Large-Class Teaching
A Pilot Study of Eight Grade 5 Classrooms in kwaZulu-Natal

November 1998

Large-Class Teaching

A Pilot Study of Eight Grade 5 Classrooms in kwaZulu-Natal

Dr. T. E. Dachs

1998

Prepared for:
Joint Education Trust
P.O. Box 178
Wits 2050
Tel: 011-4036401
Fax: 011-3397844

By
Human Performance Systems Ltd.
P.O. Box 2024
Hillcrest 3650
Tel: 031-7656831
Fax: 031-7656831

ACKNOWLEDGEMENTS

Table of Contents

List of Tables & Figures

EXECUTIVE SUMMARY

A pilot study was undertaken of eight classrooms in kwaZulu-Natal to consider the following questions

- <u>How</u> do teachers in large classes interact with their pupils?

- <u>How effective</u> is their teaching?

- <u>What use</u> is made of teaching and learning materials?

- How does the <u>use</u> of such material contribute to effective learning?

- What do teachers, principals and materials designers <u>feel</u> about large class teaching and the benefits of the materials available to them?

The classes were selected to represent a cross-section of urban, peri-urban and rural schools - all of whom were engaged in implementing either the READ or the SMILE programme for language development.

Observations were made at twenty-two lessons and the verbal interaction occurring recorded on specially designed schedules. Interviews were also conducted with the school principals and the teachers involved. Learning gains were established for both the programmes.

An analysis was made of the nature and degree of verbal interaction and of the extent to which the teaching and learning materials supplied in the programmes were employed. The opinions of both principals and teachers on the appropriateness of the programmes and on the challenges presented by large class teaching were gathered and analysed.

This study highlighted the extensive degree to which the teachers of these large classes employ the teaching and learning materials supplied by SMILE and READ in their lessons and attributes much of the resultant learning and other classroom

management gains to the use of these. It endorses the belief that one of the most effective ways of improving teaching and learning, particularly in the area of language development, is to be found in the developing, supplying, and supporting of materials. These assist practising teachers of large classes by ensuring that meaningful learning takes place.

It is clear that the classrooms observed are dominated by teacher talk. An average of 81,82% of the observations made of the teacher indicated that he/she was talking. Whilst this is typical of many classrooms on most days throughout the country, other interesting behaviours were identified in the classrooms included in this study. Some 9,7% of the time was spent in interacting with groups of learners (4,64% explaining things to them and 4,06% asking them questions). A further 10,25% of the time was spent interacting with individual learners (1,64% explaining something and 8,61 % in questioning). Both these trends are encouraging but are more especially so when one remembers that these teachers are dealing with large classes (including one of 90 (earners). This group and individual interaction is, as is all the teaching in these classrooms, facilitated by the materials made available to the teacher.

In a similar way the 7,35% of time the teacher spent listening to or observing groups of learners and the 5,32% doing the same with a particular individual in the class is encouraging. Good use of the teaching and learning materials was made to facilitate this process.

In general, excellent use (and possibly even overuse) was made of the materials provided in the lessons observed. We, therefore, feel confident in our postulation that it is the existence, and the employment, of these materials which enables teachers to engage in this degree of variety of interaction whilst still maintaining control over the classroom environment.

The study attributes much of the learning and other classroom management gains of the large classes studied to the use of the materials supplied by SMILE and READ. It endorses the belief that one *of* the most effective ways *of* improving teaching and learning, particularly in the area of language development, is to be found in the developing, supplying, and supporting of such materials. These will, it is believed, do much to ensure that meaningful learning takes place in a well-managed classroom environment.

CHAPTER 1

PREVIOUS RESEARCH

This chapter attempts to place the present study in a meaningful context. Consequently, it reviews important research findings in four areas

- large class teaching;

- classroom verbal interaction;

- teaching styles; and

- the use of learning materials.

1.1   Large Class Teaching

A previous initiative of the Joint Education Trust in which a literature survey of existing international research on large-class teaching was undertaken by Kholofelo Sedibe. This is published as Appendix C of the President's Education Initiative (Ed. Diphofa, M.) in June 1997.   It is deemed appropriate to summarise the findings of this international research survey in order to indicate how the present study relates to such research.

The survey considers, amongst other things, studies undertaken in the United States of America and makes use of Glass and Smith's (1978, 1979) meta-analyses of research in this field, employing their classification of research initiatives into four categories

- the pre-experimental period (1895 - 1920),

- the primitive experimental period (1920 - 1940),

Glass and Smith (1978) reviewed some 725 studies which suggest that there is

> "a strong relationship between class size and achievement... There is little doubt that, other things (being equal), more is learned in smaller classes" (pp. 45-46)

Their 1979 follow-up study, which sought to give greater consideration to qualitative studies, reviewed a further 60 studies and concluded that

> " ... one may still be confident that class size is related to pupil and teacher affect and instructional processes."
> (p. 45)

Research projects which challenged these findings followed. Vanble, M.E. and Gilman, D.A. (1988) concluded that in their study there was no clear relationship between decreased class size and increased achievement. There was a degree of modification in this position as a result of further studies by McGivern, J. et al. (1989) in the same project where the conclusion that reduced class size with younger children appeared to increase achievement levels.

Finn, I.D. and Achilles, C.M. (1990) confirm this advantage for Grade 1 pupils in small classes and this conclusion is further supported in the work of Word, E. et al. (1990) which analyses the findings of the same Tennessee project.

In Great Britain, the work of Blatchford, P. and Mortimore, P. (1994) which reviews literature on this topic in that country concluded that there were "conflicting, inconclusive and disappointingly meagre" findings. (p.411)

The report of Her Majesty's Chief Inspector of Schools (1995) declared that there is no simple lnk between class size and achievement. In the primary schools included in the study there were small benefits for both classes with fewer than 10 pupils and, somewhat unexpectedly, those with more that 36 pupils; whilst in secondary schools there were significant improvements in classes with more than 36 pupils. It is important to note that none of these gains are statistically significant.

Two studies from Japan are reported by Sedibe but as they are both descriptive in nature, they add little to the debate.

In Australia, attempts were made to relate the findings of Glass et al to the local scene in Canberra by Larkin, A.I. and Keeves, J.P. (1984). They concluded that the personal attributes of individual children contribute significantly to their ability (or lack of ability) to benefit from large class situations and it is this, together with the ability of the teacher to employ appropriate teaching methods, rather than the size of the class which influences achievement.

In Canada, the study by Shapson, S.M. et al. (1980) found that there were no significant effects of class size on the indicators of quality scores used. They concluded that whilst class size makes a large difference to teachers, it makes little difference to pupils or to teaching methods employed by teachers.

These conclusion have important implications for the present study and much of the debate about class size is relegated to its appropriate place by such statements. It is contended that it is not a simple matter of the size of a class which is significant but one of what actually happens during teaching and learning sessions in that classroom in order to facilitate learning. The present study has its foundation in this position and seeks to explore the influence of teaching and learning materials and of teaching styles and methods in large class situations upon achievement.

In the developing nations, the work of Kumar, K. (1992), although small in its scope, is of value because it confirms the position outlined above when it concludes that the role and attitude of the teacher is fundamental to the pattern of pupil participation in the lessons and, therefore, by implication, to achievement.

The survey by Hanusheck, E.A. (1995) of 96 studies of school effectiveness highlighted the role of the teacher and of facilities supplied by the school in

determining pupil achievement. No significant correlation between class size and achievement was found.

Thirion, G.J. (1987) in an unpublished thesis found that in the six schools in South Africa under study the attitude and abilities of the teacher were more influential than class size per se.

Peachy, L. (1989) highlighted the importance of teaching and learning materials in effective large class teaching of English in South African primary schools.

Maged, S. (1997) concluded from a small study of three teachers in the Western Cape region that there did not appear to be a causal link between class size and the quality of teaching.

The literature survey by Sedibe reviewed in this chapter concludes with the following remarks

• There is no simple or clear-cut relationship between class size and pupil achievement but that this is influenced by numerous variables;

• Attitudes towards class size are influenced by individual teacher's experiences;

• Effective teaching is more crucial than class size; and

• Large classes are here to stay in South Africa in the foreseeable future.

In essence, the findings in this area of research remain inconclusive and demonstrate that there is no clear or simple relationship between class size and effective learning. This is not surprising as it is obvious to even the most casual of observers that there are many other variables at work in the classroom. Not least amongst these are the teacher's attitude, skills and motivation; the teaching and learning strategies employed (including the availability and the use of support materials); and pupil attitudes, skills and motivation.

Furthermore, it seems that much use has been made of traditional experimental-versus-control-group studies in this area of research. Such approaches are notoriously weak in themselves, as in order to ensure their validity all extraneous variables must be matched, controlled or randomised. This is difficult, if not impossible, to achieve in practice and there appears to be an over-readiness in many studies to assume that those variables which can not be controlled or matched are automatically random in their influence.

There has also been a tendency to employ correlation tests in these studies to establish causal relationships between class size and learning gains - something which correlation studies by their very nature are unable to do. Whilst clear correlation's might be shown to exist, one is not free to assume that the two factors which correlate are causally linked, or, even more importantly, that the direction of cause is in a single direction. In reality both factors might be related to a third vital but undetected or undeclared factor which would significantly affect the nature of the findings reached.

Despite these inherent weaknesses, research to date in this area does succeed in suggesting that class size does appear to affect teacher performance and that if effective learning is to occur in large classes, attention must be paid to the role of the teacher. This attention might well be best directed towards aspects of motivation, skills development, energy levels and the use of teaching-learning aids.

The present study arises from these, conclusions and seeks to describe how the employment of teaching-learning aids enables the teacher to teach more effectively and, consequently, the learners learn more effectively. The emphasis is upon an analysis of the manner in which these benefits are obtained rather than upon a measurement of their size. Its prime focus is thus upon structured, thorough and meaningful description of how the introduction of teaching-learning materials can benefit the quality and the degree of learning occurring in otherwise impoverished classroom environments.

1.2   Classroom Verbal Interaction

Numerous studies have attempted (over a period of decades) to classify the nature of verbal interaction which occurs within the classroom and to relate this to effective learning. Some studies have attempted to relate the incorporation of training in verbal interaction analysis systems given during teacher training with the degree of 'indirectness' displayed by these students when operating in the classroom. Such 'indirectness' is evident in a diminished domination of the verbal interaction in the classroom by the teacher and a corresponding increase in the amount of pupil talk. The dimension of direct-indirect teaching was used to support the belief in a continuum stretching from the very formal, teach-directed, expository, lecture-type teaching to the less formal, deliberative, exploratory, interactive-type teaching. It is assumed that such indirectness is in itself a 'good thing'.

The findings are, again, somewhat mixed as Finske (1967), Emmer (1967), Kirk (1967), Lohman et al. (1967), Moskowitz (1967), Simon (1967), Carline (1970) and Traill (1971) report that the experimental group displayed greater indirectness than the control group in their studies, whilst Hill (1967) found that any gains of the experimental group over the control group were only of a short duration and Tuckman et al. (1969) found there to be no difference between the two groups.

Other researchers sought to be more specific and to relate the degree of 'indirectness' to actual gains in pupil learning. Fifteen field studies reviewed by Dunkin and Biddle (1974) showed no clear relationship between the degree of 'indirectness' and pupil achievement, but thirteen other studies found that there was such a relationship. Flanders (1970) also found that the amount of teacher talk was unrelated to pupil achievement but Tisher (1970) found that teachers who make a moderate use of higher cognitive demands through the type of questions they pose to their pupils brought about significantly higher degrees of growth of understanding amongst those pupils.

All this work, despite the contradictory conclusions, did serve to advance understanding of interaction in the classroom and enabled researchers to develop meaningful observation instruments such as the Flanders' Interaction Categories System, the Verbal Interaction Category System and the Stanford Teacher Competency Appraisal Guide.

The present study is focused on language development in Grade 5 classrooms and thus places great emphasis upon verbal interaction analysis. The project is designed to incorporate classroom observation which allows the degree and type of verbal interaction occurring in these classrooms to be both quantified and analysed.

1.3   Teaching Styles

A further development in the attempt to identify successful teaching practices has been the move to identify common teaching styles and to relate these to effective teaching and learning. One of the most significant studies in this field was that of Neville Bennett in 1976 when he examined the teaching styles of some thirty-seven teachers in the Lancaster district and produced a typology of twelve 'teacher types' which he subsequently condensed into three teaching styles - 'formal', 'mixed' and 'informal'. His major findings were

> "The effect of teaching style is statistically significant and educationally significant in all attainment areas tested. In reading pupils of formal and mixed teachers progress more than those of informal teachers, the difference being equivalent to some three to five months' difference in performance. ... In English formal pupils again out-perform both mixed and informal pupils, the discrepancy in progress between formal and informal being approximately three to five months." (p.152)

Reaction to these findings was immediate and wide-spread. Initially many heralded them as vindication for a campaign of opposition against 'progressive' teaching practices but others soon cast doubts over the validity of the findings. Gray and Satterly (1976) wrote

"Although we are constantly assured that the findings provide 'clear evidence', and are 'unequivocal', 'highly significant' and both 'statistically and educationally significant', there is no description at any stage of what is meant, for example, by 'statistically significant', or any other of these terms and the reader has to resort to a ruler to estimate the average gains associated with each teaching style ." (p.48)

Subsequently, Aitkin (1981) has reworked the data collected by Bennett and concluded that "it is clear that the variation among styles is quite small compared with that among teachers within styles." (p.180) He found there to be no statistically significant differences between the achievements of the pupils' subjected to the various teaching styles.

The ORACLE (Observational Research and Classroom Learning Evaluation) study (1975-80) also sought to establish a typology of teaching and learning styles. The research design was, however, considerably more thorough than that of Bennett employing two thoroughly tested observation instruments or 'Records'. It is on these two instruments that those developed for the present study are founded. Following the application of a cluster analysis statistical technique, some four separate teaching styles were identified as well as four separate learning styles. The researchers found that no single style could be considered the most effective for pupil performance in all three aspects of pupil learning which were tested (i.e. mathematical skills, general language skills, and reading skills). What did emerge quite clearly, however, was the finding that it was teaching styles which dominated the relationship and they influenced the learning style the pupils adopted and the learning gains they made.

A subsequent study by the present author amongst South African children resulted in similar findings but showed a clear relationship between teaching style, age of pupil, subject being taught and learning gains rather than a more direct relationship between teaching style and learning gains.

Of greater significance than the establishment of any relationship between teaching style and learning gains, however, was the development of reliable and valid observation instruments which were able to accurately record the nature and duration of a variety of classroom interactions which could be equated with effective teaching (Dachs 1986).

1.4   The Use of Learning Materials

The present study does not incorporate a close analysis of the teaching and learning materials employed in the classroom. Its focus is rather on the way in which those materials are used. Consequently, of particular importance to this study is the recent evaluation of the Northern Cape Primary School Workbook Project conducted by Penny Vinjevold in December 1996. This evaluation of the effectiveness of "high quality, low cost educational materials" in seeking to transform teaching styles found statistical significant gains in a pre- and post-test situation employing experimental and control groups of pupils. Pupils in disadvantaged schools showed greater learning gains than others and the degree of usage of the materials also contributed to the levels of gain.

The report concludes
> "The introduction of The *Learning Adventure* appears to have
> - impacted on pupil learning activities and habits such as working on their own, working with peers and increased educational activities at home;
> ? had a positive effect on pupil learning;
> ? assisted teachers in that they provided teachers with accessible supplementary material, influenced their teaching practices, helped motivate pupils and engage their interest in educational material and assisted teachers with planning and preparation". (p.12)

1.5   The Present Study

The present study, therefore, occurs at a particular point in the development of classroom interaction research. It seeks to describe the kinds of interaction which are observed in lessons where teaching and learning aids are introduced into

disadvantaged classrooms and to describe these in an attempt to develop an understanding of the most desirable types of teacher-learner classroom interactions which will accelerate learning gains. It draws upon previous research by employing the categories of interaction which have been identified over the years as being significant and by gathering data through the use of observation instruments on both the nature and the quantity of interactions taking place between teacher and learner, and between learner and learner, whilst employing the learning materials supplied.

Such descriptions will serve not only to identify desirable forms of interaction but also to indicate the possibility of employing these even in large classes where teachers might otherwise have considered them impractical.

CHAPTER 2

THE PRESENT STUDY

This study was undertaken as a pilot study in order to establish the validity of various assumptions regarding large class teaching and to field test research instruments which had been developed for classroom observation and for the determination of attitudes amongst school principals and teachers on the ground.

2.1   Research Questions

This study set out to throw light upon the following important questions

- ?   How do teachers in large classes interact with their pupils?
- ?   How effective is their teaching?
- ?   What use is made of teaching and learning materials?
- ?   In what way does the use of such material contribute to effective learning?
- ?   What do teachers, principals and materials designers feel about large class teaching and the benefits of the materials available to them?

The study is premised on the belief that the introduction of teaching and learning aids into otherwise largely impoverished classrooms will assist the teacher in the task. of advancing pupil learning, in developing interactive teaching and learning styles, and in easing the tasks of classroom management and motivation.

From the outset there was a clear' understanding that no hard data would be uncovered which would "prove" the validity of these premises but that the observed actions of teachers and pupils, as well as the considered opinions of teachers, principals and materials developers would assist in the development of a clearer picture of their validity or otherwise.

In one respect, this methodology (being as it was focused on descriptive analyses) could be viewed as a limitation of the study. It is, however, our strong conviction that such detailed observation and description of the classroom scene adds to the understanding of the context in which improvements in the delivery of education can be made. Such studies attempt to portray the real day-to-day world of the classroom and thus to better inform policy-makers and curriculum developers.

This study was also consciously limited in it scope. The sample - though carefully selected to encompass a range of situations - was limited and was designed to be in the nature of a pilot study. In the event, even the limited number of classrooms selected for observation presented problems of access. Various complicating factors intervened to cause schedules to be readjusted and to delay the process of data-gathering. (These are described in greater detail by the main field-researcher elsewhere in this report.)

2.2   The Sample

Various practical considerations influenced the selection of the sample schools and the classrooms to be observed. At an early stage it was decided that the study should be confined to the kwaZulu-Natal province and to an examination of the effects of materials supplied by only two non-governmental organisations both operating in the area of developing language (and particularly reading) skills in the primary school.

Grade 5 was selected as the area of focus because it was considered by the designers of the materials to be crucial in the development of sound language and reading abilities and because it would provide a good indicator of the degree of success of the two programmes.

2.2.1   The Schools

Initially it had been hoped to involve eight schools in the project but practical difficulties caused the reduction of these to six. A conscious attempt was made to ensure that the range of schools used would include rural, peri-urban and urban ones; large, medium and small ones; and ones which had had lengthy involvement in the programmes and those with limited involvement.

The following schools were included in the study

School A is situated in the Ngcolosi Valley. The environment is rural and the learners receive limited exposure to English outside the classroom. The school has very basic amenities and suffered a set-back last year when the Principal's office burnt down. The school has 105 Grade 5 pupils and the class included in the project is one of 53 pupils.

School B has 90 Grade 5 pupils all in the one class. The school is small and is located in a remote area amongst a poor community where there is 75% unemployment.

School C is a large urban school where there are 155 Grade 5 pupils. Sixty of these were in the class included in this study. The pupils have a wider exposure to English than their rural counterparts and are confident in the usage of a wider vocabulary. The pupils recently competed in a Readathon and acquitted themselves well.

School D is a very large peri-urban school with well-constructed classrooms. The pupils are drawn from families with a wide cross-section of economic status. There are some 230 Grade 5 pupils taught by two teachers. The class included in this study had some 50 pupils.

School E is a higher-primary school in Umlazi. Unfortunately as the principal is often away from the school, the management seems to be in some degree of disarray. Library books were placed in all English classes but as a result of vandalism and theft, these no longer exist. The teacher included in this study has participated in the Festival of Books Drama Competition every year. READ has been working with this school for the past two years. The school lacks plumbing and sanitary facilities and consequently has to close at 12 noon each day.

School F is also a higher-primary school in Umlazi with classes from Grades 5 to 7. The principal has recently been awarded a certificate from READ for his competency. Read has also been working in this school for two years. The kitchen has been converted into a library and some of the pupils have been trained as library monitors. The school has a reputation for its caring and supportive character.

2.2.2 The Teachers

Of the eight teachers involved in the study, two are males, three are between 30 and 34 years of age, three are between 35 and 40 years, one between 40 and 44 and one between 45 and 50 years. Three of the teachers have each had over 10 years of teaching experience, three between 6 and 10 years and two between two and five years of experience. The 'average' teacher in the sample is 35 years of age and has 6,5 years of teaching experience.

The intention was to conduct an in-depth interview with each of the teachers to establish their opinions on the materials supplied, the training received and the support functions performed by the non-governmental organisation, and to conduct observations of three lessons of each of the teachers, In the event this was possible with all the teachers except one who was able to provide an opportunity to observe only one lesson.

2.3   Data on Learning Gains

As it had been decided to limit the disruption of the normal classroom activities as much as possible, no special tests of ability were to be employed. Two sources for information on the learning gains of the pupils in the study were used instead. The first was that of already published studies on the effectiveness of the materials (which did not of necessity involve the individual classes in this study) and the second was the utilisation of normal testing procedures conducted by the teachers during the course of the year.

2.4   The Field Work

Three field workers were utilised in the gathering of data but all the observation work was conducted by a single researcher in an attempt to secure consistency. Visits to the schools were made from August until October and interviews were conducted with all the teachers and all bar one of the principals. A report on the difficulties in conducting the field work was compiled by the chief field researcher and is included in this report on page 21.

2.5   Data Analysis

Data from the observation schedules was loaded into Excel spreadsheets and the distribution of the various activities calculated. This data was represented in the form of bar-graphs and is included in this report in Chapter 4.

Numerical values were attached to the response to the opinionnaires for those items which were formulated on a Likert scale and the strength of these responses through the sample was calculated. This data was also represented in the form of bar graphs and is also included in Chapter 5. The other responses which were provided in the form of continuous prose were summarised and generalities and trends extracted.

Learning gains were established from previous reports (as indicated earlier) and calculated from raw scores provided by the teachers to the non-governmental organisations. These are reported in Chapter 6. No attempt was made to employ any further statistical tools such as T tests or cluster analysis techniques because the sample size did not warrant these. In a larger-scale study it is recommended that such statistical tools be employed.

CHAPTER 3 RESEARCH INSTRUMENTS

Structured interviews, observation schedules and indicators of learning gains were used in this study. The prime purpose was, as indicated earlier, to accumulate data on the interaction occurring between educator and learner and between learner and learner in order to establish if and how the teaching and learning material employed affected such interaction and, ultimately, affected learning gains.

3.1   The Interviews

Two similar but separate interview schedules were prepared after consultation with the providers of the READ and SMILE programmes. The first was designed to record the attitude of the school principals to the programmes and the second to record those of the class teachers. Each sought to gather information of a biographical nature; on perceived difficulties in handling large classes; on the quality of the programme materials supplied; on the training supplied by the programme; on the support systems in place within the programme; and on the perceived benefit accruing from the programmes.

The interviews were conducted by the field researchers and the responses of the interviewees were recorded either on a Likert-type scale of responses or in an open-ended verbatim style. These responses were analysed in two ways. The Likert responses were translated onto a numerical scale and mean scores determined; whilst the open-ended responses were analysed for similarity of word strings and phrases in order to establish trends of similarities and differences.

The structure of the interviews was based on previous evaluation work conducted by the author in national academic audits of colleges of education and universities and technikons but has no other evidence of validity.

An example of each of the interview schedules used is provided in Appendix A.

3.2　The Observations

Two observation schedules were employed in this study - one which focuses on the teacher and the other on the pupils - both individually and collectively. These schedules enjoy a long history of development.

They have their origins in the ORACLE (Observational Research and Classroom Learning Evaluation) of M. Galton, B. Simon, P. Croll, J. Willocks and others in the late 1970s and early 1980s in England.

The two instruments (known as the Teacher Record and the Pupil Record) are fundamentally time-lapse studies in which pre-identified teacher and pupil behaviours are described and the numbers of occurrence of each behaviour is recorded during each observation period. Data gathered from these observations was subjected by the ORACLE team to a statistical procedure known as a "probabilistic latent class cluster analysis" and profiles of teacher and pupil types were produced.

These instruments were used by the present author in a Ph.D. study in classrooms in South Africa and similar profiles of teacher and pupil-types were developed (Dachs 1986). Further work in a similar vein but in the tertiary sector has been conducted by N. Entwistle and P. Ramsden (1982) in England and by the present author (Dachs 1989) in South Africa.

The observations instruments employed in this study were developed specifically for the study but find their justification in the history described above.

The teacher observation schedule requires the observer to record at one minute intervals the presence of specified behaviours. These are grouped into three broad categories and a number of sub-categories

- The teacher is talking
    - explaining
        - to the whole class
        - to a group of learners
        - to an individual learner
    - asking or answering questions
        - with the whole class
        - with a group of learners
        - with an individual learner
    - reading
        - to the whole class
        - to a group of learners
        - to an individual learner
- The teacher is silent
    - listening
        - to the whole class
        - to a group of learners
        - to an individual learner
    - observing
        - the whole class
        - a group of learners
        - an individual learner
- The teacher is involved in some other form of activity.

A record is also made of whether the SMILE/READ materials were employed during each activity or not. (See Appendix B.)

In a similar way, the pupil observation schedule requires the observer to record the general activity of the pupils in the class and those of individual pupils. Again, three broad categories and a number of different sub-categories are used

- The learner is talking
    - discussing
        - with the teacher
        - with a group of learners
        - as a whole class
    - asking or answering questions
        - of the teacher
        - of another learner
    - reading aloud
        - to the whole class
        - within a group of learners
        - to the teacher
- The leaner is silent
    - listening
        - to the teacher
        - to another learner
    - writing, drawing, cutting or pasting
        - individual work
        - within a group situation
    - reading silently
- The learner is involved in some other form of activity.

Again, a record is also made of whether the SMILE/READ materials were employed during each activity or not. (See Appendix B.)

3.2.1   The Use of the Observation Schedules

The schedules are used in the classroom during a lesson. The observer indicates the type of activity in operation at 60 second intervals for each of the teacher activity and the learner activity. A "typical" learner is selected by the observer to act as a representative of the dominant behaviour in the classroom at that particular instant. At the same time the observer indicates whether or not the teaching-learning materials are in use during each activity.

It should be noted that a degree of judgement is required of the observer and that the process is by no means mechanical. A section is provided on the schedule for

the observer to provide notes explaining any unusual activities or to explain the choice of category in certain instances.

CHAPTER 4 OBSERVATION DATA

Some twenty-two lessons were observed and the observation schedules for both teacher and pupil completed for each. Raw data was captured on Excel spread sheets and the cumulative and mean scores for each of the categories calculated. Percentage distributions were also calculated. The occasions during which the teaching and learning materials were employed were calculated in a similar fashion, and comparisons between the total number and percentage of observations made and those in which the materials were employed were completed.

4.1   Difficulties Experienced

It is the nature of classroom-based research that difficulties in accumulating data will occur. These difficulties arise from a variety of causes, but it can be said that present conditions of uncertainty and dissatisfaction in the teaching profession in South Africa heighten these.   The following is a report provided by the chief field researcher on some of the difficulties she encountered in conducting the research.

> "Both SMILE and READ had initially selected eight schools and eight teachers. The four SMILE schools were scattered over a wide area, from Durban (Chestville) to rural countryside (Cato Ridge), while the READ schools were all in rural areas. Considering the fact that the programme got off to a late start, having been delayed by a number of problems related to right-sizing, strikes, retrenchments etc., which resulted in several months of go-slow action in schools, it was decided to ask the project co-ordinator of READ to reduce the number of schools to two, both in Umlazi. This was perhaps a good move, as it provided a more balanced view of teaching than the more deliberate earlier selection.
>
> On the first visits to these schools I relied on SMILE and READ staff to accompany me, as all the schools are in areas where it is only safe to move about if one is known in the area, or knows exactly where to go. Two examples highlight this

1. One day, paying a second visit to a school in Mpumalanga-Hammarsdale, I encountered a police road-block and detour signs; as a result I had to ask for new directions to find my way to the school. At one point I had to turn around, having lost my way, and right behind me was a policeman (in a van), who had followed me to point me in the right direction.

2. A visit to a school in a difficult area of Umlazi was changed. Initially I was to have followed the READ facilitator, then after the observations find my own way back.   However, the week before in Umlazi, the facilitator had been stopped by a policeman, who had told her that under no circumstances should a white woman be seen driving on her own in Umlazi. While neither of us necessarily agrees with this alarmist view we felt we should not ignore it.

It was therefore not so much a matter of when I could go as of when I could follow or accompany a staff member to one of the schools. Each school has its own particular support person/teacher (SMILE or READ) but because that particular teacher visits schools in many other areas she is often not available because she is out of town. These constraints affected the initial visits. Once I had been shown the schools I was able to visit on my own, as long as I had made sure that the teacher, the principal and the materials were all ready for my visit. Even though most schools have telephones these do not always work, nor do many staff members have telephones at home, particularly those in remote areas. One interview with a principal did not take place because she has no telephone at school or at home, and the telephone, which belongs to the only teacher at the school who possesses one, was faulty.

With regard to the availability of the materials I also encountered problems at one of the SMILE schools which no longer receives direct support (which as a rule is withdrawn after two years), but uses the materials. The teacher then depends on the principal to collect the learners' workbooks from the SMILE office, but for a full month, which included the October holidays, this did not happen. Eventually one of the SMILE staff members delivered the workbooks, or the observations would not have taken place.

Contact was also difficult when an entire school (principal, teachers and pupils) was on the sports field, from mid-day.

At yet another school I had arranged to see a SMILE teacher on a particular day, however, when I arrived she told me she had expected me two days before. She had never contacted me to check the reasons for the miscommunication, and on this particular day it transpired that the school would close at 11h00 for two reasons : all the pupils were being sent home because the majority had not paid their school fees, and the sister of one of the teachers had recently died and the entire staff would be attending her funeral. Another date then had to be set.

One READ teacher I only managed to observe once. When I want to the school the first time, accompanying the READ staff member, who had made the arrangements, teacher X was sick and not present. The second visit happened to be on the day when the staff and learners were to be counted by the Department of Education. Although I had hoped to observe more than one lesson teacher X and most of the other teachers at the school used the expected departmental visit as an excuse for not teaching after 9h30. I sat in the staff room and waited for a chance to do the interviews, and at any time there were six to eight teachers in the room, where they were filling in forms, chatting etc. When I walked along the corridor the classrooms were full of learners but few teachers were in sight.

To end on a more positive note it must be said that once dates and times had been set most observations took place as arranged, and the teachers and principals were very co-operative, on the whole, with regard to both lessons and interviews."

4.2   Observations Made

4.2.1   Teaching Style

Table 1 (Teacher Record - Teacher Talk) and Table 2 (Teacher Record - Teacher Listening/Observing) on the following pages provide data on the behaviour of the teacher during the lessons observed. Figure 1 on page 27 provides a graphic representation of the mean scores for each category and a comparison with those occasions when the materials were employed.

It is clear that the classrooms observed are dominated by teacher talk. An average of 81,82% of the observations made of the teacher indicated that he/she was talking. Whilst this is typical in many classrooms on most days throughout the country, some interesting aspects were identified in the classrooms included in this study. Some 9,7% of the time was spent in interacting with groups of learners (4,64% explaining things to them and 4,06% asking them questions). A further 10,25% of the time was spent interacting with individual learners (1,64% explaining something and 8,61% in questioning). Both these trends are encouraging but are more especially so when one remembers that these teachers are dealing with large classes (including one of 90 learners). An examination of Figure 1 leads one to conclude that this group and

individual interaction is, as is all the teaching in these classrooms, facilitated by the materials made available to the teacher.

In a similar way the 7,35% of time the teacher spent listening to or observing groups of learners and the 5,32% doing the same with a particular individual in the class is encouraging. Once again, reference to Figure 1 indicates that good use of the teaching and learning materials was made to facilitate this process.

In general, excellent use (and possibly even overuse) was made of the materials provided in the lessons observed. We, therefore, feel confident in our postulation that it is the existence and the employment of these materials which enables teachers to engage in this degree of variety of interaction whilst maintaining control over the classroom environment. This we consider to be significant, as we believe that assistance can effectively be provided to teachers of large classes through the provision of teaching and learning materials. These provide focus for the lesson and assist in classroom management through control over learning activities. Well constructed materials provide opportunities for useful forms of interaction to occur and the concomitant learning gains to be secured.

Table 1 : Teacher Record - Teacher Talk

Teacher		E1	E2	E3	A1	A2	A3	R1	R2	R3	Tot T	%T
CT1	R	11	2	0	23	0	9	11	0	0	56	90.32
CT2	R	14	0	0	14	0	0	6	0	0	34	94.44
CT3	R	9	0	0	8	0	1	9	0	0	27	72.97
JB1	S	12	11	5	7	0	3	5	0	0	43	71.67
JB2	S	8	8	0	6	0	0	0	0	0	22	84.62
JB3	S	11	0	0	11	0	4	0	0	0	26	83.87
MG1	R	9	0	0	15	1	4	7	0	0	36	100.00
MG2	R	3	3	0	17	0	7	9	0	0	39	86.67
MG3	R	20	1	3	7	0	2	7	0	0	40	80.00
SB1	R	12	0	0	17	3	2	11	0	0	45	90.00
SB2	R	16	0	0	17	0	2	11	0	0	46	85.19
SB3	R	19	0	0	16	3	1	7	0	0	46	88.46
NM1	S	16	1	1	18	0	7	9	0	0	52	83.87
NM2	S	8	0	1	15	1	8	8	0	0	41	75.93
NM3	S	13	3	0	12	1	10	2	0	0	41	80.39
TN1	S	6	1	3	19	7	11	0	0	0	47	78.33
TN2	S	8	8	2	2	5	4	0	0	0	29	80.56
TN3	S	5	3	2	23	8	8	0	0	0	49	83.05
SN1	S	15	5	0	11	13	2	0	0	0	46	85.19
SN2	S	10	0	0	6	0	3	0	0	0	19	59.38
SN3	S	8	2	0	11	0	1	0	0	0	22	73.33
JN1	R	16	0	0	12	0	0	12	0	0	40	70.18
TOTAL		**249**	**48**	**17**	**287**	**42**	**89**	**114**	**0**	**0**	**846**	81.82
%		24.08	4.64	1.64	27.76	4.06	8.61	11.03	0.00	0.00	81.82	
Average		11.32	2.18	0.77	13.05	1.91	4.05	5.18	0.00	0.00		

Legend

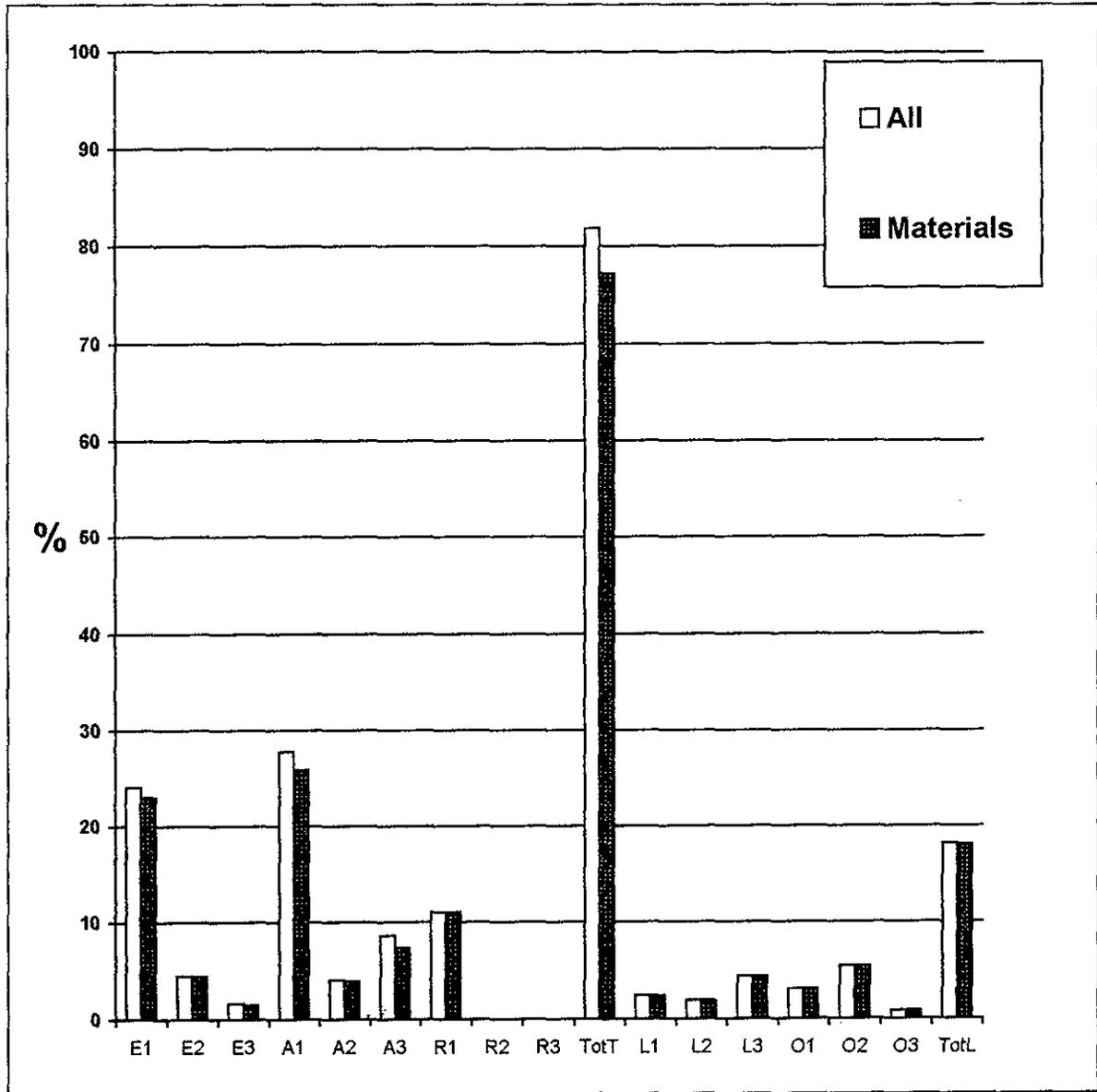| E1	Explaining to the whole class	R1	Reading to the whole class
E2	Explaining to a group	R2	Reading to a group of learners
E3	Explaining to an individual	R3	Reading to an individual
A1	Questioning to the whole class	Tot T	Total talking
A2	Questioning to a group	%T	Total percentage talking
A3	Questioning an individual		

Table 2 : Teacher Record - Teacher Listening/Observing

Teacher	L1	L2	L3	O1	O2	O3	Tot L	Other	Tot Ov	%L
CT1	0	0	4	0	2	0	6	0	62	9.68
CT2	2	0	0	0	0	0	2	0	36	5.56
CT3	0	0	5	5	0	0	10	0	37	27.03
JB1	0	2	5	4	6	0	17	0	60	28.33
JB2	0	0	0	0	4	0	4	5	26	15.38
JB3	0	0	0	0	1	4	5	4	31	16.13
MG1	0	0	0	0	0	0	0	0	36	0.00
MG2	0	0	3	0	3	0	6	0	45	13.33
MG3	0	0	6	3	1	0	10	2	50	20.00
SB1	3	0	0	2	0	0	5	0	50	10.00
SB2	0	2	4	0	2	0	8	0	54	14.81
SB3	2	0	2	2	0	0	6	2	52	11.54
NM1	1	5	0	3	1	0	10	0	62	16.13
NM2	4	4	0	0	5	0	13	0	54	24.07
NM3	0	2	4	0	4	0	10	0	51	19.61
TN1	1	2	3	2	5	0	13	8	60	21.67
TN2	0	2	1	0	4	0	7	0	36	19.44
TN3	1	1	1	1	5	1	10	7	59	16.95
SN1	0	0	0	2	6	0	8	13	54	14.81
SN2	0	0	0	5	5	3	13	1	32	40.63
SN3	1	0	1	3	2	1	8	0	30	26.67
JN1	10	0	7	0	0	0	17	9	57	29.82
TOTAL	25	20	46	32	56	9	188	51	1034	18.18
%	2.42	1.93	4.45	3.09	5.42	0.87	18.18	4.93		
Average	1.14	0.91	2.09	1.45	2.55	0.41		2.32		

Legend

L1	Listening to the whole class	Tot L	Total listening/Observing
L2	Listening to a group	Oth	Other
L3	Listening to an individual	Tot Ov	Overall Total
O1	Observing the whole class	%T	Percentage talking
O2	Observing a group	%L	Percentage listening
O3	Observing an individual		

Figure 1 : Teacher Record

Legend

E1	Explaining to the whole class	L1	Listening to the teacher
E2	Explaining to a group	L2	Listening to a group
E3	Explaining to an individual	L3	Listening to an individual
A1	Questioning to the whole class	O1	Observing the whole class
A2	Questioning to a group	O2	Observing a group
A3	Questioning an individual	O3	Observing an individual
R1	Reading to the whole class	Tot T	Total talking
R2	Reading to a group	Tot L	Total listening/observing
R3	Reading to an individual		

4.2.2   Learning Style

An examination of the observation data regarding the behaviour of the learners during the lessons observed (see Tables 3 and 4 which follow) reveals that the verbal interaction that most pupils enjoy is in the form of whole class responses to questions posed by the teacher. This is not surprising when the size of each class is taken into consideration.

What is encouraging is that, despite the above, of the 34,79% of the lesson time in which the individual pupil under observation was talking, 12,41 % was within a small group situation. This strategy enables a greater number of pupils to engage in verbal interaction during a lesson and to benefit from such exchanges with their peers. The benefits arising from this form of activity are further advanced when one considers the 12,03% of the lesson time in which the pupil under observation verbally interacted with the teacher (collectively or individually). This is also encouraging as it indicates that, when these two factors are aggregated, a substantial portion of the lesson is devoted to real verbal interaction. Improvements in language usage in such circumstances are almost inevitable.

Table 3 : Pupil Record - Pupil Talk

Teacher		D1	D2	D3	A1	A2	R1	R2	R3	Tot T	%T
CT1	R	1	2	0	6	0	0	0	15	24	39.34
CT2	R	0	0	0	5	0	3	0	0	8	22.86
CT3	R	0	5	0	2	0	2	0	0	9	23.68
JB1	S	0	10	0	1	3	0	5	0	19	32.76
JB2	S	0	9	0	5	2	0	0	0	16	51.61
JB3	S	0	0	0	3	0	0	0	0	3	9.38
MG1	R	0	0	0	5	1	0	0	0	6	17.14
MG2	R	0	3	0	10	0	0	0	0	13	34.21
MG3	R	0	0	0	3	0	0	1	1	5	10.00
SB1	R	0	6	0	3	0	12	0	0	21	47.73
SB2	R	0	8	0	3	0	4	0	0	15	34.09
SB3	R	0	10	0	5	0	7	0	0	22	48.89
NM1	S	0	1	0	17	0	8	3	1	30	50.00
NM2	S	0	4	0	11	2	8	3	0	28	48.28
NM3	S	0	15	0	3	13	0	0	0	31	42.47
TN1	S	0	4	0	5	0	7	0	0	16	24.24
TN2	S	0	7	0	2	3	0	0	0	12	26.67
TN3	S	0	5	2	5	0	5	0	1	18	29.03
SN1	S	0	12	0	4	0	2	2	9	29	42.03
SN2	S	0	7	0	0	3	0	0	0	10	25.64
SN3	S	0	3	0	2	2	2	0	0	9	28.13
JN1	R	0	8	0	1	0	20	0	0	29	50.88
TOTAL		1	119	2	101	29	80	14	27	373	34.79
%		0.09	11.10	0.19	9.42	2.71	7.46	1.31	2.52	34.79	
Average		0.05	5.41	0.09	4.59	1.32	3.64	0.64	1.23		

Legend

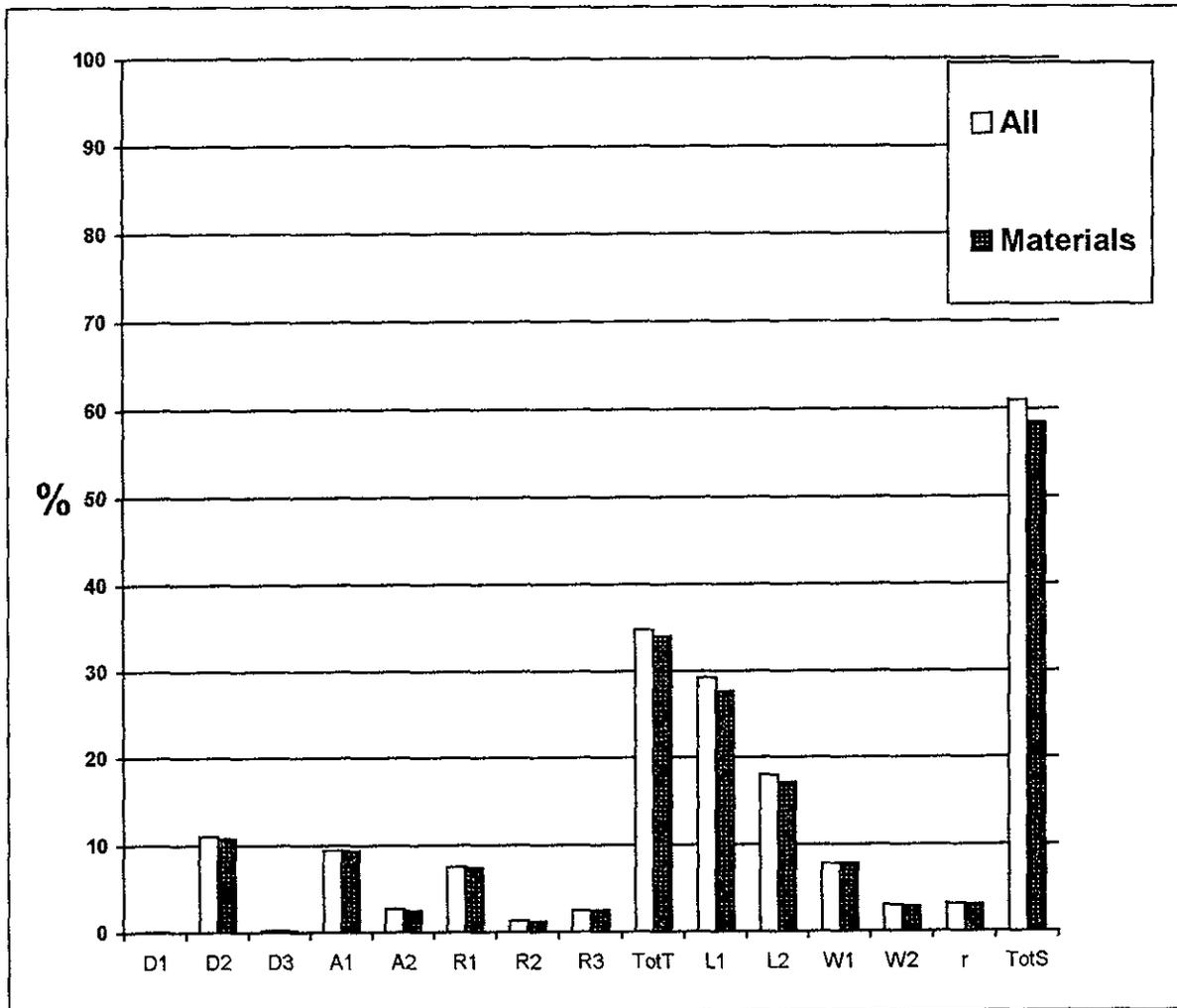|			
D1	Discussing with the teacher	R1	Reading aloud to the whole class
D2	Discussing within a group	R2	Reading aloud within a group
D3	Discussing as a whole class	R3	Reading aloud to the teacher
A1	Asking/answering questions of the teacher	Tot T	Total talking
A2	Asking/answering questions of another learner	%T	Percentage talking

Table 4 : Pupil Record - Pupil Silent

Teacher	L1	L2	W1	W2	r	Tot S	Other	Tot Ov	%S
CT1	18	16	0	1	0	35	2	61	57.38
CT2	17	7	0	0	0	24	3	35	68.57
CT3	17	12	0	0	0	29	0	38	76.32
JB1	27	12	0	0	0	39	0	58	67.24
JB2	6	2	0	4	0	12	3	31	38.71
JB3	12	4	5	0	0	21	8	32	65.63
MG1	20	9	0	0	0	29	0	35	82.86
MG2	14	9	0	2	0	25	0	38	65.79
MG3	16	19	8	0	0	43	2	50	86.00
SB1	19	4	0	0	0	23	0	44	52.27
SB2	13	13	0	3	0	29	0	44	65.91
SB3	18	5	0	0	0	23	0	45	51.11
NM1	14	5	7	0	4	30	0	60	50.00
NM2	9	1	10	0	10	30	0	58	51.72
NM3	10	14	0	8	10	42	0	73	57.53
TN1	15	10	7	1	7	40	10	66	60.61
TN2	10	8	13	0	0	31	2	45	68.89
TN3	13	12	9	0	0	34	10	62	54.84
SN1	14	11	2	7	3	37	3	69	53.62
SN2	11	4	10	2	0	27	2	39	69.23
SN3	8	3	8	4	0	23	0	32	71.88
JN1	12	12	4	0	0	28	0	57	49.12
TOTAL	313	192	83	32	34	654	45	1072	61.01
%	29.20	17.91	7.74	2.99	3.17	61.01	4.20		
Average	14.23	8.73	3.77	.1.45	1.55	29.73	2.05		

Legend

L1	Listening to the teacher	r	Reading silently
L2	Listening to another learner	Tot S	Total silent
W1	Writing etc. individually	Oth	Other
W2	Listening to another learner	Tot Ov	Overall total
		%S	Percentage silent

Figure 2 : Pupil Record

Legend

D1	Discussing with the teacher	Tot T	Total talking
D2	Discussing within a group	L1	Listening to the teacher
D3	Discussing as a whole class .	L2	Listening to another learner
A1	Asking/answering questions of the teacher	W1	Writing etc. individually
A2	Asking/answering questions of another learner	W2	Writing etc. in a group
R1	Reading aloud to the whole class	r	Reading silently
R2	Reading aloud within a group	Tot S	Total silent
R3	Reading aloud to the teacher		

CHAPTER 5 OPINIONNAIRE DATA

There were three types of questions posed in the opinionnaires. The first required the respondent to simply provide information; the second required an indication of the strength of a feeling by checking a box from a number of alternatives on a Likert scale; and the third required a continuous-prose response to explain feelings and opinions.

5.1   Responses to Information Items

The only item of interest here (the others relating to personal details) is that on the ideal size of classes. The principals, on average, considered the ideal class size to be 35 pupils and they ranged in their opinions from a class of 30 to one of 45.

The teachers, on average, were more accommodating and considered the ideal class size to be one of 41 or 42 pupils and they ranged in their opinions for a class size of 35 to one of 50.

Thus, although both teachers and principals listed considerable difficulties in handling large classes, they appear not to be substantially opposed to classes of the size proposed in current Education Department policy.

5.2   Responses to the Likert Scale Items

Figure 3 on the following page graphically illustrates these responses for both the group of principals and that of teachers. These are also summarised below
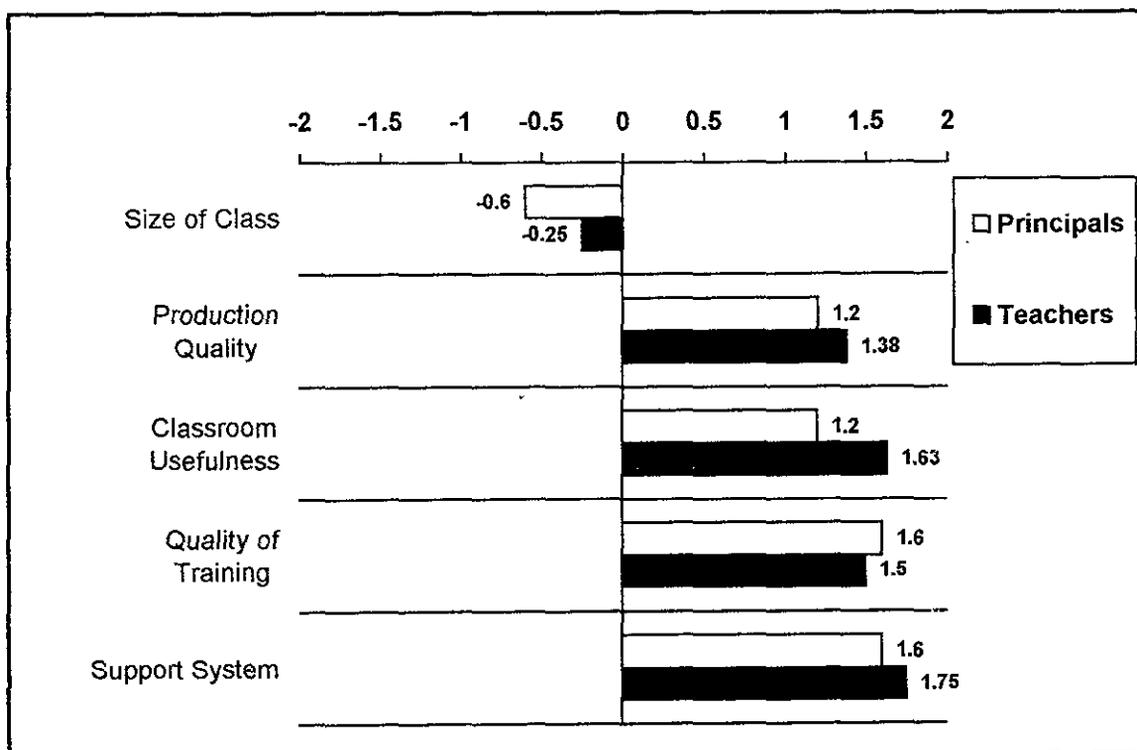
•   Neither group considered the size of the classes they had to be optimal - all considered them to be too large for effective teaching and learning.

- Both groups considered the production quality of the materials to be well above average (with the teachers feeling slightly more strongly about this).
- Both considered the materials to be very well suited for classroom use (again with the teachers feeling slightly more strongly about this).
- Both considered the quality of the training provided to be good (on this occasion with the principals feeling slightly more positively about this).
- Both groups considered the quality of the support systems in place to be good (with the teachers expressing slightly more positive feelings on this).

NOTES ON THE READING OF FIGURE 3

1. A numerical scale from +2 to -2 is employed in this figure. This scale has been devised to represent the responses given on four and five-point Likert scales in the questionnaires.
2. The individual bar graphs represent the mean (average) of the responses received from the principals and teachers surveyed.
3. The length of each bar indicates the strength of the response (either positive or negative).

Figure 3 : Opinionnaire - Full Sample

5.3   Responses to the 'Continuous-Prose' Items

The responses of the two groups (principals and teachers) are summarised below.

5.3.1   Principals' Responses

What would you consider the greatest difficulty (or challenge) of teaching large classes to be?

- There is no time for individual attention.
- The pupils' concentration tends to wander.
- The teacher can not know each child well enough.
- The teacher is likely to loose patience.
- The marking load is excessive.
- It is difficult to implement any remedial action.
- Physical space is limited and not conducive to effective learning.
- Classrooms become unhealthy places.

What do you particularly like about the materials produced by SMILE/READ?

- They are informative.
- They relate to other subjects in the curriculum.
- They make lessons interesting.
- The pupils like the illustrations.
- They make the teacher's work easier.
- They provide useful and practical themes.
- They enable lessons to become pupil-centred.
- They improve language skills which has cross-curricular benefits.

What (if anything) about the materials produced by SMILEIREAD would you suggest be changed?

- We would like more of the same.

What do you particularly like about the training provided by SMILE/READ?

- We would like more of it.
- It has brought about a fundamental change in the attitude of the teachers towards teaching and learning.
- Teachers have become more enthusiastic.
- It has benefited teachers in all the subjects they teach.
- Teachers have learnt how to effectively use learning materials.
- The teaching style has changed from a lecture-type one to a co-operative one.
- They reinforce the principles of O.B.E.

What (if anything) about the training provided by SMILE/READ would you suggest be changed?

- A little less material for each workshop.
- Give timeous notice of the workshops.

What do you particularly like about the support provided by SMILE/READ?

- It provides on-going support for the teachers.
- Good role models are provided.
- There is a nurturing style of support.
- The teachers' motivation improves.
- Their assistance extends beyond the classroom into the library and to activities such as the Readathon.

What (if anything) about the support system provided by SMILEIREAD would you suggest be changed?

- More visits.

What would you list as the main benefits to your teachers of the SMILE/READ project?

- An improvement in teaching styles.
- The pupils communicate much more effectively.
- The teachers have improved a number of their skills such as that of continuous assessment and group work.
- We have been provided with helpful materials.
- The teachers are now able to allow the pupils to work more on their own.
- The teachers' skills of critical evaluation are being developed.
- The culture of teaching and learning is being restored.

What would you list as the main benefits to your learners of the SMILEIREAD project?

- The pupils enjoy their lessons.
- They have improved their ability to communicate and to follow instructions.
- They have grown in confidence.
- The pupils become engaged in the lessons.
- They have become more involved in dramatisations and in the use of the library.

5.3.2   Teachers' Responses

What would you consider the greatest difficulty (or challenge) of teaching large classes to be?

- There is no time for individual attention.
- The pupils' concentration tends to wander.
- The teacher can not know each child well enough.
- There is a shortage of books and other materials. The marking load is excessive.
- Physical space is limited and not conducive to effective learning.

What do you particularly like about the materials produced by SMILE/READ?

- They provide for group work.
- They relate to other subjects in the curriculum.
- They are attractively presented.
- The pupils like the work books and in particular the illustrations.
- They help the teacher in his/her preparation.

What (if anything) about the materials produced by SMILE/READ would you suggest be changed?

- Blank pages should be inserted in the workbooks for corrections
- .Greater opportunities for revision work should be included.

What do you particularly like about the training provided by SMILE/READ?

- We would like more of it.
- Of particular use has been the training in continuous assessment and in the use of group work.

- Teachers have become more enthusiastic.
- It has benefited teachers in all the subjects they teach.
- Teachers have learnt how to effectively use learning materials.
- They reinforce the principles of O.B.E.
- They have increased the teacher's confidence.

What (if anything) about the training provided by SMILE/READ would you suggest be changed?

- More workshops.

What do you particularly like about the support provided by SMILEIREAD?
- It provides on-going support for the teachers.
- Good role models are provided.
- There are some good demonstration lessons provided.
- The observation of lessons assists bringing about improvements.

What (if anything) about the support system provided by SMILEIREAD would you suggest be changed?

- More visits.

What would you list as the main benefits to you as a teacher of the SMILE/READ project?

- An improvement in overall teaching styles.
- The pupils communicate much more effectively.
- New ideas have been introduced such as the use of newspapers in the classroom and in group work.
- We have been provided with helpful materials which clearly set out the work to be done.

- There is provision for instant feed-back for the pupils.

What would you list as the main benefits to your learners of the SMILEIREAD project?

- The pupils enjoy their lessons.
- They have improved their ability to communicate and to follow instructions.
- They have grown in confidence.
- The pupils become engaged in the lessons.
- They have learnt to work together.
- All their language skills have improved and this assists them in other subjects.
- They have learnt how to evaluate and to correct themselves.

In summary, therefore, it would seem that both principals and teachers find large classes diminish opportunities to get to know individual pupils well, to give personal attention to individuals, to cope with the marking and assessment load, to maintain motivation and discipline, to provide a comfortable physical environment for teaching and learning and to provide remedial attention where it is required.

Both sectors are well pleased with all aspects of the materials, training and support provided to them by SMILE and READ and ask for more of the same. They appear convinced that these programmes assist the pupils to develop their language skills - a benefit which is spread across the curriculum; to gain in confidence and in their ability to understand and comply with instructions; and to sustain and foster motivation. It appears that the mix of materials, training and support is a good one and that the sample of principals and teachers involved in this study have little to suggest by way of change for it.

CHAPTER 6 LEARNING GAINS

An important consideration influencing the design of this study was a commitment to avoid unnecessary disruptions of the normal school programme. Consequently, it was decided that no special tests of learning gains would be used but that data obtained from the normal course of events at each school and from previous evaluation studies would be utilised.

6.1 The READ Programme

A number of substantial evaluation studies of the effectiveness of the READ programmes have been completed in recent years. The "Sunshine in South Africa" project was evaluated by Hey, le Roux and Schollar in 1997 and the conclusions of that evaluation are quoted at length below.

> "The purpose of the 'Sunshine in South Africa' Programme was to create a positive impact on the English reading and language skills of primary children in disadvantaged schools. This evaluation has shown clearly that such an impact has occurred, that pupils who have been exposed daily to the Sunshine Programme have improved in all language skills which were assessed. We. believe that the actual results would have been stronger if all teachers had been able to implement the programme as intended but it is a fact of life that staffing problems and community protests make this situation difficult to achieve. Even the testing programme in November handicapped the Sunshine pupils as over half of them took their tests during a heatwave, whilst most Control group schools had better physical conditions for testing.
>
> It is also worth noting that the teachers in the Project schools had been asked to change their style of teaching substantially, after very little training. It takes time and practice to develop expertise and confidence in such teaching methods as Shared Reading or Shared Writing, and the classroom management skills associated with group reading. Furthermore, any teacher absences or resignations were critical as relieving teachers could not maintain the Programme. By contrast, the Control group teachers were on familiar ground because they were using methods they had used for

years and pupil learning could more readily proceed in their absence. In particular, the following conclusions are warranted by this evaluation.

1) <u>In Grade 2 Reading</u> Pupils in the 22 Project schools obtained a mean score of 45,9% which was 13% higher than pupils who followed the normal textbook programmes. Sunshine pupils had a larger reading vocabulary and comprehended better what they read. This margin indicates the pupils have acquired their reading skill at twice the normal rate over a period of 9 months. Those few schools that failed to deliver had extraordinary circumstances of staffing, overcrowding and school disruptions.

2) <u>In Grade 3 Reading</u> Pupils in the 22 Project schools showed a growth of 17% from pre-test to post-test which was nearly 7% more than control groups. The gains appeared less impressive in Grade 3, partly because both Grades followed the same programme. Once again, if we confined the comparison to schools which implemented as intended, the benefits would have indicated a doubling of the normal growth rates. In some it would be more. The fact that Grade 2 pupils appeared to make more progress than Grade 3 pupils can be partly explained by the fact that the Sunshine programme was identical for the two grades in the early months. No doubt, many of the books were very easy for the better Grade 3 pupils and they might have made less progress for this reason. The Grade 2 Project pupils of 1997 would be expected to encounter a more demanding set of books in 1998 when they enter Grade 3.

3) <u>In Grade 2 Listening</u> Sunshine classes were ahead by 6%. Project pupils were better at comprehending a story read to them and at matching pictures with sentences read aloud. Those schools, which fell below the Control group level were again those which had staffing problems or school closures or other reasons for inadequate implementation.

4) <u>In Grade 3 Writing</u> The Project means were similar to those in reading. Project pupils wrote better, more interesting sentences and were better able to describe pictures in their own words. High achievement in writing only occurred across a class if they were also strong indications of growth in reading.

5) <u>An analysis by province</u> shows very similar trends in each case, with minor exceptions. All six provinces showed similar levels of benefit across all the language skills tested. There is no reason to suggest that a book-based scheme such as the Sunshine Programme would not be equally successful in African schools in each region of the Republic.

6) <u>For Coloured schools</u> the evaluation data was insufficient to make strong claims. Teachers and pupils commended the Programme and the three Coloured Schools certainly produced means in November higher than any

Project schools when compared with their own grade levels but they also started from a higher baseline. For these schools the tests were too easy, the pre-test data inadequate and suitable control schools unavailable. Again, there is no evidence to suggest that the Sunshine Programme would be unsuitable but more study of this issue is warranted.

7) Impact on Slow Learners One of the Project Grade 3 classes was found to consist entirely of remedial pupils who should have had special class teaching.   All had repeated the grade at least once and many had done so twice. It was surprising to discover that this class of 45 pupils gained 17,8% indicating more progress than all the control group classes, except two.

To interpret the meaning of these gains, it is helpful to relate them to the normal rates of progress as shown by control groups. A comparison of the average score for Grade 3 pupils in the 12 schools of Control groups shows that they surpassed those for Grade 2 pupils on the same test by 15%. In other words, it normally takes 12 months for pupils in these disadvantaged schools to improve by 15% on tests of this type. Therefore, the fact that Grade 2 pupils in Project schools had improved by 13% more than control pupils, on average, on the same tests means that they had advanced by the equivalent of 10 months after being exposed to the programme for about 9 months.

If such a doubling of their progress rate were able to be sustained each year throughout their primary school years, the pupils in African schools would be at least 5 years ahead of current expectations of reading ability by the end of Grade 6, with corresponding improvements in other language skills, and indeed in all curriculum subjects which depend on reading. Such gains would also be expected to accompany a rise in confidence and interest in learning, an outcome which is surely desirable in the present context in South Africa." (pp 31-2.)

A second and more substantial evaluation exercise was conducted in 1996 encompassing 49 schools throughout the country. Once again, the conclusions reached in this evaluation are quoted at some length.

"The results of the survey show very significant differences between READ and Control Schools. In the Reading Tests, the READ schools outperformed the Control Schools by 24,1% in Standard 3; by 28,8% in Standard 4; and by 29,8% in Standard 5. In addition, while the Control Schools show an increase of 11,9% from Standards 3 to 5 (33,6% to 45,5%), the READ Schools show an increase of 17,4% (41,7% to 59,1%).

In the Writing Tests, the results are even more significant. The READ Schools outperform the Control Schools by 190,6% in Standard 3; by 138,0% in Standard 4; and by 111,9% in Standard 5. Whereas the Control Schools show an improvement of 11,8% from Standards 3 to 5 (7,5% to 19,3%), the READ Schools show an improvement of 19,1% (21,8% to 40,9%).

Comment on Results

Perhaps even more significant is a comparison of the Standard 5 results in the Control Schools with the Standard 3 results in schools with which READ works. In terms of reading, the Standard 5 Control Schools group is approximately 18 months behind the READ Schools group their average score of 45,5% falls midway between the 41,7% of the READ Schools Standard 3 pupils and the 49,6% of the READ Schools Standard 4 pupils.

In the Writing Tests the difference is even greater. The average score of the Standard 5 Control Schools pupils is 19,3%, whilst the average score for the READ Schools Standard 3 pupils is 21,8%. The READ Schools pupils are therefore over 2 years ahead of their non-READ peers.

Whilst there are many variables at work in an education survey of this nature, the essential difference between these two sets of scores is, as far as we can ascertain, the exposure of the READ Schools to the READ book-based literacy programme.

Conclusions of the Survey

- These results confirm the international research findings which show that a book-based approach to teaching English as a second language had major benefits for pupils in terms of their communicative skills in using English as a second language.
- There is a very high correlation between the pupils' reading skills and their ability to write good English. The lesson is obvious; children who read well, write well.   Conversely, to improve writing skills, we need to improve reading skills.
- The role of the teacher in a book-based approach can not be over-estimated. The most successful schools we visited (in terms of results) were those with enthusiastic, motivated and committed teachers who had received good in-service training and back-up.
- It must be remembered that reading and writing form the basis of learning in the South African education system. Any interventions which can demonstrably improve the language competencies must therefore be welcomed, since they impact on the very foundation of education. The READ programmes have indicated that pupils in these schools have accelerated their language proficiency skills by up to two years. In

financial terms, this surely reflects one of the best returns on investment in all education funding and spending." (pp. 4-5)

6.1.1   Comment on READ Learning Gains

It is apparent from these studies that the materials employed by READ have an impact on pupil learning and produce significant learning gains. Despite comments made earlier in this report on the lack of validity of matched-group studies, the studies referred to above - because of their studious avoidance of the pitfalls associated with such studies by their concentration on using control groups as benchmarks rather than for detailed comparisons - are useful. They serve to indicate that we can safely make assumptions regarding the learning benefits of the READ materials in the classes in our study.

6.2   The SMILE Programme

The SMILE organisation has also commissioned a number of evaluation studies in the recent past and extracts from one which relates to the districts in which some of the schools included in this study fall, are included as follows

The evaluator (M. Claude 1997) concludes

"These schools have been particularly interesting as they demonstrate how the SMILE materials may work under glaring different circumstances and conditions. The two schools illustrate how disparagingly the S.A. educational system is, providing physical environments at opposite ends of the scale. Furthermore, it is likely that the Ximba pupils' contact with English is confined to the classroom (i.e. English is rather a foreign than a second language), partly because of its relative remoteness, partly because of the unrest, which discourages visits to and from the area.

With regard to Teacher 1 there is the potential here to further develop her teaching talents, and to encourage her in the role of local SMILE mentor; such a step will further develop and empower her. The SMILE materials, with their dual emphasis on the development of linguistic, as well as cognitive skills, are well aligned to O.B.E. (Outcomes Based Education), which will be introduced in S.A. schools in 1998, and may well be giving the

pupils in question a headstart. Finally, teachers and pupil are benefiting from frequent contact with the competent and professional SMILE staff."

Our information on the learning gains in the SMILE classrooms included in this study is advanced by the fact that the teachers administered pre- and post-tests as part of the SMILE programme. This information is included in a document entitled 'Classroom Reinforcement and Teacher Training Programme' published by SMILE in November 1998. The following extract is taken from this document

"AIM:

Evaluation of the impact of SMILE's materials and Teacher Training in the classroom takes place with every project.

The aim of the evaluation is

- To measure the English language development of learners over a period of nine months (February to October);

- To measure the relevance and effectiveness of the SMILE Learning Programmes in the teaching of the English Language, Literacy and Communication Learning Area.

METHODOLOGY:

The learners are assessed in their classrooms during their normal lessons in February and October. Grade 5 learners are given 30 minutes to complete an Evaluation Workbook comprising sample exercises based on material found in the SMILE programme Organisers. The evaluation is administered and marked by an appointed Facilitator to ensure that a consistent standard is maintained.

Four schools involved in the SMILE Classroom Reinforcement and Teacher Training Programme participated in the evaluation. The schools were selected to ensure that urban, semi-rural and rural learners were represented adequately.

A total of 329 Grade 5 learners wrote the tests, 2 schools - one rural and one urban - were selected as control schools. These schools have not participated in the SMILE reinforcement and Teacher Training Programme.

RESULTS :

SUMMARY OF RESULTS

TEST SCHOOLS					
Schools	Type of Community	No. of Learners	Average Score /50 February	Average Score /50 October	% Improve-ment
Laboure	rural	58	7	18	157
Asizenzele	rural	61	12	25	108
Intakemazolo	semi-rural	58	8	25	213
C. Nxumalo	urban	57	9	31	244
Total/Av.		**234**	**9**	**25**	**180**

CONTROL SCHOOLS					
Schools	Type of Community	No. of Learners	Average Score /50 February	Average Score /50 October	% Improve-ment
Mhawa	rural	50	11	14	33
Thandokwazi	urban	45	15	29	93
Total/Av.		**95**	**13**	**21**	**63**

EVALUATION ANALYSIS

The four schools involved in the SMILE Classroom Reinforcement and Teacher Training Programme showed an overall improvement of 180% in comparison with the 63% overall improvement of the two control' schools.

It is evident from the above results that the learners have gained confidence and their English Literacy, 'Language and Communication Skills have improved. It is interesting to note that the improvement of the learners at Christopher Nxumalo - an urban school, is twice that of Asizenzela - its rural counterpart - this is also shown to be true of the control schools.

Also it must be noted that Labourer's improvement - a rural school, is more than twice that of the combined control schools percentage improvement. This highlights the fact that SMILE's material plays a significant part in the general English language development and in closing the gap between the urban and the rural learner."

6.2.1   Comment on SMILE Learning Gains

The learning gains found by the SMILE tests show a similar pattern to those in the READ evaluations. In all cases, the project school pupils show greater advances in learning than their counterparts in the `control' schools. It is safe to assume that the programmes can take the credit for such advances, and this study has sought to indicate the manner in which those gains are achieved.

CHAPTER 7 FINDINGS

This research questions posed and set out in Chapter 2 were

- How do teachers in large classes interact with their pupils?
- <u>How effective </u>is their teaching?
- <u>What use </u>is made of teaching and learning materials?
- In what way does the use of such material contribute to effective learning?
- What do teachers, principals and materials designers feel about large class teaching and the benefits of the materials available to them?

As a result of this pilot study (which also sought to field-test the research tools which had been devised for the study) the following findings are claimed:

7.1 Classroom Interaction

From the twenty-two lessons observed and the data accumulated by means of the teacher and pupil records, it appears that lessons with large classes remain dominated by teacher talk. A mean of 81,82% of the total lesson time appeared to be occupied by teacher talk. It is possible that the lessons observed were not typical as the teachers may have felt a need to put on a particular display as they were now under scrutiny. Nevertheless, it is probably safe to assume that teacher talk dominates the large-class lesson as it frequently does in any classroom. What is perhaps of greater interest to the focus of this study is the distribution of teacher talk across the three main sub-categories employed.

Some 30,36% of the lesson time was typically spent explaining matters to the pupils; 40,43% of the time was spent asking questions of the pupils; and 11,03% reading to the pupils.

Employing a different matrix the distribution of teacher talk shows that some 62,87 of the lesson time was spent by the teacher addressing the class as a whole; 8,7% talking to a group of pupils and 10,25% focusing on a single individual.

Both these findings are encouraging and challenging. It is rewarding to notice that group work does exist even in such large classes and that some time (be it extremely limited when the number of pupils in the class is taken into consideration) is devoted to individual one-on-one interaction. The challenge remains to increase the amount of time in which the teacher permits the pupils to work whilst he/she performs a more firmly established role of facilitator of learning rather than the teaching of knowledge.

An examination of the remaining time in the lesson when the teacher is not talking provides the inverted image which reinforces the conclusions already reached. The 5,51 % of lesson time in which the teacher listens to or observes the class as a whole is contrasted with the 12,86% of the time when he/she focuses on groups of pupils and 22,63% on an individual pupil.

7.2 Effectiveness

The evidence for the effectiveness of the teaching observed in this study is largely indirect. Whilst there is some evidence from the pre- and post tests conducted by the SMILE teachers, other evidence is drawn from larger studies of the effectiveness of the two programmes in large audiences.

This evidence is powerful and it would be difficult to doubt that the intervention of both SMILE and READ has led to more efficient and effective teaching and learning. It may be unwise, and possibly futile, to attempt to measure this and it is proposed that the evidence presented in this report be seen as sufficient to conclude that the provision of well-researched and well-prepared materials, training and support for

the primary school teacher of large classes ensures an improvement in learning gains of the pupils and in more effective teaching styles.

7.3 The Use of the Materials

During the observation lessons a record was kept of whether each activity employed the SMILE/READ materials or not. The resultant data shows an excellent usage of the materials - in fact a heavy reliance upon it during interaction with the whole class, a group of learners or an individual learner. The data also shows that the materials played a significant role in the different types of interaction observed such as discussing, explaining, questioning and answering, reading, and writing. The positive attributes of such a dependence are that the quality of materials ensures that substantial and well-directed learning is occurring in those classrooms. Without such a reliance on the materials supplied, one would be obliged to remain without assurance of this. The follow-up support visitations which both organisations have built into their interventions assist in ensuring that the materials are effectively and appropriately employed.

7.4 The Relationship between the Use of the Materials and Effective Learning

One is unable to speak with complete confidence on this matter as to assume that learning gains were effected by the use of the materials would be to ignore other important contributory factors such as teacher skills, motivation and the general quality of the learning environment. . Such assumptions also lack the support of empirical data. It can, however, be postulated that because of the otherwise impoverished learning environment; because of the conviction of the teachers and principals in their interviews; and because of the general undeniable advance in learning gains showed by the major evaluation studies; that the materials contribute to these gains and that such gains are obtained through a meaningful (or "good") use of these materials. We suggest that such a postulation is reasonable.

7.5 Opinions of Principals and Teachers

The detailed examination of these reported in Chapter 5 leads to the undeniable conviction that both groups feel that the materials are well-suited to the needs of the teachers and the pupils. Few, and then only very minor, reservations were expressed by any of the participants regarding the nature and content of the materials; their production quality; their usefulness and effectiveness; the benefits obtained from the continuous training and work-shopping; and the much-appreciated personal support and contact obtained from the design teams. Even allowing for Hawthorne and Halo Effects, one has to be impressed by the positive nature of the opinions expressed by all seventeen individuals interviewed.

7.6 Summary

This study has highlighted the degree to which the teachers of these large classes employ the teaching and learning materials supplied by SMILE and READ in their lessons. It attributes much of the resultant learning and other classroom management gains to the use of these. It endorses the belief that one of the most effective ways of improving teaching and learning, particularly in the area of language development, is to be found in the developing, supplying, and supporting of materials. These will, it is believed, greatly assist practising teachers of large classes and will do much to ensure that meaningful learning takes place in a well-managed classroom environment.

BIBLIOGRAPHY

Aitkin, M et al. (1981)"Teaching Styles and Pupil Progress: A Re-analysis" in British Journal of Educational Psychology 51 pp. 170-86

Amidon, E & Hough, J (Eds.) (1967) Interaction Analysis: Theory, Research & Application Reading, Mass. :Addison-Wesley

Bennett, N (1976) Teachinq Styles & Pupil Progress London: Open Books Carline, J (1970) "In-service training re-examined" in Journal of Research & Development in Education 4 pp. 103-15

Dachs, T (1986) Teaching Styles and Pupil Progress: A South African Study Unpub. Ph.D. thesis Johannesburg : University of the Witwatersrand

Dunkin, M & Biddle, B (1974) The Study of Teaching New York: Holt, Rinehart & Winston

Elley, W; le Roux, N & Schollar, E (1998?) Evaluation of the Research Proiect on Teaching Children to Read `Sunshine in South Africa' Johannesburg: READ Emmer, E (1967) "The effect of teacher use and acceptance of student ideas on student verbal initiation" Unpub. doctoral thesis: University of Michigan

Finske, J (1967) "The effect of feedback through interaction analysis on the development of flexibility in student teachers" Upub. doctoral thesis University of Michigan

Flanders, N (1970) Analysing Teaching Behavior Reading:, Addison-Wesley Galton M; Simon, B & Croll, P (1980) Inside the Primary Classroom London :Routledge & Kegan Paul

Hill, W (1967) "The effects on verbal teaching behavior on learning interaction analysis as an in-service education activity" in Classroom Interaction Newsletter 2,2 pp. 30-1

Kirk, J (1967) "Elementary school teachers and interaction analysis" in Amidon, E & Hough, J (1967) (Eds.) op.cit.

Moskowitz, G (1967) "The attitudes and teaching patterns of co-operating teachers and student teachers trained in interaction analysis" in Amidon, E & Hough (1967) op.cit.

Simon, A (1967) "Patterns of verbal behavior in favored and non-favored classes" in Classroom Interaction Newsletter 2,2 pp. 47-50

Tisher, R (1970) "The nature of verbal discourse in classrooms and association between verbal discourses and pupils' understanding in science" in Campbell, W (1970) (Ed.) Scholars in Context: The Effects of Environments on Learning Sydney: Wiley

Traill, R (1971) "The effects of using interaction analysis as a means of assisting student teachers to analyse teaching behaviour" in Australian Journal of Education 15,3 pp. 295-304

Tuckman, B; McCall, K & Hyman, R (1969) "The modification of teacher behavior Effects of dissonance and coded feedback" in American Educational Research Journal 6 pp. 607-19

Vinjevold, P (1996) Evaluation Report of the Northern Cape Primary School Workbook Pilot Project Johannesburg: JET