempted a deception. On our second visit, the Language Officer and Cowan noticed that the first child sent to us seemed very big for a P1 pupil. Furthermore, he read with a facility that far outstripped all of the eight P1 pupils we had examined on the precious day. Suspecting that we might have a P2 or P3 pupil on our hands, the Language Office asked the boy to fetch his class writing book after he had finished being tested. The child walked directly to the P3 class. When he was half way across the compound a number of the other children who were waiting to be tested shouted out to him in Zande: "The principal said we were supposed to go sit in P1 today!" We immediately stopped the testing, went to the P1 class and compiled a new list of children to be tested. Nevertheless, six more P2 pupils were slipped in that day. They were all discovered by the same ruse or by asking trick questions which elicited their true class. The attempted deception thus reduced the actual number of P1 pupils at Singbi from 22 to 15. The breakdown by grade of the total number of Zande pupils tested at all schools was therefore as follows: 16 P1 at Masiya, 24 P1 at Maingbangaru, 10 P1 and 8 P2 at Susa and 15 P1 and 7 P2 at Singbi (Total $\underline{n}$ = 80).

An inspection of the raw data revealed that the performance of some of the P2 children at Susa was indistinguishable from their P1 counterparts. Moreover, the performance of P1s at all comparison schools was often so poor, that one might actually entertain the hypothesis that the project children had outperformed all of the children tested at the comparison schools. To test this, analyses of variance (ANOVAs) were run using the total number of children tested (80) with group as the independent variable and scores on all sections of the test as the dependent variables (see Table 4.24). Significant differences were found only for the Nonsense Syllables and Known Words sections of the literacy test $\underline{p} < .01$. Post hoc Fisher LSD tests revealed significant differences only between Masiya and all other schools on both

*Actually one of the 16 children tested belonged to the "underaged" group. There were 8 P1As and 7 P1Bs. Hence the $\underline{t}$-tests used to compare the performance of these two groups show only 13 degrees of freedom.

Table 4.24

Analyses of Variance for P1 Pupils' Performance on Zande Literacy Test

Section	Source of Variation	Sums of Squares	df	MS	F
Nonsense Syllables	Between Groups	619.2	3	206.04	17.88**
	Within Groups (Error)	702.72	61	11.52	
Known Words	Between Groups	441.03	3	147.01	16.76**
	Within Groups (Error)	534.97	61	8.77	
Unknown Words	Between Groups	1051.68	3	350.56	10.40**
	Within Groups (Error)	635.01	61	10.41	
Reading Comprehension	Between Groups	112.83	3	37.61	8.17**
	Within Groups (Error)	280.6	61	4.6	

** $p < .01$

parts of the test, $p < .01$. Thus, when all P2 pupils were left in the comparison school sample, the project P1 pupils outperformed the children in the comparison schools on only two sections of the literacy test.

Quite a different picture emerges when the P2 children tested at two of the comparison schools are removed from the sample ($n = 65$). As Table 4.25 shows, significant differences were found on all sections of the literacy test.

On the Nonsense Syllables section the project pupils did significantly better than the three comparison schools, $p < .001$ and Mainbangaru school pupils were significantly better than Susa and Singbi pupils, $p < .01$. Virtually the same picture was seen on the Known Words section of the test. The project pupils significantly better than the comparison pupils ($p < .001$ for Masiya vs. Susa and Singbi; $p < .02$ for Masiya vs. Maingbangaru), and, again, Maingbangaru pupils were significantly better than the P1 pupils at the other two schools, $p < .001$. However, there was no significant difference in the performance of the project pupils from that of the P1 pupils at Maingbangaru on the Unknown Words section. The performance of both the project school and Maingbangaru pupils was significantly better than that of the pupils at the other two schools, $p < .001$. On the Reading Comprehension section the project pupils performed significantly better than pupils at all other schools ($p < .05$ for Masiya vs. Maingbangaru, $p < .001$ for Masiya vs. Susa, Singbi). Again, Maingbanbaru pupils performed significantly better than the children tested at Susa and Singbi, $p < .01$.

Given the small size of the groups and the fact that the selection of pupils tested was not truly random, the ANOVAs are best interpreted for descriptive purposes only. Table 4.25 is perhaps more useful for comparison purposes. Looking at the means of each group, we can see the project pupils clearly surpass the comparison pupils on all sections except number Unknown Words, where the pupils at Maingbangaru do better than the project pupils. A convenient explanation of this might invoke the difference in sample sizes and cite the high scores of the five students who were P1 repeaters at Maingbangaru. However, this solution is perhaps to facile, since there were eight non-repeaters who has higher or equivalent scores. An examination of the oral reading errors made by both groups provides an equally compelling explanation.

The Maingbangaru pupils oral reading errors tended to have a close similarity to the graphemic, i.e. visual shape, of the words they were attempting to read. For example, they said iro for ira, bai for bãgi, iri for bibiri, ari for Dari, sama for suma, nzagu for nzengu, ago for ango, etc. This is exactly what one would expect with pupils who have grasped the basic concept of word attack, i.e., convert letters into units of sound and amalgamate those into higher units which can then be recognized as words and morphemes. The project pupils, on the other hand, tended to substitute words that had appeared with high frequency count of all of the morphemes used in Lessons 1-15 in the Zande primer, see Appendix 4.F). For example, on the Unknown Words section, for meme (goat) Masiya pupils read mama (leopard) which had appeared 17 times in their primers; for tita (grandfather) they said gita (hoe), which had appeared 10 times; for Dari (frog) they read Dabira, a male name which had appeared 33 times; for nzeme (fat), they substituted nzengu (market) which had appeared 33 times in their primers.

Table 4.25

Zande Literacy Test Results

	School			
	Masiya (Project)	Maingbangaru (Comparison)	Susa (Comparison)	Singbi (Comparison)
A. Number of Pupils Tested	16	24	10	15
B. Test				
1. Nonsense Syllables (12)[1]				
Mean	9.19	5.46	1.7	1.07
Standard Deviation	3	3.81	2.72	2.95
Range	5 - 12	0 - 12	0 - 9	0 - 12
2. Known Words (10)				
Mean	7.13	4.21	.3	.73[2]
Standard Deviation	2.7	3.76	.64	2.24
Range	3 - 10	0 - 10	0 - 1	0 - 9
3. Unknown Words (10)				
Mean	4.5	5.04	1	.73[2]
Standard Deviation	3.84	3.67	1	2.24
Range	0 - 10	0 - 10	0 - 1	0 - 9
4. Reading Comprehension (7)				
Mean	3.7	2.16	0	.63
Standard Deviation	2.14	2.56	0	1.83
Range	1 - 7	0 - 7	0	0 - 7

Note: Means not underscored by the same solid line differed significantly ($p < .01$)

[1]Numbers in parentheses indicate the maximum score for each section of the test.

[2]The identity of the figures shown in sections 2 snd 3 for Singbi school is purely coincidental and not the result of typographical error.

The same kind of substitutions were made in the reading comprehension passage. The two main characters in the test passage were named Nako and Bako. Maisya pupils consistently replaced these with the names of the three main characters that had appeared in their primer, Inie, Naguru, and Dabira. Project pupils who could not read the new word ango (dog), which is quite crucial to the story, would substitute words that had appeared in their primer nvugä(monkey) or zege (hyena) (this had just been introduced in Lesson 16). Pupils at other schools would substitute words that were often absurd in the context of the story but were graphemically close to ango e.g., age (termites) and angu (mosquitoes) and go on to supply these as answers to the question, "What was the leopard eating?" Verbs that had frequently appeared in the Zande primer would be substituted for a new word in the comprehension passage, e.g., two Masiya pupils replaced ora (run) in the clause Hõ (when) i (they) aá (progressive marker) ora (run) ni (when), ..., "When they were running," with ga (return, go away from), which had been used in the primer 30 times in the first fifteen lessons.

The type of oral reading error most commonly made by the project pupils strongly suggests that they were not developing word attack skills as rapidly as some comparison pupils. Because the IRL primers recycle words so frequently, many children may have developed a guessing strategy based on a partial resemblance of a known word to a new word and their apparent good performance in class may actually be a demonstration of their ability to memorize words which they have been exposed to many times. Since the project reading materials repeated words at such a high rate, the development of word attack skills may suffer. It is thus not surprising that the Zande project pupils were not able to excel on that section of literacy test which taps their ability to sound out unfamiliar words without the benefit of context.

Offsetting this deficiency is the project pupils' demonstrated ability to use context to make intelligent guesses about unfamiliar words. Comparison pupils are generally so intent on sounding out each individual grapheme that they often read too slowly and the entire context of a sentence is forgotten once they finish it. The better readers at Masiya frequently used context in reading, backing up again when they came to a word they did not know and rereading the first part of a sentence to gain a possible clue to the meaning of the problem word. The oral reading errors of the project pupils made syntactic and semantic good sense within the sentence where they appeared, whereas the comparison pupils' errors did not, resembling more often the graphemic representation of the problem word, e.g., bägi (sold) for boko (pumpkin) in (1) and ndu (went) for ngbe (buy) in (2), which result in the ungrammatical sentences (1b) and (2b) marked with asterisks.*

(1) a. i ki ndu ku ngbe abapu na boko
They then go in order to buy beans and pumpkin
"They went to buy beans and pumpkin."

was read as:

*These examples are both from the last half of the introductory sentence of the test passage, slightly abridged for presentation purposes. The past morpheme a is not repeated in front of the verb since it has already appeared before the first verb in the sentence.

b. i ki ndu ku ngbe abapu na b gi
*They then go in order to buy beans and sold
*"They went to buy beans and sold."

(2) a. i ki ndu ku nzengu yo ku ngbe abapu
They then went to market there to buy beans
"They went to the market to buy beans."

b. i ki ndu ku nzengu yo ku ndu abapu
*They then went to market there to went beans
*"They then went to the market to went beans."

Table 4.26 shows the percentage of the P1 pupils' oral reading which made syntactic or semantic good sense. The percentages are based on the total number of recorded errors and would be misleading without some indication of the number of pupils who were unable to read anything on various sections of the test and hence produced no errors. The bottom half of Table 4.26 provides this additional information.

T tests were computed comparing the P1A project pupils' performance on the literacy test with that of the P1B pupils. On each section the P1A pupils did significantly better (Nonsense Syllables: t (13) = 3.62, p < .01; Known Words: t (13) = 4.62, p < .001; Unknown Words: t (13) = 5.45, p < .001; Reading Comprehension: t (13) = 3.01, p < .01). Obviously these results should be interpreted with caution, since the classification "more mature," cited by the project teachers as the basis for deciding which pupils should be allowed to take their primers home, might conceal factors which were the true source of the P1A's superior performance, e.g., only the older children or best readers were assigned to this group. It appeared that "more mature" designated those children who the teachers felt could be trusted not to lose or damage their primers. If this is true, the results of the t-tests thus would tend to support the hypothesis made in the second impact evaluation that children who are given material to read at home will read more frequently and hence develop proficiency faster than children who are not granted this opportunity.

The overall results are not particularly surprising. One would expect pupils who have been using structured reading materials to perform better on a test that taps skills practiced in those materials than children who have not had the benefit of any materials. Still, we cannot exclude the possibility of environmental differences being at least partially responsible for the superior performance of the project children. Given the large number of government offices in Yambio, it would not be startling to find that the parents of the project children are better educated and more supportive of reading than most of the parents of the comparison pupils. One would also anticipate the possibility of more literature in Zande being in the homes of the project pupils than in the homes of the comparison pupils.

The elusive potential contribution of the family and unidentified community institutions to the acquisition of literacy in primary school surfaced once again in the course of this evaluation. At Singbi, a number of older children were seen sitting around listening to one child read aloud from a small pamphlet which contained scripture passages in Zande. The children who were

Table 4.26

Percent of Oral Reading Errors That Made Syntactic and/or Semantic Sense

School		Made Sense	Made No Sense
Masiya	(Project)	72%	28%
Maingbangaru	(Comparison)	28%	72%
Susa	(Comparison)	27%	73%
Singbi	(Comparison)	43%	47%

Percent of Students Who Read Nothing On Sections of the Literacy Test

Variable:	Nonsense Syllables	Known Words	Unknown Words	Story
School				
Masiya	--	--	--	--
Maingbangaru	--	4%	4%	29%
Susa	--	60%	80%	100%
Singbi	--	54%	74%	93%

listening and the reader were all P2 and P3s. The reader appeared to be so fluent that it was decided to spot-test him and several of his P2 comrades, using the P1 test and some questions about the passage he had just read. Four P2 pupils were tested in this manner and all performed very well. Similarly, the P2s whom the Singbi school officials attempted to pass off as P1s, were good readers, something that could not be said for all of the P2 children tested at Susa, some of whom were virtually illiterate. And yet, all except one of the P1 pupils we tested at Singbi displayed very poor reading skills. It was not clear how, with so little time left in the school year, the Singbi P1 children could make such giant strides to attain the level of competence we were witnessing in the P2 pupils, who had had only about 6 more months of school; the gap in their respective abilities simply seemed too great. An obvious explanation is that there is more than one source of reading instruction in some communities. With the help of the Singbi headmaster, the P2 and P3 children were questioned in an attempt to determine whether they read at church, or at church-associated functions and how many of them had pamphlets like the one we had seen. Of the thirty to forty P2 and P3 children present that day, only about six admitted to having any books at home and none said that they read anywhere except at school. Due to the manner in which this information was solicited, it should be considered highly suspect.

4.3.2.3.2 THE NUER LITERACY TEST

The results of the three literacy tests administered at Nasir West school are shown in Table 4.27. The P1 pupils did better on all sections of the literacy test than the P2 pupils who are in the first year reading class. Only on Known Words was their performance significantly better than the P2 beginning readers, t (31) = 2.85, $p < .01$. Although there is' no strictly valid way of comparing the P1 Nuer pupils' performance with that of the P1 Zande pupils, since equivalence between the two literacy tests is not demonstrable, a comparison based on the test scores would suggest that the Nuer project pupils are better readers than the Zande pupils at Susa and Singbi, but not as good as the pupils at Masiya and Maingbangaru. What is worth noting is that the difference between the reading skills of the Zande and Nuer children did not appear to be as pronounced as it had appeared during the second impact evaluation.

Table 4.28 shows the Pearson product-moment correlations computed to determine whether a relationship existed between attendance at school and performance on the literacy tests. Most of them are close to zero except for the large negative correlation obtained for the P1 pupils on the Known Words section and the .56 obtained for the P2 intermediate pupils on the Reading Comprehension section, which may be specious because of the small size of that group. That, once again no apparent relationship between attendance and performance on the test turned up is probably due to the fact that the SIL Consultant was responsible for selecting the pupils tested. A more random selection and larger samples might well have produced evidence of a positive relationship. The bottom half of Table 4.28 provides a more complete picture of the attendance of the pupils tested.

Only about 5% of the oral reading errors made by the P1s on the Known Words and Unknown Words section were not real words or morphemes in Nuer. Thirteen percent of the errors made by the P2s beginning reading on the Known Words section were of this type. Project pupils were often unable to read the final

Table 4.27

Nuer Literacy Test Results

Test	Nonsense Syllables (6)	Known Words (10)[a]	Unknown Words (10)	Comprehension (6)
1. Advanced Test				
P2 Pupils (n = 15)				
Mean		8.46	6.43	3.83
Standard Deviation		1.83	3.19	2.42
Range		1 - 10	1 - 10	1 - 6
2. Intermediate Test		Known Words (10)	Unknown Words (10)	Comprehension (7)
P2 Pupils (n = 7)				
Mean		8.43	4.64	5.29
Standard Deviation		1.56	2.34	1.19
Range		5.5 - 10	1.5 - 8	3 - 7
3. P1 Test	Nonsense Syllables (6)	Known Words (10)	Unknown Words (10)	Comprehension (7)
A. P2 Pupils Beginning Reading (n = 13)				
Mean	1.53	1.95	.25	1.53
Standard Deviation	1.66	2.57	1.33	2.04
Range	0 - 6	0 - 9	0 - 5	0 - 7
B. P1 Pupils (n = 20)				
Mean	2.58	4.8	.4	1.91
Standard Deviation	1.70	2.84	.97	2.02
Range	0 - 6	0 - 10	0 - 4	0 - 6.5

[a]Numbers in parentheses indicate the maximum score for each section of the test.

Table 4.28

Pearson Product Moment Correlations Between Attendance and Performance on the Nuer Literacy Tests

Correlations Between Attendance and Test Performance				
Group	Nonsense Syllables	Known Words	Unknown Words	Reading Comprehension
Advanced P2s (N = 15)	--	.16	-.03	-.01
Intermediate P2s (N = 7)	--	.14	-.15	.56
Intermediate P1s (N = 20)	-.11	-.72	-.04	.09
Beginning P2s (N = 13)	.07	-.12	.11	.34

Pupil Attendance in Days				
	Advanced P2s (53)[1]	Intermediate P2s (50)	P1s (41)	P2s (Beginners) (49)
Mean	41	34	28	30
Standard Deviation	8.40	10.34	10	8.40
Range	23 - 52	24 - 49	7 - 39	13 - 42

[1] Numbers in parentheses indicate the total number of days school had been in session or each group at the time they were tested.

consonant in CVVC sequences. They would read /gaa/ for gaak (to argue), or /lua/ for luɛ k (bait). This problem underscores a weakness of the SIL letter-teaching approach, which emphasizes the teaching of CV units. The pupils are so used to breaking down words in CV units that they have difficulty sounding out sequences like CVVC or CVC. The SIL approach may work very well for languages with CV/CV/CV syllable structures; regrettably, a great many of the languages in Southern Sudan are not of this type.* This may be the reason why a more phonics-oriented approach to word attack has apparently yielded superior results on some of the measures of reading for the Bari comparison classes reported in Cziko and Cowan (1982, p. 23).

Oral reading errors made by the Nuer children tended by and large to involve the substitution of known words. With no context, e.g., in the "Unknown Words" section, even P2 intermediates would steadfastly persist in replacing a word that they should have been able to sound out with a familiar word e.g. cik "to put a grass skirt around a hut," was replaced with cikɛ, the third person plural past aspectual marker. Errors made in reading the test passages followed the pattern of substituting words that were similar in graphemic (visual) shape. Sometimes the recognition of only one or two graphemes was sufficient to trigger a substitution, e.g., the final y in may "fishing", is rendered r ɛ y (into) in (3). Similarly, the recognition of the final grapheme sequence th in bith (spear) in (4a) gave rise to the substitutions in (4b) and (4c), where the th appears word initially. Both substitutions thal "cook" and thin "be present," had been used very frequently in instruction the pupils had received.

(3) a. Cɛ wa may yieer
he/past go fishing river
"He went fishing (in) the river,"

was read as:

b. Cɛ wa rey yieer
he/past go into river
"He went into the river"

(4) a. Man Dɛɛŋ cɛ Dɛŋ kam bith
Mother of Deng she/past (name) gave spear
"Man Dɛɛŋ gave Dɛŋ a spear"

b. Man Dɛɛŋ cɛ Dɛŋ kam thal
Mother of Deng she/past (name) give cook
*"Man Deng gave Dengcook"

and:

*It may be that the SIL method developed by S. Gudshinsky owes something to the fact that many of the languages where it was first used had a CV/CV structure. John Hollman also explained that another reason for adopting a CV attack strategy is to avoid the problem of the epenthetic vowel that automatically occurs after the pronunciation of a voiced consonant in isolation -- a problem that phonics must deal with.

c. *Man Dɛ̈ɛ̈ŋ cɛ Dɛŋ kam thin
Mother of Deng she/past (name) give be present
*"Man Dɛ̈ɛ̈ŋ gave Dɛŋ was present"

More often, the substitution was based on a close overall graphemic similarity, with the replacement word like the examples shown in (5). Replacements like these can be found at all levels; (5f) and (5h) for example, were made by the advanced P2 readers. Notice how close the replacement words thuuk (finish) and du th (remain) are to the printed words in the text, tu k (begin) and lu th (get up).

(5) a. Cikɛ rec Dɛ̈ɛ̈ŋ naŋ
they/past fish name take
"They took Deng's fish,"

was read as:

b. Cikɛ rec Dɛ̈ɛ̈ŋ nöŋ
they/past fish (name) bring
"They brought Deng's fish,"

c. Jɔk cɛ cibat moc kɛ luɛk
(name) he/past fish hook give to frog
"Jok baited (his) fish hook with a frog"

was rendered as:

d. Jɔk cɛ cibat moc kɛ luak
(name) he/past fish hook gave to barn
*"Jok baited his fish hook with a barn"

e. Mee ci nihiaal ku tuɔk kɛ dɛm
When aspect rain begins fall
"When the rain began to fall,"

was rendered as:

f. Mee ci nihiaal ku thuuk kɛ dɛm
When aspect rain finish fall
"When the rain finished falling,"

g. Bi duŋdu a luɔth kɛ runwaŋni diaal...
2nd sing belonging get off in mornings all
future asp. your early
"You will get up arly every morning. . ."

was read as:

h. Bi duŋdu a duɔth kɛ runwaŋni diaal...
2nd sing belonging remain in mornings all
future asp. your
"You will remain every morning. . ."

It was often difficult to identify unambiguously those errors thought to represent a P1's attempt to make good semantic sense out of a sentence when he came to a word he could not read. Nuer is a subject-object-verb (SOV) language and a large number of the recorded errors were verbs appearing either sentence finally (6a), or penultimately (6b). One might, for example, reasonably assume that the substitution of thal (cook) for naŋ in (6a) represents an example of an effort to make a semantically plausible reading, since the only graphemic similarity between the replacement word and the word that appeared on the test, naŋ(take) is the letter a. However, in this case, both substitutions, näk (kill) and thal (cook) had been used very frequently in the primer, so it is possible that the reader may have made his substitution once again, on the basis of a remote but nonetheless visual similarity. The same argument may be made for example (6b). There were fewer errors like (6d), which appears to be a bona fide example of an attempt to substitute a word that simply made semantic good sense, in the context of what the pupil had read.

(6) a. Cikɛ rec Dɛɛŋ naŋ (näk, thal)
They/past fish (of) name take (kill, cook)
"They took/killed/cooked Deng's fish"

b. Cikɛ dɛl naŋ (to) luaak (nön, näk, lath)
They/past sheep take barn (bring, kill, put)
"They took the sheep to the barn"

c. Cikɛ riŋ wic
they/past run village
"They ran to the village,"

was read as:

d. Cikɛ riŋ dɔɔr
They/past run bush
"They ran into the bush"

The overall trend revealed by the Nuer tests was very encouraging. This is seen in the obvious progress made by the pupils in th P2 intermediate and advanced groups who had their first exposure to vernacular instruction in 1981. With one exception, both groups scored above 64% on all sections of the literacy tests. There is thus every indication that despite large class sizes and limited sources the pupils at Nasir West are making substantial gains in the development of critical reading skills. These gains are a testimony to the effectiveness of the grouping-by-ability procedures used at the school, the teaching talents of the IRL Language Officer and last, but not least, the Nuer primers.

In summary, the Zande and Nuer outcome data present a far more encouraging picture than that reported for the Bari and Lotuho pupils in the first and second impact evaluations. In terms of overall literacy achievement, the Zande and Nuer pupils appear to enjoy a definite superiority over their Bari and Lotuho counterparts and this must in large part be due to the innovations in the Cycle 2 materials, which have done much to promote meaningful reading in the classroom. Clearly these innovations should guide the revision of the Cycle 1 materials as well as the creation of new primer materials.

4.4 DISCUSSION

As is evident from the preceding text and tables, a very large amount of data were collected during the three impact evaluations of the literacy project. While the preceding sections of this chapter have served primarly to present these data, the purpose of the present section is to discuss the evaluation findings. This is done by making some general comments on what was found out about primary education and literacy in the rural areas of the Southern Sudan. This is followed by discussions of the overall literacy achievement of primary school children in the region, evident of the impact of the literacy project and the implications of these findings for improving the literacy achievement of children in this and similar regions of the rural third world.

4.4.1 PRIMARY EVALUATION AND LITERACY IN THE RURAL SOUTHERN SUDAN

It is apparent that there are many serious obstacles to the acquisition of literacy skills by primary school pupils in the rural Southern Sudan. The first set of these obstacles are related to school factors. Frequent and prolonged teacher strikes, untrained teachers, high teacher and student absenteeism, lack of both teacher and pupil materials, and occasionally very large classes and poor facilities all impede primary education in this region and literacy acquisition in particular.

In addition, the methods employed to teach reading and writing principally involve the mechanical repetition and memorization of words and stories. Absolutely no "meaningful" activities took place in the vernacular classes of the two comparison groups. Questions requiring reading comprehension were not asked, the meanings of stories read were not discussed and the functional aspects of literacy (e.g., reading and writing correspondence, following instructions, record keeping) were not demonstrated. Second, in the rural areas visited there appears to be virtually no contact with the printed word outside of the context of the school and no use of literacy skills by anyone other than the teachers, government officials and police. Furthermore, any contact with literacy is likely to be in Arabic or English and not in the vernacular language. This is in stark contrast to most urban and developed areas of the world where children are often as immersed in printed forms of their language as they are in spoken language and see daily the functions of reading and writing as an integral and meaningful part of their environment. Since these factors will make it extremely difficult for any literacy project to have an impact in the area, this project can be viewed as a test case for literacy. To the extent that these conditions are similar to other economically undeveloped areas of the world, the results of this project provide an indication of the impact that a vernacular literacy project is likely to have in rural, underdeveloped areas of the world where there is no or very limited contact with or use of literacy skills.

4.4.2 OVERALL LITERACY ACHIEVEMENT

The overall literacy achievement appeared to be generally very low with relatively few exceptions for all pupils tested over the three-year period of the project evaluation. Among the P2 Lotuho comparison pupils tested as part of the first impact evaluation; only one child was able to demonstrate any literacy skills at all (he was able to read aloud one word from List 1 and one word from the story passage).

While the test results presented in Table 4.7 do indicate the generally low level of literacy achievement, the literacy skills of these children are best appreciated by listening to the recordings of their oral reading of the story presented to them. Even the Bari and Lotuho pupils who were most successful in reading the story read painfully slowly with little or no indication whatsoever that they were understanding what they were reading or that they were able to use syntactic or semantic constraints in reading. Therefore, while the Primary 1 pupils of the Bari project, Bari comparison and Lotuho project classes had acquired some word recognition and basic word attack skills (the latter best demonstrated by the Bari control group), their reading comprehension skills appeared to be very poor indeed and far below the general level attained in the US by children at the end of Grade 1.

The follow-up testing of the Bari and Lotuho pupils at Primary 3 in the second impact evaluation generally confirmed the results of the previous year. In addition, the detailed analysis of the oral reading errors of the Bari pupils revealed that at the end of their third year of school they were using almost exclusive visual information in reading (typical of children just beginning to read) and were less sensitive to the use of contextual information in reading than typical American children toward the end of their first year of schooling.

The performance of Primary 1 and 2 Nuer and Zande children as assessed as part of the second and third impact evaluations was considerably more encouraging. While the P1 Nuer project children at Nasir included in the second impact evaluation appeared to have quite poor reading skills, the P2 children tested at Nasir the following year fared considerably better. More impressive still was the performance of the Zande project pupils who appeared to have developed the highest level of reading of any of the groups tested as part of the three impact evaluations.

In summary, while we must be cautious in making comparisons across language groups due to possible differences in the difficulty of their respective tests, it does appear that there was a distinct difference in reading skills between the Cycle 1 (Bari and Lotuho) and Cycle 2 (Nuer and Zande) groups which were evaluated with the former children at a very low level of achievement and the latter groups showing evidence of having attained some basic reading skills, as shown by the ability to read unfamiliar words and devise some comparison from the reading of simple passages.

4.4.3 EVIDENCE OF IMPACT OF THE PROJECT

One of the primary reasons for undertaking the evaluation described in the chapter was to assess the impact that the project was having on the development of primary school pupils' reading skills in the rural Southern Sudan. However, in spite of the large amount of data collected during the three impact evaluations it is not possible to state unequivocably whether the project at the time had or did not have a positive impact on the literacy achievement of the project Bari, Lotuho, Nuer and Zande pupils. This is obviously the case for the Nuer pupils since it was not possible to test non-project Nuer pupils who were not using the new project vernacular literacy materials. Even for the remaining three language groups where comparison groups were available for testing, the lack of any type of strict experimental control of the groups (such as random assignment to project and non-project classes) makes impact assessment risky since differences between project and comparison groups may be due primarily to the other confounding uncontrolled variables and not to the project itself.

Nevertheless, it is informative to compare the performance of the project and comparison pupils in reading Bari, Lotuho and Zande since such comparisons, along with consideration of the background data collected for each participating class, do provide the only objective evaluation of the impact of the project on the development of literacy skills.

The project and comparison data collected from the Lotuho groups as part of the first and second impact evaluations do suggest that the project was responsible for the generally better performance of the Lotuho P2 and P3 project pupils compared to the non-project classes evaluated (see Tables 4.7 and 4.13). However, it must be recalled that the Lotuho comparison school was not able to offer its pupils individual Lotuho language books which limited all reading instruction to what was written on the chalkboard. However, if we assume that most Lotuho primary schools in Southern Sudan are similar to the Lotuho comparison school evaluated, but have no or inadequate pupil materials for teaching literacy, then the difference between the Lotuho project and comparison groups in reading performance could be taken as an indication of the impact of the literacy project.

However, the relatively good performance of the Bari comparison group (see Tables 4.7 and 4.12) suggests that what made a difference is the availability and use of materials by the pupils. There was no clear evidence that the Bari project materials being produced were superior to the older materials being used by the Bari comparison group. In fact, the teaching of letter names to the Bari comparison pupils seemed to have given this group an edge over the Bari project group in sounding out and recognizing new words.

The final source of data concerning the impact of the project is given by the comparison of the Zande project and comparison pupils provided by the third impact evaluation (see Tables 4.24 and 4.25). Here there were quite clear differences in reading test performance in four of the project pupils. There were also differences in the pattern of oral reading errors suggesting that the project pupils had developed better skills in using contextual syntactic and semantic constraints in reading than did the comparison pupils who relied on primarily visual information, a characteristic of beginning

readers. Again, however, it should be recalled that the Zande comparison pupils did not have their own books for use in learning to read their language.

The Lotuho and Zande situations are roughly parallel in that in both cases the comparison schools did not have adequate materials for teaching literacy. Hence it can be maintained with a reasonable amount of confidence that under these circumstances the literacy project has definitely had a very positive impact. It is not clear that the project will do much to improve primary school literacy in areas where competing materials are available and used by trained teachers. However, since this situation appears rare in rural areas, it is obvious that continued implementation of the project will do much to increase primary school literacy in the Southern Sudan.

Thus, two general conclusions can be made regarding the impact of the project. The first is that the project has had limited but nonetheless positive impact on the development of vernacular literacy skills for those children who would have otherwise not have had access to vernacular language reading materials. A second, more cautious conclusion, based on what appeared to be a higher level of reading skills among the Nuer and Zande project pupils compared to the Bari and Lotuho groups, is that the modifications made to the Cycle 2 materials appear to have made these materials more effective than the Cycle 1 materials in fostering the development of reading skills.

4.4.4 IMPLICATIONS

The findings of the three impact evaluations lead to numerous implications concerning important considerations in attempting to improve the level of literacy of primary school children living in rural, undeveloped areas of the world. Here we will consider the school-related factors which appear to influence the learning of literacy skills in schools located in such areas and recommendations are offered to increase the effectiveness of the teaching of literacy skills in this and similar projects.

The two major school factors which have an obvious impact on the teaching of literacy skills are the teaching techniques used and the reading materials available to the child. First with respect to teaching techniques, it was found that almost all classroom activities, both in the project and comparison schools, involved the repetition of syllables, words and sentences chanted by all children in unison as they read from the chalkboard. This is not surprising when it is considered that few teachers had any formal teacher training experience and that few of the comparison schools could supply their pupils with reading materials. However, even some of the teachers of the project classes which did have a generally adequate supply of pupil primers relied heavily on copying reading lessons on the chalkboard (which often took a good deal of time) and extensive unison repetition of the reading lessons. None of the activities observed in any of the comparison classrooms and few activities observed in the project classrooms involved reading for comprehension. As noted earlier, reading comprehension questions of the new project materials could usually be answered by a repetition of that part of the passage relevant to the question. It is therefore understandable that all

the comparison pupils and most of the project pupils had considerable difficulty in answering the reading comprehension questions included in the evaluations.

The project materials have been described in detail in the preceding chapter where it was feared that the extremely high rate of repetition of words within the primers as well as the limited number of instructional activities requiring reading comprehension would likely lead to some skill in building a sight vocabulary of the oft-repeated words but poor skills in recognizing new words and in reading comprehension skills. The performance of the project pupils on the evaluations' reading tests have generally confirmed this suspicion. In addition, the changes made to the Cycle 2 Nuer and Zande materials in an attempt to provide more meaningful reading exercises was found to provide the pupils with more motivating and stimulating reading activities which may be at least partly responsible for the apparently better reading skills of the project Nuer and Zande pupils compared to the project Bari and Lotuho children.

Finally, there is a clear need to make vernacular reading skills useful both within and outside school if these skills are to be well developed and maintained by children. Within school, vernacular language materials for the teaching of other subject areas would provide a strong motivation for the development and use of vernacular language reading skills. Outside of school, attempts need to be made to involve parents and other adults in vernacular literacy projects and to demonstrate that literacy can serve a useful purpose in village life. Indeed, the generally better performance of the project children in the larger towns of Yambio and Torit may be due to the fact that these were the only two communities studied where the written word can be seen many places outside of school.

In light of these observations, the following recommendations seem appropriate. While these recommendations have been made with this particular literacy project in mind, they may well have value in other undeveloped rural settings where attempts are made to teach vernacular literacy skills.

1. Considerably more time should be spent on meaningful reading activities in the classroom. These activities could include the reading and comprehension of more interesting and varied stories relevant to the experiences of children living in rural villages, discussion of these stories, allowing pupils to create, write down and read stories of their own and the writing of letters to friends and relatives in distant villages. The apparent success of the context clue drill included in the Nuer and Zande materials also indicate that more meaningful activities can become part of the highly structured format of the vernacular primers.

2. Questions used to assess reading comprehension should be constructed in such a way that they could not be correctly answered by verbatim repetition of parts of the story or by general knowledge of the local culture. Many of the stories in the project materials include three major characters: a man, a woman and an animal. Therefore, questions such as who was killed (inevitably the animal), who killed it (inevitably the man) and who cooked it (inevitably the woman) do little more than test memory for the names of the man and woman (often the same from story to story) and the type of animal involved.

Comprehension questions should involve inferencing skills and elicit discussion of the meaning of the story.

3. Better use should be made of class time. Relevant to this recommendation is the finding that the two project teachers spent considerable time writing materials on the blackboard which were already contained in the pupils' materials. This wasted time should be used in meaningful reading activities.

4. Materials need to be produced in the vernacular languages for the teaching of other subjects. The learning of other subjects through reading in the vernacular would demonstrate to the pupils that reading is a means for obtaining information and not simply a mechanical process performed for its own sake.

5. The only reasonable solution to the problem of large classes is to break them up into smaller groups. Where there is a lack of trained teachers and an abundance of pupils, the approach taken at Nasir recruiting and training teachers' aides--seem to be better than letting one teacher handle 40 to 100 students. Some attention should be devoted to developing a procedure for training teachers' aides.

6. The comparison of the Zande and Nuer children's reading abilities constitutes a compelling argument for instituting a policy whereby the children are allowed to retain their primers outside of school. The potential benefits from such a policy far outweigh objections such as possible expenses incurred due to lost or damaged books. Although it seems clear that allowing pupils to bring their books home will not in itself guarantee the development of fluent reading skills (since the Bari and Lotuho project pupils were also allowed to take their books out of school), it is the only way which most of these pupils can have contact with literacy outside of school and the only way by which their parents and other family members can become involved in and stimulate the education of these children.

7. Finally, in settings such as these studied here where little if any reading materials are available outside of school and where few people can read, efforts must be made to provide sources of vernacular reading materials and to allow adults, particularly parents, to become literate in their own language. It seems clear that children will learn to read best in those communities which have at least the beginnings of a climate of literacy. Further thoughts on how literacy can be made to meet the needs of rural undeveloped communities will be offered as part of the next chapter.

5.0 GENERAL DISCUSSION

The purpose of this chapter is to summarize the major lessons that may be learned from studying the development of the Southern Sudanese Local Languages Literacy Project by relating these to the broader contexts of large-scale literacy programs and language policy and language planning.

The results of the impact evaluations suggest that the success or failure of large-scale literacy projects in developing countries is in part dependent upon variables which have been traditionally identified as critical components of all formal educational endeavors, i.e., teaching materials, methods and the amount and type of training the teachers have received. The apparent improved performance of the Cycle 2 pupils over the Cycle 1 pupils is most likely attributable to the difference in the quality of materials used by the two groups, since potentially confounding variables appear to be fairly equivalent. This argues that materials can make a difference in the level of proficiency attained even when the setting of a literacy project is in rural areas of a pre-literate society. Materials most conducive to promoting functional literacy would employ the technology of linguistics for the creation of optimal orthographies but would also incorporate pedagogical applications of insights derived from up-to-date reading research, such as the importance of episodic structure for comprehension and retention of larger prose passages and the necessity for developing in the learner an awareness of how different kinds of contextual information can assist in deciphering unfamiliar words.

In the classroom, activities which promote reading for meaning should take precedence over teaching techniques which occupy large numbers of pupils in mechanical operations, e.g., the sustained repetition of syllables, words, sentences, even when such techniques have an established tradition in the culture. This priority of emphasizing that reading is for meaning rather than just mouthing sounds which have symbolic representation on a page or blackboard should carry over into teacher training courses, where, because of the trainees' often meager formal education, there is a tendency in many African countries to equip them with a limited number of teaching techniques which focus almost exclusively on establishing sound-symbol correspondences (five teaching techniques was the maximum number set by the SIL teacher training expert). It is obvious that one should not attempt to load teachers in this setting with a complex set of techniques more suitable to developed countries, and, similarly, it is clear that all beginning readers must engage in some word-attack practice if they are ever to master the alphabetic principle, but this should not exclude the possibility that at least some classroom activities emphasize that reading is for meaning. The lack of classroom techniques emphasizing reading for meaning was undoubtedly a serious weakness of the Sudanese project.

The total number of external variables which deserve serious consideration when attempting to mount a successful large-scale literacy project will unquestionably vary from country to country, although elements common to all similar settings may well be found in the Sudan experience. It is clear that

the project has produced much knowledge which may be appropriately transferred to future endeavors in preliterate rural societies. The statistically significant superiority of the P1 Zande pupils who were allowed to take their primers home with them after school over those pupils who were not argues that one of the most important variables in fostering reading in a preliterate society is the creation of a climate for literacy in the community. Governments engaged in multilingual programs similar to the one described in this report should realize that implementation of rural literacy requires a substantial long-term committment at two levels. Not only must vernacular materials be made available in a wide range of school subjects, i.e., geography, history, math, etc., but some inducement to read on a daily basis must be created within rural communities if the literacy training going on in the schools is to have any relevance in the eyes of the children who are receiving it. The total investment involved in the successful implementation of rural literacy campaigns in preliterate societies is thus double that required in countries where the vehicles for promoting and sustaining literacy, i.e., newspapers, journals, books, signs, etc., are a regular feature of the community environment. Government officials contemplating literacy programs in countries with conditions similar to that of Southern Sudan should not lose sight of this very obvious but fundamental point, since it implies that (a) a greater financial allocation may be necessary than was initially anticipated, and (b) the cooperation of more than one government agency, e.g., the Ministry of Education and the Ministry of Community Development will need to be solicited, something which is not accomplished with ease in the most efficient governments.

Nevertheless, the results of the Sudan Project clearly point to the need for establishing literacy in the community prior to or in tandem with primary school instruction. One of the most important reasons so little learning is sustained from year to year in Southern Sudanese rural schools appeared to be the lack of reinforcement available in the community and the consequent poor school attendance of the children. This was not due to a complete lack of effort in this area by the IRL/SIL personnel. One of the goals of the Local Languages Literacy Project was the institution of writers' workshops in regional centers. These were held periodically by SIL literacy consultant Wanda Pace, their purpose being to stimulate local writers to produce indigenous literature of any sort -- usually folk tales. Unfortunately the inability of the Southern Regional Ministry of Education to provide resources for the production and distribution of the materials which evolved from these workshops nullified this promising effort.

However, there is a difference between creating an interest in literacy and ensuring its acquisition. Recall that in Chapter 2 it was discovered that although 94% of the people surveyed felt reading and writing to be desirable, the major preference expressed was for literature which had no immediate practical benefit, i.e., tribal histories and folk lore. The history of the evolution of literacy (Gelb, 1956; Schmandt-Besserat, 1978) shows that reading and writing can only be sustained within a society if they fulfill an important practical function. Thus while the writers' workshops were undoubtedly a step in the right direction, they would have to be followed by transitional efforts designed to impart the realization that reading and writing have some immediate useful purpose in these rural communities. Typically, the next stage in such programs is the introduction of literature on topics deemed beneficial for the community as a whole, e.g., the

improvement of hygiene, agricultural yield, etc. But, as was pointed out by Dr. Singh, the UNESCO Community Development Specialist sent to Mardi to set up the first of a series of Integrated Regional Educational Centers (IRECs), it often requires a fairly long passage of time in preliterate societies before the written word becomes an accepted mode of transmitting knowledge. (This was the reason why literacy was not contemplated as a means of instruction in the IRECs.) As a result, some in-depth preliminary investigation (perhaps using a trained anthropologist as was done in this study) should be undertaken to determine ways in which literacy can be consistently useful and relevant in the lives of rural preliterate societies and the findings of these investigations should then shape efforts by the government to establish reading and writing within communities on a more permanent basis.

Certainly one of the major lessons to be learned from the Sudanese experience is that the impact of multilingual literacy programs mounted in preliterate societies is dependent upon the interaction of sociological, economic and political variables. Sporadic attendance by teachers was found to be due not only to the fact that the profession is poorly paid, as it is almost universally, but also to a conflict between the demands imposed upon teachers by a western educational system and their desire to maintain traditional economic patterns. Similarly, pupil truancy arose from a number of factors: the need to utilize children from time to time as a member of the family work force, a conflict between the traditional subsistence schedule and the western educational schedule, the lack of understanding by parents as to what constitutes consecutive attendance and it's importance and parental apprehension about the possible use of the classroom as a vehicle for political, cultural and religious indoctrination.

Dealing with these conflicts effectively will not be easy. Some of them may be alleviated by increased financial commmitment to public education, e.g., in Sudan, raising teachers salaries might attract more qualified personnel and reinstituting boarding schools at the primary level would do much to guarantee more consistent attendance. But more money is not the only answer. Other conflicts that arise from the three factors mentioned above require sophisticated approaches, since they involve changing behavioral patterns that have guided people's lives for centuries. This takes time and the knowledge which perhaps only a cultural anthropologist with a sharpened historical perspective can supply. But it should be clear that nothing can be done to enlist the community's increased support of formal education until their perceptions and apprehensions about schools have been identified. Educational authorities must have a fuller understanding of the rural population's perceptions of the school's function, why parents send their children to school, how large a say they want in what goes on in class and what their committment to the school is in terms of releasing what for them is a significant work force resource. Governments should understand that acquiring trustworthy answers to these questions is important since such data can bear significantly on the effectiveness of strategies they may be contemplating, and, hence, constitute important indicators of a literacy project's potential for success. The most sensible course of action, which could save governments considerable time and money in the long run, would be to collect data on the sociological, economic and political variables that bear on the project as a first step. This would permit policy planners and educational authorities charged with mounting a given literacy project to

recognize some of the otherwise more formidable obstacles they face and to consider how they may be most effectively dealt with.

One of the more reliable conclusions to be drawn from Sudanese experience is that the evaluation of large-scale literacy projects being implemented in rural settings generates more questions than unequivocal answers. Early in this study the need for broadening the data base by including children from more schools became evident. The difficulties involved in developing and administering objective tests in rural Africa meant that statistical comparisons of achievement scores by different groups could be best interpreted for descriptive purposes only (due to small sample sizes, absence of truly random selection of examinees and the fact that schools are often chosen primarily because of their accessibility and hence could not always be considered representative). In the course of interpreting the test data numerous questions were raised that appeared to be answerable only by expanding the data base and collecting information about the possibility of hidden sources of education in the community and parental support for the schools. It was at this point that the SIL anthropologist Robert Hoppe was brought in. Much of the information he collected was already known to the consultants and in fact had been touched on briefly in some of the earlier impact evaluation reports. However, some of the observations produced by his survey, particularly those pertaining to parents' conception of what constitutes adequate attendance by their children and their views of the function of the school in rural society added greatly to our overall picture of factors affecting the total impact of the literacy program.

The experience gained from this particular project suggests that the most appropriate evaluation design for similar large-scale literacy programs is one where variation of the previously mentioned variables is used to explain variation in the attainment of literacy skills and school achievement. The evaluation of such programs would thus combine information derived from quantitative instruments and qualitative impressions. Needless to say, the naturalistic variation design advocated here requires a long time frame and evaluators with complementary skills.

Ideally, one would want to employ the talents of a sociolinguist before embarking on any action. The sociolinguist would assess the degree of bilingualism in the areas where the project is to be mounted, thereby enabling the planners to make justifiably well informed judgments as to how many languages should be targeted for literacy development. The initial SIL survey had attempted to do this and had brought into focus for priority attention the nine Role A languages. These languages were identified as the ones most suitable for literacy development and as the languages which would cover the majority of the children commencing school in the South.

At the same time an anthropologist could collect data on the sociological variables which interface with the introduction of adult and primary education in rural areas. Armed with this information the planners could map out an appropriate course of action for implementing the project. Applied linguists with a specialization in reading could then be employed to assist in developing materials, and, finally, an evaluation specialist could work with the anthropologist to ensure that useful formative evaluation is funneled to the materials developers and teacher trainers. While the scheme proposed here may well sound far too elaborate to be taken seriously by project development

experts, it should be emphasized that alternatives, e.g., just using one or two specialists, runs the risk of presenting the project development staff with a very narrow viewpoint that may well fail to take in important variables which should be addressed.

In reviewing the Sudanese literacy project one inevitably feels compelled to address questions such as: Are multilingual literacy projects of this type justified? What does the outcome of the Southern Sudanese project reveal about the potential for multilingual educational policies in third world (particularly African) countries? The answers to these questions are obviously to a large extent, matters of individual interpretation based on the interpreter's point of view and hence are not neatly resolved by citing recent or past evidence. In attempting to answer the first question one can confine one's argument to the Sudanese context, as Mahmud (1983) has done, or adopt a more global, historical perspective as is seen in the reasoning employed by Bokamba (1983, 1984). In an admittedly political treatise (which nevertheless lays claim to historical and empirically derived support), Mahmud contends that the spread of Arabic as a lingua franca, destined eventually to replace the many individual languages in the South, is inevitable. Using data from a survey of 2894 students enrolled in 21 schools in the capital of the Southern Region, Juba (and one school outside of Juba) Mahmud states that the first stage of an irrevocable process, fostered by marriage among different tribes, whereby Arabic becomes used with increasing frequency to meet communication demands has already begun. The obvious implication of this thesis is that efforts of the IRL are a waste of time since they only tend to delay the inevitable domination of Arabic. The fact that data collected from the largest city in the South might not be generalizable to rural areas seems to bother Mahmud only slightly, since he mentions it first as a potential limitation of his data, but then dismisses it subsequently claiming "whatever differences exist among sectors are essentially ones of degree and not of kind" (Mahmud, 1983:61). The invalidity of this unscientific approach to theory formulation is borne out by Hoppe's data, which shows that only in the most northern province, Bahr el Ghazal, is Arabic making any headway as a preferred language.

Whether Mahmud's prophecy will be fulfilled eventually is an open question. It is probably more likely that Arabic will assume a wider role as a lingua franca than it presently does, without replacing local languages completely. One can point to counterexamples in Sudan today where tribes in the Northern Region have resisted acculturation and assimilation and kept their language as the primary means of communication. The most notable example of this is perhaps the Gaam, a tribe of about 40,000 inhabiting the central massif of Blue Nile Province, who are often referred to as the "Ingessana", presumably "the thankless ones" for their refusal to accept Islam. Still, the spread of primary education to rural areas offers the most likely vehicle for the expanded use of Arabic, so Mahmud's thesis cannot be rejected entirely.

A conceivable long-term result of the propagation of Arabic through the educational system is the extinction of minority languages presently spoken in Southern Sudan. Although this possibility presently appears somewhat remote, it is not without historical precedent. The maintenance of any language depends on the extent to which it is actively used by successive generations. Whether future generations continue to acquire a language is determined by a number of sociolinguistic conditions in the area where the language is spoken.

Among these are the percieved status of the language, the extent to which it is spoken at home and in the economic community, and whether it has socioeconomic value, i.e., is used to transact business. Languages perceived as having no value other than the maintenance of a cultural heritage will likely be abandoned by future generations for languages whose functional currency brings greater rewards. Dressler (1982) points out that once speakers begin to perceive their language as having diminished prestige and value, this perception is difficult to reverse. There are numerous examples of languages which have been subject to this kind of prestige loss with a resulting diminished use: Irish in Ireland (Macnamara, 1970), Welsh in Wales (Lewis, 1982), and Yiddish in Central and Eastern Europe (Fishman, 1982). Similarly, there are several cases of language decay and death whch can be traced to the elevation of a single language to the status of a national language, e.g., the decline of Greek and Latin in the fourth and fifth centuries (Kahane & Kahane, 1979), the decreased use of Slovanian in Corinthia and Breton in France (Brosnahan, 1963), and the extinction of hundreds of Amerindian languages in North America (Leap, 1981).

The possibility that a similar fate might await hundreds of African languages is recognized by Bokamba who argues that "if Africa is to develop both as a geographical and cultural region it must preserve its cultural heritage. And this cultural heritage is in its languages...which must (therefore) be preserved and enriched, because they are the most effective tools of personal and national development" (1984, p. 39). He goes on to note that although very few linguists and anthropologists encourage the death of languages, . . . "the multiplicity of African languages makes any realist welcome such a development for national integration purposes." It is within this context that Mahmud's polemic is best understood. He undoubtedly sees himself one of the "realists" who feel compelled to seek support for a viewpoint that might well be accepted as "intuitively" correct by many African governments, i.e., that multilingual literacy programs are a luxury which contries seeking to promote national integration cannot afford. Rather then expend resources on such projects, the official language should be taught from the first year of school.

The superiority of this unilingual approach, which has gained some acceptance among Sudanese educators (see for example Scharrer, 1983), over a multilingual approach, which makes use of the child's mother tongue in school, has not been demonstrated. There are a number of studies which show that children can learn to read a second language while learning to read their own (Cohen, et al 1970; Bowen, 1968; Lambert and Tucker, 1972; Malherbe, 1946; and Ramos et al, 1967), thus calling into question the validity of the pronouncement that a child should first learn to read and write in the language spoken at home if he is to command any language (UNESCO, 1953). However, in support of the multilingual approach it should be noted that the excellent results obtained in the aforementioned studies may be attributed in part to sociological status (the children involved came from upper middle and middle class homes) and in part to the quality or the programs (they had excellent facilities, materials and highly trained teachers). In countries where these conditions are not present, controlled studies have shown that beginning reading in the mother tongue before switching to the national (second) language produces higher levels of comprehension than starting instruction in the latter from PI, e.g., Berrera-Vasquez (1953), Burns (1968), Mondiano (1966), Rubin (1968) and Valencia (1970a, 1970b).

Further support for the multilingual approach can be found in recent high rates of literacy claimed for the campaigns mounted in Ethiopia (Demos, 1984), which cite the use of mother tongue literacy as an important factor in bridging the gap to learning to read the national language, Amharic. Similarly, one can point to the success of multilingual programs in the Soviet Union where various languages of the Republics are used for instruction with Russian being taught as an obligatory subject. The results, if they can be believed, have been quite phenomenal--almost 100% literacy within half a century. Finally there is one rather dramatic piece of evidence which suggests that beginning primary school with the national language may bring about undesirable results. In a detailed examination of the educational policies of West Africa, Bokamba (1984) has shown that the approach pursued in Francophone Africa where French is emphasized to the exclusion of the regional languages has resulted in an alarming increase in illiteracy over the past two decades.

Although as we have seen, there is evidence that both monolingual and multilingual programs can result in the attainment of literacy in a second language, it may be that the former are more effective in highly developed societies where there is parental pressure to supply motivation for learning, whereas the latter are more successful in less developed societies. There appear to be definite similarities in terms of setting and working conditions between the Sudanese project and other rural educational programs which have achieved a high rate of literacy by beginning reading in the native language, most notably Mondiano's Chiapas Mexico project, Berrera-Vasquez's study of Tarascan Indians and Burn's project with Quechuan Indians. This and the recent progress shown by the multilingual approach tried in Ethiopia could be used to argue that the Southern Regional Ministry has quite possibly chosen the educational policy which will prove optimally effective for that area.

Advocates of multilingual education also claim that there are hidden motivational advantages to beginning literacy in the mother tongue. Preck (1973) and Spolsky (1972), have observed that mother tongue instruction in minority languages boosts their status since it implies the acceptance of their cultures. The result, they claim, is an increase in motivation for the children of these minority language groups to become literate. On one of his visits to the Sudan, Cowan found some anecdotal evidence in support of the first part of this proposition. While visiting Maridi he had the opportunity to observe a reception by the tribal elders of the SIL linguist who had been assigned to work on Baka, a smaller Role B language which is surrounded by a larger Role A tribe, the Zande. Although most of the discussion was confined largely to details regarding how this person was to be housed, there were repeated references to the importance of his arrival. He was viewed almost as a liberator or redeemer. The IRL language officer shepherding the linguist through the ceremony, a Baka, explained the reason for this attitude when he said: "Now we shall have a written language like the Zande, and they can no longer consider us inferior." It is difficult to believe that the children of the Baka will not receive considerable encouragement from their parents to learn to read and write when materials are eventually produced in their language.

The following conservative conclusions may be drawn from the foregoing discussion. Although there is no definitive proof that learning to read in the native language first makes it easier to learn to read a second language,

there may be benefits in the form of increased motivation to learn which justify adopting this approach in literacy programs designed for conditions like those in rural Southern Sudan. An alternative approach, that of not using indigenous languages but instead beginning instruction in national language at P1, may not necessarily prove more efficient since it will not motivate children to learn to the same degree as the former scheme. Both of these approaches will be equally impeded by factors existing in developing countries such as poorly trained teachers, poor materials and socio-economic conflicts that interrupt the continuity of education. A reasonably long time frame--at least a decade--will be required to evaluate whether the multilingual approach has a reasonable chance of succeeding. Termination of funding for this project by USAID deprived that agency of a unique test case which could have been held up as a standard by which the value of future endeavors of this sort could be judged.

There can be little doubt that the Southern Sudanese literacy project has been viewed quite differently by the central government in Khartoum than by the Southern Regional Government, and that considerable significance has been attached to it by both parties over the past decade. The reason why this project is seen as having serious consequences for the promotion of national unity may best be understood by viewing it within the context of the framework of language policy decisions proposed by Fishman (1971). He noted that the factors affecting the choice of language policy made by developing countries could be conveniently divided into three types. Type A decisions are dictated by a general consensus among the "leading circles" or "elite" that no "indigenous Great Tradition" existed which the majority of the population might draw upon to assist in promoting national cohesion. In such cases, Fishman suggested the language policy chosen by a nation is generally a language of wider communication or international language, which is frequently the language of a former colonial master. Type B decisions, on the other hand, are based on the recognition of the existence of a "Great Tradition" which is "available to provide the indigenized and symbolically elaborated laws, customs, literature...identity appropriate for nationwide identification." This perception leads to the choice of an indigenous or indigenized language. Type C decisions are characterized by what Fishman refers to as a "conflicting or competing multiplicity of great traditions," none of which dominate. Since each of the traditions is "numerically, economically and ideologically strong enough to support large-scale sociocultural and political-operational integration" their co-occurence within a nation can result in considerable tension. To reduce this, a compromise choice is made whereby a language of wider communication is typically adopted as the national language and multilingualism in the form of selected indigenous languages serves the regional traditions.

Quite a number of African nations can be viewed as having made language policy decisions which fit Fishman's typology. Many of the Francophone West African countries could be considered Type A nations, and Tanzania, Somalia and Ethiopia could be classified as Type B decision countries, although, as Bokamba (1984) has pointed out, Tanzania and Ethiopia might be viewed as Type C nations from a cultural and a linguistic perspective, since other major languages and cultures have been subsumed under the present language policies of these two countries, each of which has favored a local language, i.e., Swahili in Tanzania and Amharic in Ethiopia. Nigeria is a reasonably good example of a Type C country. The language of wider communication, English, is

the national language whereas indigenous languages -- Hausa in the North, Yoruba in the West and Igbo in the East -- were permitted to serve some educational and governmental functions in the various regions from the moment independence was obtained.

Sudan represents a unique case which does not fall neatly into any of Fishman's categories. The history of this country is one which saw many different colonial rulers, Turks, Egyptians, Belgians and English. By the time the British finally departed in 1955 the ethnolinguistic lines were drawn between the Northern Arabic-speaking population and the Southern Region where English, due to Christian missionary activities, and vernacular languages were used. The civil war which erupted in 1955 was in part caused by the Southerners' fear that they would be subjected to the cultural and linguistic preferences of the North. The language policy proposed 17 years later to terminate the hostilities, whereby Arabic was declared the national language, English the "principal" language of the Southern Region and limited education was permitted in vernacular languages, was a compromise which might have, if allowed to develop, brought the two regions into something like a reasonable working relationship. Unfortunately, the perception in the South has been, and apparently continues to be, that the central government in Khartoum is unsympathetic, if not opposed, to the Local Languages Literacy Project. This perception, which is based on administration difficulties the South has encountered in obtaining and releasing funds for the project as well as attitudes expressed by educators and government officials in Khartoum, has only deepened the suspicion of Southern educators that the fears they had harbored about Northern intentions were justified. Vernacular eduction is only one of a number of issues which has been a source of continued tension between the North and South, but it has been a significant one and serves to illustrate clearly how politics and language policy are often inextricably interwoven in developing countries.

In retrospect the lessons to be learned from examining the evolution of the Local Languages Literacy Project have as much to do with the result of language policy decisions as they do with the variables which affect the potential for the success of multilingual educational policies. Sudanese experience underscores the fact that language policy decisions intimately shape the attitudes and beliefs of linguistically diverse populations enclosed by arbitrarily defined borders. Failure to recognize the need for a language policy which will be reasonably acceptable by diverse linguistic groups will ultimately increase suspicions and aggravate imagined slights, thereby making the achievement of national cohesion even more difficult. Only when government both realizes the impact such policy decisions can have and is willing to address the problems created by these decisions can progress be made in circumstances like those presently found in Sudan.

6.0 POSTSCRIPT

Detailed plans are seldom implemented in Southern Sudan without considerable modification. This has certainly been the experience of the local languages literacy project. The early plans proved to be much too optimistic, but without optimism there is no hope for the education system in Southern Sudan.

Up to May 1983, the project was still progressing basically according to the original plans, albeit at a much slower pace than originally expected. The original timetable was revised and a slower pace was accepted. This appears to be the situation in the great majority of projects in the region. Progress according to schedule presupposes a state of development not yet reached in Sudan.

Primers had been written in seven of the Role A languages and teachers had been trained to use them. An accurate record of schools and pupils using the books is not possible, but the number was increasing steadily and more teachers were trained in the early months of 1983 for the new school year.

For the two remaining Role A languages, an SIL linguist was carrying out research in one (Shilluk) and a team was expected to work in the other (Moru), within twelve months. One or two Role B languages were being considered as possibilities for joining with Shilluk and Moru to make up a third cycle of language projects.

An SIL team was working on preparing Arabic transition materials in cooperation with members of the IRL staff. These materials were to be tested in schools beginning in the 1984 school year. An SIL member was expected in 1984 to take up work on the English transition materials.

Revisions were being undertaken of the Cycle One primers and it was expected that these would be completed together with supplementary materials before the end of 1983 ready for the 1984 school year.

Plans existed for cooperating with the Curriculum Development Center in preparing textbooks in the vernaculars for arithmetic, science and religion. It was expected that teams would commence translating the textbooks into Role A languages toward the end of 1983.

All these plans and most of the activities of the Institute of Regional Languages and the local languages literacy project have, however, been placed in jeopardy by recent political events. In May 1983, the Southern Regional government was dissolved and replaced by three new regions--Equatoria, Bahr el Ghazal and Upper Nile, each with its own government. This decision threw the government administration of the South into chaos, and it is still not clear whether the Institute for Regional Languages will survive, and if so in what form.

Rebel activity has also increased to the point where all the activities connected with the project in the Upper Nile and Bahr el Ghazal regions have effectively ceased. How soon they can be resumed is uncertain.

In general then, until there is greater political stability in the South, the Institute of Regional Languages and the local languages literacy project are not able to function normally. It is to be hoped that this state of affairs will soon change and that the project will be able to continue. As this proves possible, the lessons learned in the first years of the project should strengthen its future development and its impact in the schools of Southern Sudan.

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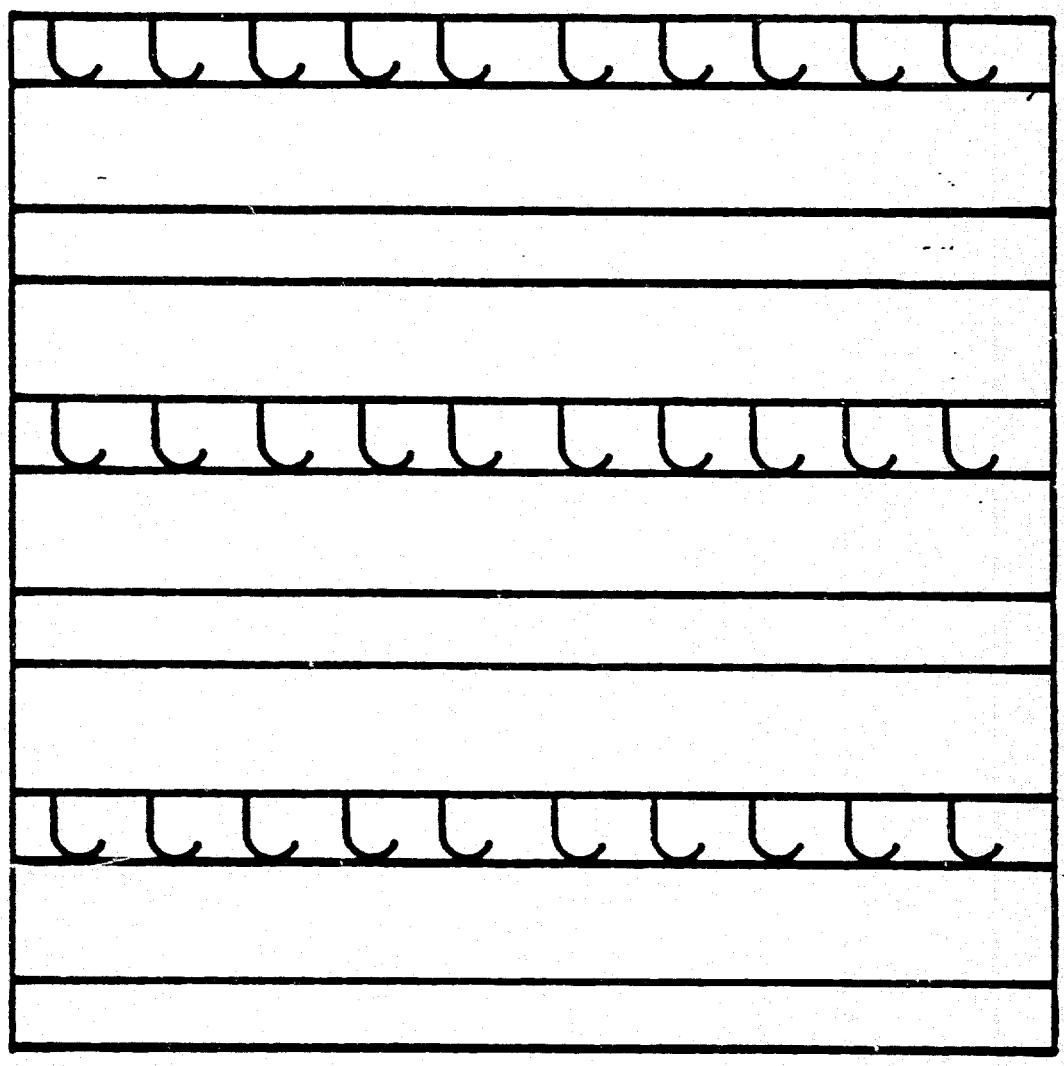
8.0 APPENDIXES



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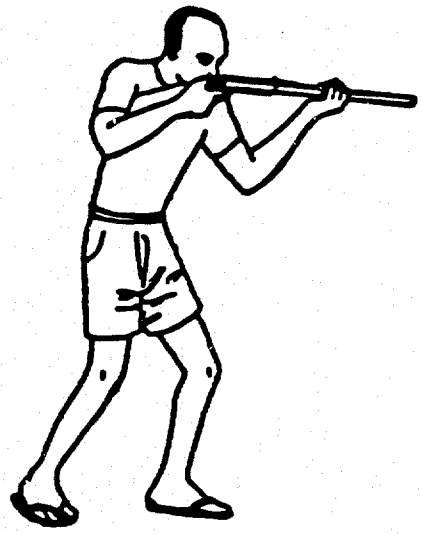
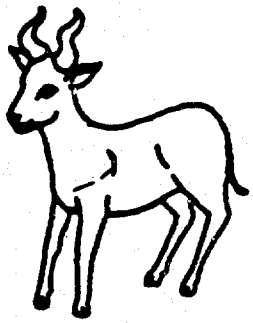
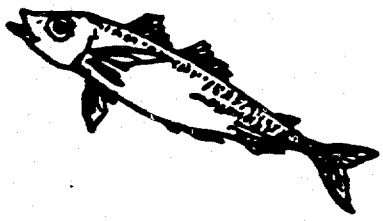




Bungaya kiya

Bungaya gi na kiya.

Tindo gi na lamba.



se

1

se
e

2

e	e	e
se	te	ne

3

se
te
ne

4

se	te	ne
sa	ta	na
si	ti	ni

5

se	nete	sene	tene

1

Nakoco ka kitito.
ka kitito
kitito

2

kitito
ka kitito
Nakoco ka kitito.
Bungaya ka si se.
A Tindo ka nono sino.

3

Nakoco ka kitito.
Nakoco ku kitito.

1

gba	gbe	gbo
sa	se	so
na	ne	no

se	gba
nete	gbala
sene	kigbi
tene	gbata

2

Nakoco ka kitito.

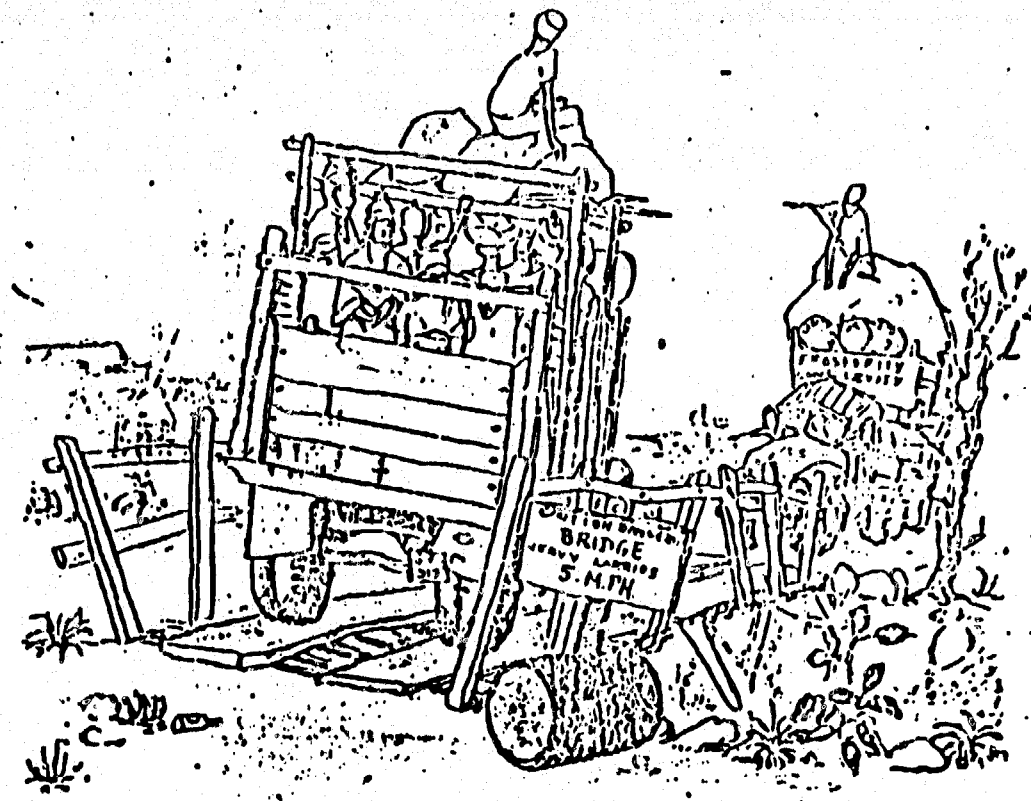
Nakoco ku kitito.

from Matafiya Oxford Hausa Reader 3 Oxford University Press 1958

TASHAR JIRGIN KASA

Yau Aliyu da Fadimatu, tare da kawunsu sun zo tashar jirgin kasa cikin mota. Sun zo tashar jirgin kasa cikin mota tare da kayansu.

Ga Aliyu da Fadimatu suna duba jirgi.



'Ina Aliyu da Fadimatu yanzu?
Ga su nan cikin mota zaune.
Suna zaune a kan kayansu.
Ina za su tafi?
Za su tafi hutu tare da kawunsu.
Ina kawunsu?
Yana zaune cikin mota a gaba.

APPENDIX 3F

New Format for Letter Drills Proposed by Joycelyn Clavinger

cibat

1

cibat
ci
i

2

i	a	o
ci	ca	co

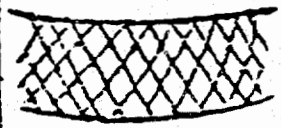
3

ci	ca	co
cik	cak	col

4

cik	cak	col
gik	gak	gol
	kak	kol

5

			
cibat	cuk	cieg	cambak

APPENDIX 3G

Directions for Writing Context Clues Drills

Lessons 1-25

1. Blanks should be near the end of the sentence.

2. The word you leave out of the sentence can be any type of word: noun, verb, adjective, functor, etc.

3. The 3 word which you write below the sentence should be different kinds of words: nouns, adj. functor, verb, etc.

Lessons 26-50

1. The blank can now be in the middle of the sentence as well as at the end of the sentence.

2. The word you leave out of the sentence can be any type of word.

3. The 3 words which you write below the sentence should be the same kind of words with only one of them being the correct word.

Lesson 51-

1. The blank may be any place in the sentence: beginning, middle, end.

2. The word you leave out can be any type of word.

3. The 3 words which you write below the sentence should look very much alike.

Directions for Teaching Context Clues

1. Have the pupils open their books to correct page.

2. Point out that a word is missing in each of the sentences.

3. Ask the pupils to read silently the 1st sentence and the words under the sentence, and to choose the best word that completes the sentence.

4. Ask the pupils which word is the best word to complete the sentence.

5. Ask the pupils to read silently the 2nd sentence and the words underneath, and choose the best word that completes the sentence.

6. Ask the pupils which word is the best word to complete the sentence.

7. Continue read each sentence and the words under the sentence until all the sentences have been read and the best word chosen for each sentence.

Proposed modification of Gudschinsky method functor drills, especially for functors with illustratable usages. Data from Kresh.

by Rick Brown

Drill 1

picture of boy walking	Kôkó ǎ lõwó nî. ǎ lõwó nî lõwó	'Koko is walking.' is walking walk

Comments on drill 1: The pupils are told that the sentence describes what is happening in the picture. They are instructed to look at the picture and then try to read the first line. The picture should help them to attack or guess at a and ni. They should already know Kôkó and lõwó. The teacher can then read the sentence to them correctly and point out to them the new functors. Lines two and three could be optional, as could the underlining or circling of the new functor (s), but one or the other should probably be used, if not both. The letters of the new functors may or may not be known to the pupils. The primary modification is that an illustration is supplied to provide clues to the pupils to help them to read the sentence before it is read to them by the teacher. By beginning with the meaning, the drill encourages the pupils to decode rather thatn recode the words of the sentence.

Drill 2

picture of boy walking, continued	lõwó ǎ lõwó nî ã̌ tá lõwó nî	'walk/he-walked' 'He-is walking.' 'He-is still walking.'
picture of boy shelling ground-nuts	rẽshé wãzéyẽ ǎ rẽshé wãzéyẽ ǎ rẽshé nî ã̌ tá rẽshé nî	'He-shelled ground-nuts.' 'He-is shelling ground-nuts.' 'He-is shelling them (VP-final mark 'He-is still shelling them '.

Comments on drill 2: This drill could be optional. When used, it could be more of a transformation drill, changing root forms into other forms, or at leas changing the known into the unkown. This could include the addition of morphemes of course. The purposes of this drill would continue to include chunking and focu on exhibiting the function of the new functors, but in addition to this, the various functions of a single functor could be demonstrated, contextually trigge morphophonemic changes (transformations) could be exemplified, and pictures coul assist the pupils to decode. In the Kresh imperfect verb phrases, ni is require to mark the end of the verb phrase if there is no marked direct object or advert in that position (the inanimate direct object is a zero morpheme.) Thus ni occurs quite expectedly after an intransitive verb like lowo 'bathe' in an imperfect verb phrase. It recurrs when wazeye is replaced by a pronoun ∅ 'it'. The contextually sensitive morphotonic change of ǎ to ã̌ before tá is practiced twice. The following third build-up could have been provided:

APPENDIX 31

New Revision Lesson Format Proposed by Julie Van Dyken

Sample Revision Lesson.

Lesson 6

Dabira a ngbe gita.

Dabira a ngbe ira.

Inie a bägi baga.

Ri ki bägi abapu.

Inie ki bi abapu.

Ri ki ri abapu.

Dabira a go ku kporo yo

Dabira a ba ira ku kporo yo.

The sample on the opposite page is based on items taught in lessons 1-5 of the current Zande primer manuscript.

Items to be reviewed:

Letters introduced in lessons 1-5:

g, b, r, a and i.

Functors taught in lessons 1-5:

ki	'then' (verb aspect marker)
a	'past tense marker'

Words used in stories of lessons 1-5:

Nouns:	abapu	'beans'
	baga	'basket'
	gita	'hoe'
	ira	'mat'
Verbs:	ga	'return'
	bi	'see'
	ri	'eat'

Other known information (words taught in pre-prim

Functors:	ku...yo	'in'
	Ri...	'She...'
Nouns:	Dabira	'Name of Inie's fat
	Inie'	Six yr old girl
	kporo	'home/homestead'
Verbs	ngbe	bought

(cont'd.)

Procedures for Writing Revision Lessons by Julie Van Dyken

Step One: List items taught in lessons since the last review lessons:
- letters
- Functors
- Content words

Step Two: Identify substitutable words.

Re-list the words above (Product of Step One) according to semantic and/or syntactic categories
- Subject nouns
- Object nouns
- Verbs
- Other

Step Three: Identify words which are minimal pairs or homonyms.

e.g.	bi	ga	bi
	ba	ba	ri

Identify other "look alike" words"

baga
bagi

NB: In early lessons there may not be any minimal pairs to contrast.

Not all languages have monosyllabic words for contrastive purposes. A single syllable may never have meaning alone. If such pairs do not exist, then it is questionable why a reader should be asked to learn the minimal contrast anyway.

Step Four: Select which words for review (listed under Steps One through Three) need focus. These words should appear in the substitution slot of the sentences accompanying the pictures.

Suggested guideline for selection priorities could be
1. Functors
2. Graphically similar words
3. Less common contentives

Step Five: Write sentence pairs in which the second sentence substitutes one or more words used in the first.

The sentence pairs should substitute
1. graphically similar words
2. functors (if the difference is picturable)
3. words which are both graphically and semantically dissimilar.

(cont'd.)

Step Six: If desirable and possible, order the sentence pairs in a logical order.

e.g. Dabira buys a mat in one picture.
In a later sentence pair Dabira throws the mat into the house.

Instructions to the teacher: Have the pupils identify the sentence that says what the picture says: "Look at the picture. Read the two sentences. Which one says what the picture says?"

NB: The lesson plans must require each pupil to read both sentences, so that words in the "wrong" sentence are also reviewed.

Problems with the lesson type:
a. Minimal pairs may fill different syntactic positions.
b. Functor differences may not be picturable.

Zande Literacy Test

1. Nonsense Syllables ga, mä, rä, bi, ru, gu, ra, ma, mi, ba, gä, bä

2. Known Words

kporo	'house	nvugä	'monkey'
nzengu	'market/guinea fowl'	bägi	'sold'
gita	'hoe'	bundu	'gun'
abapu	'beans'	suma	'fish net'
ira	'mat'	bibiri	'black'

3. Unknown Words

meme	'goat'	igä'	'hide'
gama	'give away'	tita	'grandfather/mother'
ora	'run'	nzeme	'fat'
onga	'breath'	Dari	'frog'
ugu	'dry'	bagara	'cow'

4. Reading Comprehension

Passage

Nako a ndu ku Bako yo, i ki ndu na Bako
(name) past go to (name) there they then go with (name)
ku nzengu yo ku ngbe abapu na boko. I a ndu
to market there to buy beans and pumpkin They past go
ki ngbe abapu na boko, ki ga ku kporo yo.
then buy beans and pumpkin then return to house there.
Hõ i aá ga ni, i a bi mama. U
When they progressive return (when) they past see leopard It
aá ri ango. Hõ i a bi mama ni, i
progressive eat dog When they past see leopard when they
a oro be ru. Hõ i aá ora ni, abapu a
past run from it When they progressive run when beans past
ka be Nako na boko a ti be Bako. I ki
pour from (name) and pumpkin past fall from (name) They then
oro ku kporo yo.
run to house there

(cont'd.)

'Nako went to Bako's place, then they both went to the market to buy beans and pumpkin. They went and bought some beans and pumpkin and then returned home. On their way (as they were returning) they saw a leopard eating a dog. As soon as they saw the leopard, they ran from it. As they were running away, Nako dropped the beans and Bako let go of the pumpkin. They ran (all the way) home.'

Comprehension Questions

1. A da na a ndu nzengu yo?
   pl. who rel. past go market there
   'Who went to the market?'

2. Gini i a ndu ka manga ha nzengu yo?
   What they past go in order to do it market there
   'What did they go to do in the market?'

3. I a ndu ku wäri fuo ngbe yo ahe nzengu yo?
   They past go in order to where after buy their things market there
   'Where did they go after making their purchases at the market?'

   Gini hẽ i a bi hõ i aá ga ni?
   What thing they past see when they prog. return when
   'What did they see as they were returning?'

5. Gini hẽ mama aá ri he?
   What thing leopard prog. eat it
   'What was the leopard eating?'

6. Tipagine i a oro tini be mama?
   Why they past run why from leopard
   'Why did they run from the leopard?'

7. Gini pai i a mängi he na agu ahẽ
   What thing they past do it with those things

   i a ngbe he nzengu yo?
   they past buy then market there
   'What did they do with the things they bought at the market?'

Nuer Literacy Test: Primary 1 and Beginning Primary 2

1. Nonsense Syllables gɔ, kɔ, lɔ, ga, ka, la

2. Known Words

lak	'to wash'	moc	'to give a gift'
lath	'to put'	thal	'to cook, boil'
kal	'compound, fence, child'	bal	'to roast'
gat	'child'	bith	'fishing spear'
gɔɔk	'baboon'	joc	'to chase'

3. Unknown Words

thäk	'steer'	wic	'village'
lɔk	'floating free, blowing in the wind'	bak	'to split open'
yak	'hyena'	mith	'food, to eat intrans.'
gɛth	'to clean a barn'	ben	'to come'
raan	'person'	cak	'milk'

Reading Comprehension

Passage

Man Dëëŋ cɛ wä rɛy kal. Gat Man Dëëŋ
Mother of Dëëŋ she/past go into compound. Child (of) Mother of Dëëŋ

a thin. Dɛŋ kɛnɛ Jɔk cikɛ wä thin bä. Man Dëëŋ
is present. (name) and (name) they/past go there also. Mother of Dëëŋ

cɛ Dɛŋ kam bith. Cikɛ wä may yieer kɛ
she/past (name) give fishing spear. They/past go fishing (in) river with

bith. Jɔk cɛ rec näk. Cike je bul. Ci Dɛŋ
fishing spear. (Name) he/past fish kill. They/past it roast. He/past (name)

rec näk bä. Cike rec Dëëŋ naŋ. Cikɛ wä kakä.
fish kill also. They/past fish (of) Dëëŋ take. They/past go (to) field,

Gɔɔk a rɛy kakä. Jɔk cɛ gɔɔk joc kakä kɛ
baboon is in field. (Name) he/past baboon chase (from) field with

th Dëëŋ. Cikɛ riŋ wic kɛ rec.
spear (of) Dëëŋ. They/past run village with fish.

(cont'd.)

'Dɛŋ's mother went into the compound. Her child was there. Dɛŋ and Jɔk also went into the compound. Dɛŋ's mother gave Dɛŋ a fishing spear. They (Dɛŋ and Jɔk) went fishing with the spear. Jɔk killed a fish (with it) and they roasted it. Then Dɛŋ killed a fish too. They took Dɛŋ's fish and went into the field. There was a monkey (a baboon) in the field. Jɔk chased the monkey from the field with Dɛŋ's spear. Then they ran to the village with the fish.'

Comprehension Questions

1. Kɛɛ nhiam Dɛŋ kɛnɛ Jɔk cikɛ wä ni?
   at first (name) and (name) they/past go where
   'Where did Dɛŋ and Jɔk go first? (Answer: into the compound)

2. ɛ ŋa te thin rɛy kal?
   It was who was present in compound
   'Who was in the compound?'

3. Cikɛ ŋu lɛl kɛ rɛc Jɔak?
   they/past what do with fish (of) Jɔk
   'What did they do with Jɔk's fish?'

4. Cikɛ ŋu lɛl kɛ tɛc Dɛ̈ɛ̈ŋ?
   They/past what do with fish of Dɛŋ
   'What did they do with Dɛŋ's fish?'

5. Cikɛ ŋu lɛl rɛy kakä?
   They/past what do in field
   'What did they do in the field?

6. ɛ ŋu lat kɛn ɛ ɔ?
   It is why do they it why
   'Why did they do it?'

7. ɛ ŋu caa rec Dɛ̈ɛ̈ŋ naŋ wic ɔ̈?
   It is why passive fish of Dɛŋ bring village why
   'Why did they bring Dɛŋ's fish to the village?''
   'Why was Dɛŋ's fish brought to the village?'

Nuer Literacy Test: Intermediate Primary 2

1. Known Words

cak	'milk'	ɛmɛ	'this'
käp	'to catch'	gɛth	'to clean a barn'
gaatkɛ	'children/their'	jith	'scorpion'
luak	'barn'	guɔŋ	'guinea fowl'
bith	'fishing spear'	dɛlɛ	'sheep/his'

2. Unknown Words

laak	'to graze'	kakdɛ	'field/his'
cik	'to skirt a grass hut'	mandiɛn	'mother/their'
guɛk	'frog'	lɛk	'kind of fish'
cuk	'drinking gourd for men'	luɛk	'bait'
guaak	'argue'	guath	'to pull out'

3. Reading Comprehension

Passage

Dɛŋ kɛnɛ Jɔk kɛ gaat Man Dëëŋ. Dɛŋ cɛ Jɔk
(Name) and (name) are children of mother of Dëëŋ. (Name) he/past (name)

kam cibat. Jɔk cɛ cibat moc kɛ luɛk. Jɔk cɛ
give/lend fish hook. (Name) he/past fish hook give to frog. (Name) he/pas

rec käp kɛ cibat. Dɛŋ cɛ rec käp bä. Cikɛ ke
fish catch with fish hook. (Name) he/past fish catch also. They/past them

näk kɛ bith Dëëŋ. Cikɛ rec Jɔak bul. Cikɛ
kill with fishing spear (of) (name). They/past fish (of) (name) roast. They/past

wä wic. Jɔk cɛ cibat lath rɛy kal. Cikɛ rec
go village. (Name) he/past fish hook put in compound. They/past fish

Dëëŋ kam Man Dëëŋ. Ci Man Dëëŋ ɛ thal.
(of) (name) give mother of Dɛŋ. She/past mother of Dɛŋ it boil.

Dɛŋ kɛnɛ Jɔk cikɛ dɛl naŋ luaak. ɛ dɛl
(Name) and (name) they/past sheep take (to) barn. It is sheep

Man Dëëŋ kɛnɛ gaatkɛ. Dɛŋ kɛnɛ Jɔk cikɛ wä rɛy
(of) mother of Dɛŋ and children/her. (Name) and (name) they/past go in

kal mandiɛn.
compound (of) their mother.

(cont'd.)

'Dɛŋ and Jɔk are Man Dɛɛŋ's children. Dɛŋ gave Jɔk a fish hook and he baited it with a frog. Jɔk caught a fish with the fish hook and Dɛŋ also caught one. They killed them with Dɛŋ's fishing spear. Then they roasted Jɔk's fish and afterwards returned to the village. Jɔk put the fish hook back in the compound. They gave Dɛŋ's fish to Man Dɛɛŋ and she cooked it.

Dɛŋ and Jɔk took a sheep to the barn. The sheep belongs to Man Dɛŋ and her children. Dɛŋ and Jɔk then returned to their mother's compound (having safely secured the sheep in the barn).'

Comprehension Questions

1. ɛ ŋu mi ci Jɔk ɛ lath kä cibat?
   It was what rel. he/past (name) it put on fish hook
   'What did Jɔk bait his fish hook with?'

2. Caa rec näk kɛ ŋu?
   Passive fish kill with what
   'What were the fish killed with?'

3. Cikɛ ŋu lɛl kɛ rec Jɔak?
   They/pl. what do with fish (of)Jɔk
   'What did they do with Jɔk's fish?'

4. Cikɛ ŋu lɛl kɛ rec Dëëŋ?
   They/pl. what do with fish of Dɛŋ
   'What did they do with Dɛŋ's fish?'

5. ɛ ŋu mi kam kɛn rec Man Dɛɛŋ?
   It is what rel. give they/pl. fish mother(of)Dɛŋ
   'Why did they give the fish to Man Dɛɛŋ?'

6. ɛ ŋu mi cu kɛn ɛ naŋ luaak?
   It is what rel. narr. they/pl. it take (to) barn
   'What did they take to the barn?'

7. Man Dëëŋ ɛ ŋu diɛn?
   Mother of Dɛŋ she is what their
   'Man Dëëŋ is their what (what relationship)?'

Nuer Literacy Test: Advanced Primary 2

1. Known Words

rieydɛ	'canoe/his'	waregakni	'papers'
waath	'kind of reed/ river access'	dhɔɔl	'boys'
		guandiɛn	'father(s)/their'
duɔɔr	'thing'	elɔŋ	'very'
lɔcdiɛn	'heart/their'	gnilɛ	'he is looking at/ checking up on'
cäl	'Nile perch'		

2. Unknown Words

Kuanylualthɔan	'place name'	runwaŋ	'morning'
Tɔrpuɔt	'place name'	tuytuy	'water hyacinth'
Waakɔw	'place name'	jiök	'to say'
Wunkir	'place name'	kor	'stream'
cieŋ	'home/to live'	thiaŋ	'to fill'

3. Reading Comprehension

Passage

Mee dan tee dhool mi cɔali Ruɔt. Dhool ɛmɔ
Sometime ago there was boy rel. called (name) Boy that

te dhɔɔriɛn kä Tɔrpuɔt. Mee caa duelgorkä Kuanylualthɔan
is present home/their at village name. When passive school place name

lɛp kä Wunkir, cuɛ ben rɛɛk kɛ yöö bɛ wä dueelgɔrkä.
open at place name he/nan. come town in order to he fut. go school.

Jɛn cua jɛ nhɔk ɛ kuäär duëëlgɔrka, kä kɛ kuiy
He pass. nan. him accept by head (of) school but for sake of

duëël tɔɔcä thilɛ guaath mi cɛ jek. Cuɛ
house of sleeping there was no place rel. (which) he/past find. He/narr.

loc dhɔɔriɛn kä Tɔrpuɔt.
return home/their at place name.

Cue jɛ lar guan ɛn yöö caa nhɔk duelgorkä kä
He/narr. it tell to his father that passive accept school but

thiɛlɛ guaath tɔɔca kɛ kuiydɛ. Cu guan ɛ
there was no place of sleeping for sake/his. Narrative father/his him

jiök, "Jin bi te cieŋ waneme. Thilɛ mi
say, You you/fut. be present home here. There is nothing which

(cont.d)

bi lat. Bi duŋdu a luɔth kɛ runwaŋni
you/fut. do/work. You/fut. belonging/your hab. getting off early in mornings

diaal, wii dueelgɔrkä kä kuanylualthɔan."
all you fut. pres. go school at place name

Kɛ kuiy ɛmɔ la Ruɔt a jiɛn kä Torpuɔt
For sake that habit. asp.(name) habitual aspect leave from place name

kɛ runwaŋ kä bɛɛ Waakɔw ben ŋok.
at morning and he/fut. name of a stream come cut/cross.

Mee ci nhiaal ku tuɔk dëm, ci kor Waakɔw thiaŋ.
When asp. rain begins fall, asp. past stream name of stream fill.

Mee /ken Ruɔt riey jek, kɛ ɣöö ɛ dhool mi pɛl
When he neg. past (name) canoe find, because he boy rel. who clever

ɛlɔŋ, bɛ tuytuy dol, bɛ bokni kɛnɛ bieeyni kɛ
very he/fut. water hyacinths gather, he/will books and clothes/pl. them

lath wic tɔytɔy. Bɛ ben kuic kɛtɛ, ɣɔɔkɛ
put on head of water hyacinth. He/fut. come across swimming pres. pushing

tuytuy. Jɛn /cɛ duelgorkä päl. Kä thaaŋ
water hyacinth. He neg. pres. school miss/be absent. But some

guaathni bɛ cop kɛ jɔak.
times he/fut. arrive late.

Mee ci kuäär duëëlgɔrkä jɛ thiec kɛ mɔ la bee
When asp. past chief (of) school him ask why habitual come

kɛ jɔak, cuɛ jɛ lar i ɛ nan dhɔara ka Tɔrpuɔt. Cu
late he/narr. it say that is far home/my at place name. He/narr

kuäär wic dɛ car kä cuɛ Ruɔt moc guaath tɔɔcä
chief head/his think and he/narrative past (name) give place of sleepin

dueelgɔrkä ke ɣöö thilɛ ram mi mar kɛ rɛɛk.
(at) school because there is no person rel. who related him (at) the town.

/Ken Ruɔt lɛ luoc dhɔɔriɛn, cuɛ lari guan
He/neg. past (name) again return home/their, he/narr. past told father/h

lär cɛ guaath tɔɔcä jek dueelgɔrkä. Kä cu guan
message he/past place of sleeping find (at) school. And he/narr. father/

(cont'd.)

lɔcde	tɛɛth	elɔŋ	ke yöö	ci	gatdɛ	guaath	jek.
heart/his	fall/happy	very	because	he/past	child/his	place	find.

'Once there was a boy called Ruɔt who lived in the village of Tɔrpuɔt. When the (boarding) school Kuanylualthuɔan opened up at Wunkir, he went there to enroll. He was accepted at the school by the headmaster but unfortunately there were no more beds in the dormitory left. So Ruɔt went back to Tɔrpuɔt.

He told his father that he had been accepted at the school, but that there were no boarding spaces available. His father then said to him, "You will stay here at home, but you won't do any work. Every day you will get up early and go to the school at Kyanylualthuɔan."

So every day Ruɔt left Tɔrpuɔt very early in the morning and crossed Waakɔw creek. However, when the rains began to fall, the Waakɔw began to rise (to a height which was to deep to ford on foot). When Ruɔt couldn't find a canoe to cross the stream with, he, being a clever fellow, would put his books on a thick pad of water hyacinth and swim across pushing the hyacinth ahead of him. He never missed a day at school, but he sometimes arrived late.

When the headmaster asked him why he often came late to school, Ruɔt said, "Because my home at Tɔpuɔt is very far from here." Then the headmaster decided to give Ruɔt a place to sleep at the school because there was no one related to him in town who might put him up.

Ruɔt didn't go back to his house, rather he sent his father a message saying that he had found a place to stay at the school. His father was very happy to hear that his son had found a place to stay.'

Comprehension Questions

1. Ruɔt te dhɔɔriɛn winith?
   'Where does Ruɔt live?'

2. ɛ ŋu mi la riɛk Ruɔt?
   'What is troubling Ruɔt?'

3. ɛ ŋu mi caar guan Rut ɛ kɛ kuiy wä gatdɛ dueelgɔrkä?
   'How does Ruɔt's father feel about his son's (child's) going to school?'

4. ɛ guaath ith rɛy runnä mi la Ruɔt a bä kä Tɔrpuɔt?
   'What season of the year is it when Ruɔt was (is) coming from Tɔrpuɔt?'

5. La Ruɔt yier a ŋuok idi?
   'How did Ruɔt cross (habitually) the river?'

6. ɛ ŋu mi moc kɛ Ruɔt guaath tɔɔcä ɛ kuäär?
   'Why was Ruɔt given a place to sleep by the headmaster?' (Answer: because he could see that the boy was very serious about wanting to go to school.)

APPENDIX 4E

Frequency Count of Words and Grammatical Morphemes in Lessons 1-15 in Zande Book 2

A. Nouns

Dabira	Male name	33
Inie	Female name	39
Naguru	Female name	21
nzengu	market	33
baga	basket	10
atio	fish	7
kporo	house, home	27
abapu	beans	14
bãgibãgi	something for sale	12
ira	woven mat	11
boko	pumpkin	5
gita	hoe	10
bundu	gun	8
ba	father	18
mama	leopard	17
nvugä	monkey	12

B. Pronouns

ri	she/her	14
ko	he/him	11
i	they	16
u	it	8

C. Adjectives

bibiri	black	10

D. Verbs

ndu	go	36

D. Verbs (continued)

ga	return/go (away from)	30
bi	see	37
baga[1]	sell	12
ngbe	buy	16
ra	sleep	2
rari	dream	2
imi	kill	7
ru	stand/be at a place	2
ri	ate	8
aa	progressive morpheme	10
a	past morpheme	66

E. Adverbs

Hõ...ni	when	11
uru	during the day	2
ki	then	71
yo	there also	68

F. Conjunctions/Prepositions

ku	to/toward	45
na	and/with	28
be	from/away from	5
a	also	11

[1] I have not provided separate counts for the past form bagi which appears more frequently than the citation form.