

The results of t-tests which were carried out between the mean pretest and posttest scores of both groups revealed no significant differences in the traditional group. There was a significant difference in the experimental group ($p < .01$). A t-test between the mean gain scores of each group was significant at the .001 level. Chi-square analyses of the programme's tracking system revealed no significant differences between choice of track and the following: academic level, posttest results and gain. There was a significant relationship ($p < .05$) between completion time and choice of track. The results are encouraging and indicate that programmed instruction might be a viable technique for teaching remedial English grammar to adults in Kenya.

ACKNOWLEDGEMENTS

I would like to take this opportunity to express my appreciation to the following people for providing me with support, encouragement and guidance while I prepared this thesis - equivalent:

Dea Andrews, Christine McCormick and Anna Obura, all formerly of Kenya High School, who sowed the first seeds with our interdisciplinary project:

Dr. Ellen Kitonga, of Oxford University Press, who first encouraged me to write;

Mr. H. J. Nyamu and Mr. B. W. D. Hocking of the Kenya Institute of Administration who arranged for me to test my materials at the Institute;

Mr. P. A. N. Itebete and Miss Colleen Dolan who ran the experiment for me;

the K. I. A. students who gave up their free time to work through my materials;

Sam and Sandra Muinde, Margarita Abwao, Charles Muinde, Mudikira Kibisu and Brenda Stern who pilot-tested my first programme;

Dr. Richard Yorkey, Eric Holden and Dr. Dennis Dicks of my committee who gave generously of their time and considerable expertise in all stages of this work;

Dr. Gary Coldevin, my advisor, and his wife who were never-failing sources of good-humoured advice and counsel at all times;

Batia Bettman, my "unofficial" committee member, who shared books, ideas and editorial expertise;

my sister, Verna Marzinik, who prepared the final manuscript with great patience and perserverance under difficult circumstances; my husband, Josef Mwosa, and my children, Katanu and Kioko, who were understanding throughout the whole project; my mother, Mrs. Henry Marzinik, and my late father whose pride in my accomplishments made me want to do well; and the first Cybernetician, to whom I turned constantly.

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CHAPTER ONE

I. Problem Statement

A. Background and Context of the Problem

The educational problems of developing African countries are multitudinous and complex. Their inter-dependancy is such that solutions to some can often come only after solutions to others have been found. This intricate entanglement of problems and solutions must be considered by those who would eagerly offer western technology as a means of bringing Africa into the twentieth century.

Although African nations have been described as "century skippers" (Adams and Bjork, 1969, p. 140), the term refers more to their hopes than to their successes despite the fact that education is the top developmental priority in most of the third world. Those who are concerned with developing education have much to consider. There is a great shortage of trained teachers, a lack of basic teaching materials, a lack of equipment and a lack of adequate facilities.

Techniques involving electricity and machinery present their own special problems. The rural areas still have no access to electricity and the cost of equipment is high. Operation and maintenance by skilled technical staff is almost mandatory and technicians are hard to find in a world which still values academic education to the

detriment of technical training.

In addition, there is also the problem of the multiplicity of local languages. Often a second language, like English or French, is the language of instruction. This is imperfectly taught and imperfectly understood by both the teachers and the students (Dakin, Tiffen and Widdowson, 1968).

Bruner (1966) speaks of the special psychological problems associated with the ability to think and solve problems in a nonnative language. These problems must also be considered when designing instruction and sequencing information for teaching and learning.

Materials and techniques which are commonplace in developed countries have to be empirically tested in developing countries. Technologies which are proposed have to be examined in the light of the foregoing constraints. All need some adaptation before they can be used in the African context.

New uses for established techniques have to be explored. The resulting products may seem very different from their western counterparts but this should in no way detract from their value. Research of this nature is a vital, virtually unexplored and interesting aspect of educational technology.

One of the new educational techniques which has attracted the attention of educational technologists for

use in developing countries is programmed instruction. Programmed instruction is a cheap, effective teacher-multiplier. It needs no electricity or complicated machinery to make it work. It is a twentieth century technique which can be used by an unsupervised student working in a thatched hut by the light of a kerosene lantern.

UNESCO considered it to be an important enough technique to sponsor three workshops on it in the developing countries of Nigeria, Jordan and Brazil (Hartley, 1964). Since then, some research has been carried out in Africa on the effectiveness of programming in the African context (Hawkbridge, 1967, Roebuck, 1968, Bunyard, 1970, Lawless, 1969, and Eshiwani, 1975). Only one study, a doctoral dissertation (Eshiwani, 1975) has been reported in Kenya.

As the author was a language teacher in Kenya for eight years and a trainer of civil servants for two years of that time, she was interested in finding a language teaching technique which would be effective with adults in Kenya which would fall within the constraints imposed by the lack of electricity and technically trained staff. Unfortunately, most of the African research on programming has been done on the effectiveness of programming in the teaching of science, mathematics and geography using secondary school students as subjects.

Despite the fact that there is a great need to

develop techniques for remedial language instruction because of the second language situation (Dakin et al, 1968) and despite the fact that adults in decision making positions are also in need of efficient training techniques (Ditchley Park Conference Report, 1966) the author has found no research to date in Kenya in either area (Eshiwani, personal communication, September 21, 1976 and Muto, personal communication, July 28, 1976). It would seem to be a "worthwhile activity" (Peters, 1973) to investigate the effectiveness of a learning programme in remedial English using adults in a training institute in Kenya.

B. Problem Statement

The purpose of this study was to determine whether adults in a training institute who use English as their second language would learn more from a programmed text than a traditionally written text.

The traditionally written text, the students' usual text, consists of descriptive passages about common errors in English with rules to correct those errors and examples of those rules followed by short exercises. It is a better text than most because it has been written for Kenyans and has their specific language problems in mind. However, it does not involve the student actively and students usually wait quite a long time before they learn whether or not they have been correct. The text is often forgotten by this time and the error the student makes is reinforced. All students read the same material and do

the same exercises regardless of their ability. It is time-consuming for both the teacher and the student and doesn't result in very efficient learning.

In contrast, a programmed text presents information in logically organized steps called frames which question the student fairly frequently to check on his understanding and give him an immediate knowledge of results.

This arrangement is useful for students studying in their own language because it stresses the main teaching points.

It is even more useful in the second language because it acts as a check to make sure comprehension has occurred.

The addition of diagnostic tests and remedial branches make programmes more versatile for a wider variety of students. This allows some students to proceed more rapidly while offering remedial explanations and practices to other students at the point where they are needed.

This research will concern itself with three main areas:

1. The comparison of two approaches to teaching remedial English grammar
2. The analysis of the academic qualifications of the students using the two approaches
3. An analysis of the branching system of the programme with respect to academic qualifications and effective learning.

The problem statement can be formulated as follows:

Does the use of a branching programme on remedial English grammar result in more effective learning than the use of a traditionally written text?

A secondary problem can be formulated as follows:

Will students with higher academic qualifications learn more effectively than students with lower academic qualifications?

A third problem can be formulated as follows:

What is the relationship between the students' choice of branches, academic qualifications and effective learning?

C. Significance of the Study

This study is significant for the field of educational technology and education in general because it will add to the research on the methods of teaching and learning in different cultural contexts. It is significant for the teaching of English because it attempts to empirically test a method of teaching remedial English where there has been little reported research. Finally, it is significant for Africa as a whole and Kenya in particular because it will be exploring the effectiveness of programmed texts in a remedial English with adults where there has been a paucity of recorded research.

This particular study was restricted to the comparison of two textual approaches because the experiment was run in Kenya in the author's absence. The textual methods offered greater ease of administration and control. Other approaches would have been difficult to arrange and even

more difficult to measure without the author's actual physical presence in Kenya.


The topic of the texts was uncountable or mass nouns which are often incorrectly used by Kenyans (Hocking, 1974). Kenyans make errors with uncountable nouns because of interference between their vernaculars (mostly Bantu-based) and English. Correct English use of uncountable nouns is usually the opposite of correct use in Kenyan vernaculars (Hocking, 1974, Ashton, 1968).

The traditional text which was used was specifically designed for the Kenya Institute of Administration (K.I.A.) where the experiment was run. It was based on ten years of research on English language errors made by Kenyans. The programme was designed so that it contained the same rules and examples as the traditional text. Both texts made extensive use of African place names and African situations. Both contained sentences of the type commonly misused by the civil servants who used them.

Civil servants attending courses at the K.I.A. volunteered to test the materials. They were randomly assigned to two groups: a treatment group receiving the programmed text and a comparative group receiving the Institute's usual grammar text. Both groups took a pretest before working their way through their materials. The means of the groups were statistically compared with t tests. Chi-square analyses were done to determine the relationships

between academic levels and learning. Chi-square analyses were also carried out on the programme's tracking system.

In summary then, the objective of this research was to find a viable teaching technique for use in a developing country which would work within the constraints imposed by the lack of electricity and technically trained staff. A branching programme designed by the author was compared with a traditional text and evaluated in Kenya by civil servants attending the Kenya Institute of Administration. The evaluation considered the effectiveness of the two techniques, the academic qualifications of the students using the techniques and the effectiveness of the programme's tracking system.



CHAPTER TWO

II. Review of Related Research

A. History of Programming

Programming originated with teaching machines, first developed by Pressey prior to 1930. They attracted little attention until the 1950's when Skinner came into his own with his operant learning research with animals. The essential element of the teaching machines was the immediate feedback or knowledge of results received by the students. Military research on self-instruction was also carried out in the 1950's and a significant new technique was branching programming or variable sequencing of items depending on the student responses first devised by Crowder (Skinner, 1954).

Skinner's teaching machines had these advantages also listed by Pressey: immediate reinforcement, reinforcement after each response, the reinforcing nature of the task itself, the assurance of active participation, the adaptability to individual capabilities and labour-saving devices. The significant difference in Skinner's approach was that he rejected the multiple-choice technique used by Pressey in favour of composed answers. Crowder's Autotutors were designed for branching programming in which the sequence of the items depended on the response made by the student. Correct answers led to the dropping out of certain items and incorrect answers brought on additional remedial material.

Although the early programmes depended upon machines to present the material, it soon became apparent that scrambled texts were a much more flexible means of presenting material (Smith and Smith, 1966).

B. Research on Programming

Strong (1964), Smith and Smith (1969), Davies and Hartley (1972) and Hartley (1974) all conducted examinations of the types of research experiments which have been carried out using programmed instruction. The most popular type of research has been the comparative study in which programmed instruction has been compared with conventional instruction. Smith and Smith (1969) report that comparisons between programmed instruction and conventional instruction often favours the programmes, especially in terms of time scores. They note that inconclusive results in the research comes about because of uncontrolled variables such as the novelty effect, time spent on different methods and the personalities involved. Hartley (1972) concurs and says that inconsistent results may have occurred because the past research has not been rigorous enough. He suggests that the content taught should be identical, that both presentations be optimum, that accurate measures of learning time be taken and that an unbiased criterion test be given. He also suggests that the length and type of programme and how it was presented be considered as well as the number of students

involved in each condition and whether or not a retention test was given. O'Day (1971) did extensive testing with various programming techniques and concluded that programmes which were basically linear were the most efficient giving the highest gain scores over the shortest periods of time. Programmed instruction is also in extensive use in the Bureau of Training in the U.S. Civil Service Commission with over 2,300 programmes in current use. (U.S. Civil Service Commission, 1970).

This study will attempt to follow Hartley's (1972) suggestions in comparing two optimum presentations using identical content with careful measures of time using an unbiased criterion test.

C. Research on Programming with Respect to Language

Research on programming with respect to language is much less well reported than research on programming. There are fewer empirical studies and they are not well designed (Carroll, 1963). However, some long range studies have been reported regarding the use of programmed instruction in language. Ornstein, Ewton and Mueller (1971) feel that those areas of language needing drill, remediation and rule governed behaviour can be effectively programmed.

Long-standing well-documented work on programming in Spanish has been done by Morton (1971). Mueller's (1971) French programme was tested here in Canada on civil servants in 1969 and 1970 with favourable results. Capable students

did well; less capable students did as well as the capable ones in more time. Mueller's programme at the University of Kentucky has consistently produced better results than the audiolingual courses with which it has been compared since it began in 1966 (Ornstein, et al 1971). Stavert, Budgett and Moore, (1969) report on the testing of an English programme for the Royal Navy. The average gain was 28% on a sample of 270 enlisted men. Porter's experiment in the teaching of spelling over a period of 22 weeks found the programmed method was better and took only a third of the time.

Howatt's (Tobin, 1967) thoughts on the recursive principle in foreign language programming stress the principle of cyclical review important to programme design:

Foreign language programming must aim towards a principled organisation of the conditions under which language is learnt . . . it is suggested that the establishment of second-language competence may be operationally characterised in terms of cyclical re-connection with the data of the foreign language in the form of recursively structured, meaningful texts. Thus the recursive principle may operate textually. It may also operate 'sub-textually' in the form of 'exercises', or micro-programmes, released for meaning at the contextual level with subtextual component 'practice' as and if necessary....

Carroll (1968) in Ornstein et al, 1971, p.92

concludes:

Programmed instruction can take over a large part of the initial presentation of

of material as well as serving as a means of drilling students in those aspects of language learning that have to be drilled. There is no necessary conflict between transformational theory and behavioural psychology.

D. Research on Programming with Respect to Africa

Research on programming with respect to Africa was stimulated by the UNESCO workshops on programming 1963. (Hartley, 1964), and Hawkrige (1969, 1970) directed early research at the Programmed Learning Centre in Salisbury, Rhodesia. Work done by Roebuck (1969) in Western Nigeria is also reported. He concluded that the main constraints on the successful running of programmes were administrative factors. Since his experimental work was carried on during the Nigerian civil war, it is not surprising. Bunyard (1970) working in Northern Nigeria felt that Roebuck was unnecessarily pessimistic. His experience with general science programmes indicated significant gains in all areas other than those involving spatial ability which Hawkrige (1970) found to be true also. Lawless (1969) carried out research in Malawi using biology programmes. He compared multiple choice answers with the constructed response answers. He found no significant difference in learning but pupils who used the multiple choice answers finished in significantly less time. Eshiwani (1975) has done the only reported research on programming in Kenya. He tested a programmed unit on

probability on high school students and concluded that the results warrant recommendations that programmed materials may be used effectively in teaching mathematics to high school students in Kenya. A Programmed Learning Unit was attached to the Kenya Institute of Education between 1967 and 1969. Programmes were written and tested and the results indicated that programming was a successful technique and the linear programmes were better than branching ones. Unfortunately, none of the results have been published and the unit is no longer functioning (Muito, personal communication, July 28, 1976). Eshiwani (1975) concludes his dissertation by suggesting that his work be replicated with other samples and that other approaches be taken to verify the findings of his study. This study hopes to do so with an older sample of students in a training situation using remedial English.

As African studies have been uneven and research in programming in foreign language or second language situations has been little, the writer proposes this study as a means of determining whether programming would be an effective technique for remedial English teaching in Kenya. The scope of study is limited because of the lack of control caused by the distances involved. However, this can be considered a preliminary study to more extensive work.

In summary, this research is a replication of studies

done in the past comparing two different modes of instruction. It is hoped that the comparison will be more rigorous because the modes of instruction have been limited to two differently presented texts, both written in optimum fashion on the same subject. This study covered new ground in that it tested a programme using remedial English as a subject in Kenya on adult students. It is hoped that this study will add to the small amount of research available regarding the use of programming in developing countries.

(Ornstein et al, 1971, p. 92) sums up Carroll's (1969) thoughts on programming with respect to language learning:

Designed learning is the term Carroll suggests for foreign language programmes to avoid suggesting that programming is wedded to a narrow Skinnerian learning concept. He explains it as an arrangement and sequencing of experience that is optimally designed to eventuate some form of increased competence on the part of the learner. Designed learning requires the orchestration of all we know about learning, about the requirements of the subject matter or skill to be learned and about the characteristics of the learners into a programme or into programmes of instruction.

It is in this spirit that this research is being

undertaken. Its purpose, to quote the opening poem
(Pendexter in Goldberg, 1972, p. 7-8) is:

To usurp only the drudge's toll, and free
The human teachers for humanity.

CHAPTER THREE

III. Methodology

A. Objectives of Study

As indicated earlier (cf. problem statement, p. 6), the traditional text is defined as the use of the section on uncountable nouns from the students' ordinary text, Common Errors. The programmed text is defined as the use of a basically linear programme with three branches designed by the author.

The main objective of this study was to determine whether the use of a programmed text would result in, more effective learning than the use of a traditional text.

A second objective was to determine the relationship if any between the students' previous academic attainment and achievement on the pretest and posttest scores.

A third objective was to analyze the programme's tracking system to see whether there was any relationship between academic achievement track taken, time and performance on the posttest.

B. Operational Definition of the Variables

The operational definition of the variables is as follows:

Traditional
method

- Passage from the Kenya Institute of Administration's usual grammar text, Common Errors on uncountable nouns written by B. D. W. Hocking.

• Programmed
method

- A basically linear programme with three remedial branches using the same rules and definitions as Common Errors designed by the author for the purpose of the study.

Academic
attainment

- Certificates attained as a result of public examinations.

E.A.C.E.

- East African Certificate of Education which is attained upon the completion of secondary school.

E.A.A.C.E.

- East African Advanced Certificate of Education which is attained after completing two additional years of schooling beyond secondary school.

Effective
learning

- Amount of gain between pretest and posttest.

Pretest

- A test measuring the students' recall of facts, definitions and rules about uncountable nouns which was weighted toward the ability to discriminate between correct and incorrect use of uncountable nouns administered before the students worked through their materials.

- Posttest. - A parallel version of the pretest administered after the completion of the materials.
- Time - Total amount of time from pretest to posttest taken by the students to complete their materials.
- Track - One of three branches through which the students pass depending upon their results on a diagnostic test.
- Fast track - The quickest route through the programme. Students who get one wrong on the diagnostic test read a summary of the six rules for the use of uncountable nouns before doing their end of programme test and posttest.
- Average track - A middle route through the programme. Students who get two wrong on their diagnostic test get a brief explanation of the rules with examples and a practice question for each rule before they go to the summary of the six rules, the end of programme test and the posttest.

Slow track

- The slowest route through the programme. Students who get three or more wrong on their diagnostic test get additional explanation and practices before going through the same materials as the average and fast track.

Frame

- A logical unit of information centered around a teaching point which ends with a question to check on comprehension of that teaching point.

Six rules for correct use of uncountable nouns:

1. Never add -s or -es to them.
2. Never use a number in front of them.
3. Never use a or an in front of them.
4. Never use a plural in front of them.
5. Never follow them with plural verbs.
6. Never refer to them with plural pronouns.

C. Hypotheses

The objectives were restated as the following hypotheses:

Comparisons between the traditional group and the experimental group

Pretest scores and academic level

1. There will be a significant relationship

between the pretest scores and the level of academic attainment in the traditional group.

2. There will be a significant relationship between the pretest scores and level of academic attainment in the experimental group.

Posttest scores and academic level

3. There will be a significant relationship between the posttest scores and the academic level in the traditional group.
4. There will be no significant relationships between the posttest scores and the academic level in the experimental group.

Mean gain between pretest and posttest scores

5. There will be no significant difference between the mean pretest and posttest gain in the traditional group.
6. There will be a significant difference between the mean pretest and posttest gain in the experimental group.

Analysis of programme's tracking system

Relationship between choice of track and levels of academic attainment

7. There will be no significant relationships

between the choice of track and the level of academic attainment.

Relationship between choice of track and completion time

8. There will be a significant relationship between the choice of track and the completion time. Those students choosing the fast track will finish their materials in a significantly shorter time.

Relationship between track and posttest results

9. There will be no relationship between the track chosen and the posttest results.

Relationship between track and gain

10. There will be no significant difference between the track chosen and gain between the pretest and the posttest.

D. Rationale for the Hypotheses

The theoretical justification for Hypotheses 1, 3 and 5 regarding the traditional group derives from a study at the University of Akron in 1964 and 1965 (Ornstein et al, 1971). A positive correlation was found between the aptitude (academic level) of the student and his performance in the traditional group in a comparison of programmed instruction with traditional instruction.

The theoretical justification for Hypothesis 2 can be found in the West African research (Bunyard, 1970). Bunyard found a strong correlation between students' reading ability and their success with programming. It can be hypothesized that the E.A.A.C.E. students' reading ability as indicated by their performance on public examinations would be better and therefore they would do better on the pretest.

The theoretical justification for Hypotheses 2 and 4 derive from the study mentioned previously and in much of the other research on programming. Ornstein (1971) also reports on a study done at the University of Kentucky in the fall of 1967 where students of low and average ability benefitted from the use of programmed instruction in foreign language teaching. Smith and Smith (1966) summarize research on programmed instruction and state that it has been demonstrated that self-instructional techniques effectively promote learning at all academic and aptitude levels.

The theoretical justification for the hypotheses regarding the programme's tracking system (7-10) derives from research

on a programme with three tracks which was made on 65 unstreamed students (Leibman, Makie, and Glover, 1971) where there were no significant relationships between time, academic level and amount of learning. These results were also confirmed by the West African studies (Bunyard, 1972).

E. Rationale for Selection of Media

The material to be taught was basic and cognitive and not subject to frequent changes. It was to be used by a rapidly changing staff and by poorly trained teachers in other parts of the country. Cost was an important consideration as the material was to be used in a developing country. These constraints pointed to the use of a textbook or a workbook. As the material was to be used by students working in a second language who needed drill and remediation, programming seemed to be a logical format for the text or workbook. The self-instructional aspect of programming made its use by both trained and untrained teachers practicable. As the programme was to be used by a variety of students at different levels, a branching programme seemed to be the most logical choice.

Commercial programmes like English 3200 (Blumenthal, 1962) for users of English as a first language were considered but they were too complex. The English 900 series (English Language Services, 1964) for students who use English as their second language was better but geared to a much lower level. It did not contain Kenya-specific materials. It is important to consider this aspect in the nationalistic climate which understandably develops

following independence in African countries.

After carefully considering the constraints imposed by cost and lack of electricity, the type of teachers and students using the material, the type of material to be taught and the political climate in which the materials were to be used, the author designed a branching programme based on one of the language problems Kenyans had using Kenyan examples. The programme was developed by specifically keeping the students' traditional text in mind so that the two approaches could be compared.

F. Behavioural Objectives

The specific behavioural objectives for the programmed text were as follows:

1. At the end of the programme, the student will be able to correctly identify the following types of noun from examples given: common, proper, concrete, abstract, countable and uncountable.
2. When the student completes the programme he will correctly use the 12 most commonly mis-used uncountable nouns.
3. Given a multiple choice situation, the student will be able to identify sentences showing correct use of uncountable nouns.
4. The student will be able to apply the six rules for the correct use of uncountable

nouns by identifying incorrectly used mass nouns in sentences.

There is a final, unspoken objective in that the student will be able to use mass nouns correctly in an unstructured situation but this was not built into the programme since this could be better monitored by individual teachers after students have worked their way through the programme. As Jarvis (1968) in Chastain, 1970, p. 232) says:

Programmed materials ... can drill speaking and writing, but at that point their possibilities become quite limited. Only the teacher can help the student take the step beyond to "real" language practice.

EVALUATION

A. Initial Testing of Programme

The programme was tested while it was still in card form on a one-to-one basis with university teachers and students and revised in the light of the comments made. The materials were then written and pilot-tested with three Kenyan university students at the University of Wisconsin. The students took between fifty and seventy minutes to complete the materials from pretest to posttest. The programme's tracking system was changed following the comments and questions raised by the students.

participating in the pilot test. The remedial branches were made longer and designed to build upon one another so that each branch acted as a summary of the preceeding one.

B. Validation of Posttest

The discrimination, difficulty and validity of the posttest was tested by using the traditional group's results. For the purpose of accurate calculations, Section D of the test was used for validation as its answers were determined by a straight-forward choice of "Correct" or "Incorrect". Sections A, B and C were less easy to analyze for statistical purposes because students received varying numbers of points for answers in each section. However, Section D was the most important section of the test (80 points out of a possible 100) so the validation should reasonably reflect what actually happened.

Difficulty and discrimination were determined by the following formulas (Tuckman 1972):

Index of difficulty = $\frac{\text{number passing an item}}{\text{total number of students taking the test}}$

Index of discrimination =

$\frac{\text{number of high 1/3 who pass} - \text{number of low 1/3 who pass}}{\text{number in high group}}$

A table of the results appears on the following page.

TABLE 1
VALIDATION OF POSTTEST

No. in high No. in low Index of Index of
1/3 who pass 1/3 who pass Difficulty Discrimination

1.	8	8	1	0
2.	8	2	.625	.75
3.	8	2	.625	.75
4.	8	2	.625	.75
5.	8	2	.625	.75
6.	8	1	.56	.875
7.	8	1	.56	.875
8.	6	1	.43	.833
9.	6	0	.375	1
10.	8	0	.5	1

The internal consistency (reliability) of the test was determined by the use of the K-R₂₁ formula which is as follows:

$$K-R_{21}: r_{xx} = \frac{n}{n-1} \left(1 - \frac{\bar{X} (n_2 - \bar{X})}{ns_x^2} \right)$$

Where:

n = number of items in this test

\bar{X} = mean score made by students on this test

s_x^2 = variance of this test

K-R₂₁ was equal to .843 where n was 10, \bar{X} was 6.8 and s_x^2 was 6.4.

C. Population and Sample

The population from which the sample was drawn consists of civil servants working for the government of Kenya. The majority speak a Bantu language as their mother tongue. English, the official language and the language of instruction in the schools, is their second language.

The sample from which usable results were obtained consisted of 54 volunteers (10 women and 44 men) who were attending training courses at the Kenya Institute of Administration. (The Institute is responsible for offering training courses and refresher courses for middle and upper level civil servants. The author was a lecturer in the Language Department there and hopes to return when she finishes her studies.)

The subjects range in age was from 19 to 41. The majority (40) were between 20 and 35. The academic range was from C.P.E. (Certificate of Primary Education) to B.A. There were 2 C.P.E. holders, 7 K.J.S.E. holders (Kenya Junior Secondary Examination - two years of secondary schooling), 23 School Certificate holders (the equivalent of four years of secondary school), 18 Higher School Certificates holders (two years of schooling beyond the secondary level) and one B.A. All subjects were volunteers and all were students attending a variety of courses at the K.I.A. Fourteen were probation officers,

9 were community development assistants, 7 were accountants, 2 were social workers, 2 were auditors, 1 was a police officer and 1 was an estate caretaker. (Others did not indicate the course they were attending.) The diversity of age, occupation and educational level in the sample was desirable as it reflected the diversity found in the groups which attend courses at the K.I.A. (Officers attend courses in groups based on their civil service job classifications rather than their abilities or educational backgrounds.) It was therefore important to search for an instructional technique which would effectively and efficiently cope with such variety.

The sampling procedure consisted of randomly assigning volunteers attending current classes to two groups: a traditional group and an experimental group. Although 65 students participated in all, usable results were obtained from 25 in the traditional group and 29 in the experimental group.

D. Design

A pretest-posttest comparison group design was used. The experiment can be diagrammed as follows:

R O_1 X O_2

R O_3 Y O_4

R is a random group of subjects. O_1 and O_3 are

pretests and O_2 and O_4 are posttests. X is the traditional text and Y is the programmed text.

The variables are as follows:

- Independent - The programmed vs. the traditional approach to teaching remedial English.
- Dependent - Cognitive acquisition as determined by pretest and posttest mean scores.
- Moderator - Educational level, track and time for programmed instruction.
- Control - Text content.

The randomization of the groups lessened the selection bias. The Hawthorne effect was controlled by having both groups participate in the experiment at the same time in different rooms. This also controlled for history and maturation (Tuckman, 1972).

E. Test Administration

All students took the same pretest to determine their entering knowledge level with respect to the use of uncountable nouns. A pretest was necessary in view of the wide range of students and the lack of any formal test data like IQ scores.

After finishing the pretest, one group received the traditional text and the other group received the programmed text. They were told to work at their own pace but to record their starting and finishing times. When they finished working through their material, they gave them in and took the posttest (a parallel version of the pretest).

F. Data and instrumentation

Data consisted of personal information filled in by the students with respect to age, educational background, job classification, mother tongue and time taken to complete the materials. It also consisted of pretest and posttest scores and answers to exercises in both the programmed text and the traditional text.

The tests measure recall of facts, definitions and rules but the majority of the items were weighted toward the students' ability to discriminate between correct and incorrect use of uncountable nouns.

G. Statistical procedures

Chi-square analyses were carried out to determine the following relationship between the two groups:

1. Pretest scores and levels of academic attainment
2. Posttest scores and levels of academic attainment

The scores were divided into higher and lower groups by the median split technique. Students were divided into two groups with students having School Certificate qualifications (E.A.C.E.) or lower in one group and students having E.A.A.C.E. (Higher School qualifications) or higher in the other.

As students did not always indicate all the data requested under the personal information section of the answer sheet, the total number in the Chi-square analyses does not always equal 54.

T-tests (Tuckman, 1974) were carried out to determine whether there were significant differences between the mean pretest and posttest scores in the traditional group and in the experimental group.

In addition to the statistical procedures used to compare the traditional group and the experimental group Chi-square analyses (Tuckman, 1974) were also carried out on the programme's tracking system to determine the following relationships:

1. Choice of track and academic attainment
2. Choice of track and completion time
3. Choice of track and posttest results
4. Choice of track and gain between pretest and posttest

The median split technique was used again to divide scores into high and low groups, completion time into fast and slow and gain into high and low. Very few students used the middle track so the comparisons were carried out between the students who chose the fast track and the students who chose the slow track.

INSTRUCTIONAL MATERIAL

A. Scripts

Complete scripts for both the traditional text and the programmed text are included in Appendix A and B as well as copies of the pretest, (Appendix C), posttest, (Appendix D), and answer sheet, (Appendix E).

B. Content (Hocking, p. 3-4)

The main ideas for the content were as follows:

1. Mass nouns are a grammatical idea.
2. These nouns can never be used in the plural.
3. English usage is the opposite of Bantu usage.
4. Main rules:
 - a. they cannot have -s added to the end of them (that is, they can never be made plural);
 - b. they cannot have a or an in front of them (though they can have the);
 - c. they cannot have any number in front of them (this is the reason for the name uncountable);
 - d. they cannot have any plural word like these, those, many, several, a number of, various, both, few, a few, or the words each, every, either, neither, or another in front of them (all, some, a lot of, a good deal of, a great deal of, and a little can be used);

- e. they cannot be followed by a plural verb;
- f. they cannot be referred to by a plural pronoun.

C. Task analysis

Although the material in both texts contained the same rules and the same examples, a task analysis was carried out to determine a logical sequence for the programmed text. The sequence of information proceeds from the simple to the complex and from the known to the unknown. The task analysis (Gagné and Briggs, 1974, Wong, 1974) is as follows:

Terminal Objective:

Given a list of sentences containing mass nouns, the student will be able to choose those which are correctly used and those which are incorrectly used eighty percent of the time.

Question Sequence:

Answers to the question "What does the student need to know in order to perform this task or objective?"

1. The student must have a knowledge of English to the 2,000 word level (General Service List). (West, 1969).
2. The student must have a knowledge of English parts of speech.

3. The student must know how to form plurals.
4. The student must know what mass nouns are.
5. The student must know six rules for using mass nouns correctly:
 - a. Mass nouns can never be made plural.
 - b. Mass nouns can never have "a" or "an" in front of them.
 - c. Mass nouns can never have numbers in front of them.
 - d. Mass nouns can never have plural words in front of them.
 - e. Mass nouns can never be followed by a plural verb.
 - f. Mass nouns can never be referred to by a plural pronoun.
6. The student must be able to use the rules in practical exercises designed around each type of mistake.
7. The student must be able to choose between correct and incorrect mass nouns in a structured situation.
8. The students must use mass nouns correctly in ordinary writing.

The flow network sheet for the task analysis (Figure 1) follows on the next page. The assessment of teaching points coming from the flow network sheet appears on the following page in Figure 2.

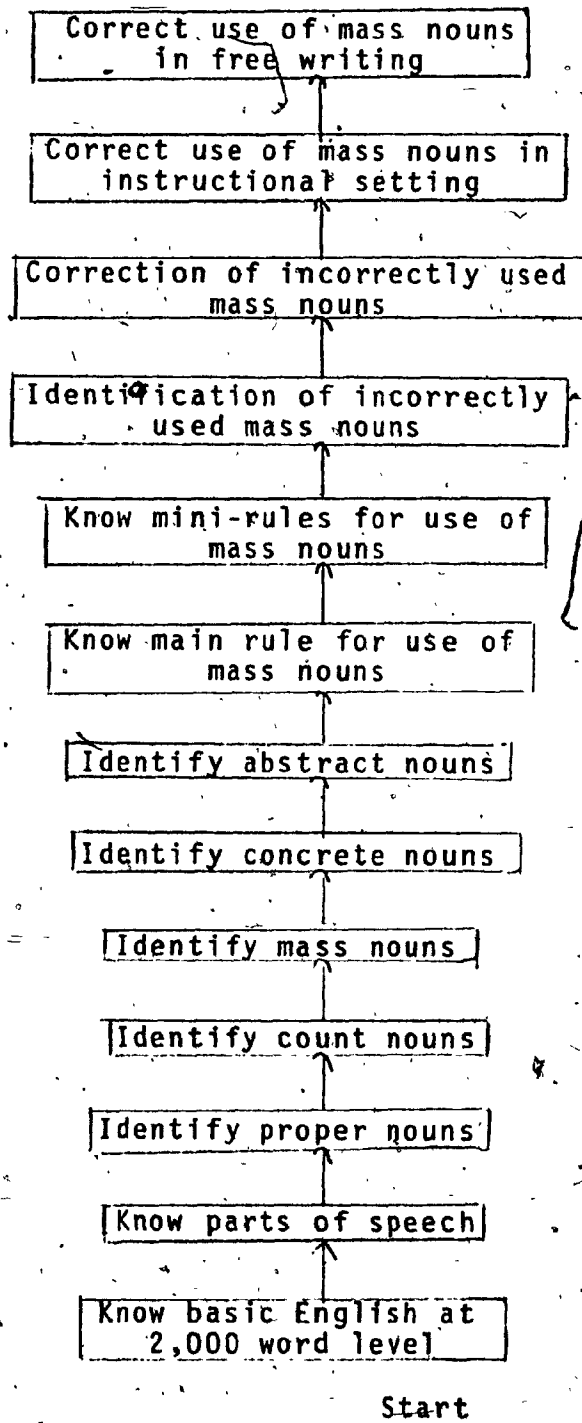


Figure 1: Flow network sheet for programme on mass nouns

Final Obj.	Correct use of mass nouns in free writing (Problem solving)
Obj.	Correct use of mass nouns in instructional setting (Problem solving)
Review and Practice	<p>Correction of incorrectly used mass nouns</p> <p>Identification of incorrectly used mass nouns (Rules)</p> <p>Know mini-rules for use of mass nouns</p> <p>Know main rule for use of mass nouns</p>
Preassess and relearn. if necessary	<p>Identify abstract nouns ✓</p> <p>Identify concrete nouns</p> <p>Identify mass nouns (Concepts)</p> <p>Identify count nouns</p> <p>Identify proper nouns</p> <p>Know parts of speech</p>
Assume all know	<p>Know basic English at 2,000 word level</p> <p>Start (Verbal association and discrimination)</p>

Figure 2: Assessment of learning points

After the flow network sheet had been prepared, the programme itself was written. Figure 3 is a flow chart of the programme which was tested in Kenya. The programme is linear for the first 16 frames. After the review, students take a diagnostic test to determine how much practice they need before they can work with the concepts outlined in the programme. Students who get zero or one wrong on the diagnostic test go straight to the 1A section, take a final programme test and then take the posttest. Students who get two wrong go to the 1B section, then to the 1A before taking their final test and the posttest. Students who get three or more wrong get additional explanation and practice in the 1C section, then do the 1B section, the 1A section and then do their final tests.

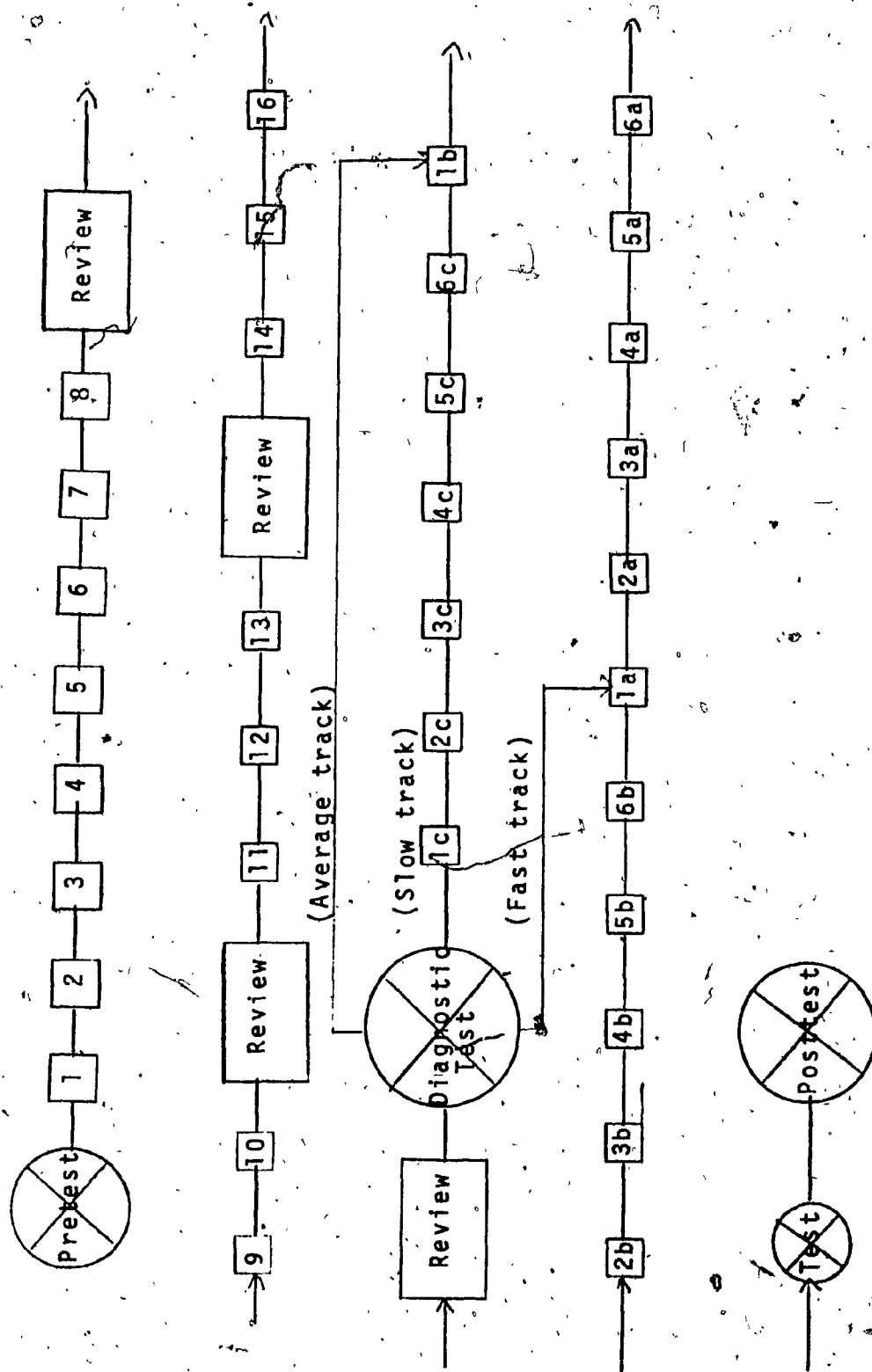


Figure 3: Flow chart of the branching programme designed for the K.I.A.

D. Cost Analysis

The usual method for costing programmed materials as outlined in Friesen (1971) had to be adapted to fit the K.I.A. where the materials were used. The K.I.A. lecturers normally design most of their teaching materials. They are then typed up by K.I.A. clerical staff onto stencils and duplicated by the Publications Department. Materials which are in final format and which are used often are bound by the Government Printers. Students normally pay for their texts and the cost is determined by the current cost of paper and stencils.

The real cost of the programme would be the developmental expenditure as the ongoing costs would be taken care of by the students. Friesen estimates that it takes four programmer hours to write, test and validate a teaching point. Estimating my time at 15 shillings per hour (based on my last salary at the K.I.A.), a programme including 29 teaching points would cost 1740 shillings to develop. If one considers that the programme can be used again and again and that 600 to 900 students go through the K.I.A. each year, the development costs would soon be absorbed.

By way of comparison, the students, all of whom are on full salary, cost the government 1080 shillings per hour collectively while they attend their courses. This programme can therefore be considered highly cost-effective.

CHAPTER FOUR

IV. Results

Comparisons were made between the traditional group and the experimental group on the following items:

1. Pretest scores and level of academic attainment
2. Posttest scores and level of academic attainment
3. Mean gain between pretest and posttest scores.

There were two hypotheses concerning pretest scores and levels of academic attainment. The first hypothesis can be restated as follows:

HYPOTHESIS 1

There will be a significant relationship between the pretest scores and levels of academic attainment in the traditional group.

A Chi-square analysis was carried out by dividing the pretest scores into high and low scores by means of the median split technique and by dividing the students into two academic groups according to their levels of academic attainment. χ^2 was equal to .327 which at one degree of freedom was not significant. Table 2 on the following page shows the results.

TABLE 2

PRETEST SCORES AND ACADEMIC LEVEL
(TRADITIONAL GROUP)

GROUP	LOW SCORES	HIGH SCORES	TOTALS
E.A.C.E.	9	6	15
E.A.A.C.E.	4	6	10
TOTALS	13	12	25

$$\chi^2 = .327, df = 1, N.S.D.$$

The first hypothesis can be rejected therefore: there was no significant relationship between the pretest score and the level of academic attainment for the traditional group. Therefore the level of academic attainment had no effect upon the pretest scores in the traditional group.

The second hypothesis can be restated as follows:

HYPOTHESIS 2

There will be a significant relationship between the pretest scores and the level of academic attainment in the experimental group.

A Chi-square analysis was carried out between the high and low pretest scores and levels of academic attainment in the experimental group. There were no significant relationships between pretest scores and levels of academic

attainment. χ^2 was equal to 1.388 which, at one degree of freedom was not significant. Table 3 below shows the results:

TABLE 3
PRETEST SCORES AND ACADEMIC LEVEL
(EXPERIMENTAL GROUP)

GROUP	PRETEST	POSTTEST	TOTAL
E.A.C.E.	8	5	13
E.A.A.C.E.	2	6	8
TOTAL	10	11	21

$$\chi^2 = 1.388, df = 1, N.S.D.$$

The second hypothesis can also be rejected: there were no significant relationships between the pretest scores and the level of academic attainment for the experimental group. Therefore the level of academic attainment had no effect on pretest scores in the experimental group.

There were two hypotheses concerning posttest scores and levels of academic attainment. The third hypothesis can be restated as follows:

HYPOTHESIS 3

There will be a significant relationship between the posttest scores and the levels of academic attainment in the traditional group.

A Chi-square analysis was carried out between the high

and low posttest scores and the levels of academic attainment revealed a significant difference. χ^2 was equal to 4.576 which at one degree of freedom was significant at the .05 level of significance. Table 4 below shows the results.

TABLE 4
POSTTEST SCORES AND ACADEMIC LEVEL
(TRADITIONAL GROUP)

GROUP	LOW	HIGH	TOTAL
E.A.C.E.	10	4	14
E.A.A.C.E.	2	8	10
TOTAL \	12	12	24

$$\chi^2 = 4.576, df = 1, p < .05$$

The hypothesis can therefore be accepted. There was a significant relationship between the posttest scores and the level of academic attainment. Only students with higher levels of academic attainment got higher posttest scores on the traditional material.

The fourth hypothesis can be restated as follows:

HYPOTHESIS 4

There will be no significant relationships between the posttest scores and the level of academic attainment in the experimental group.

A Chi-square analysis carried out between the high and low posttest scores and levels of academic attainment in the experimental group showed no significant relationships. χ^2 was equal to .467 which at one degree of freedom was not significant. Table 5 below shows the results.

TABLE 5
POSTTEST SCORES AND ACADEMIC LEVEL
(EXPERIMENTAL GROUP)

GROUP	LOW	HIGH	TOTAL
E.A.C.E.	9	7	16
E.A.A.C.E.	3	6	9
TOTAL	12	13	25

$$\chi^2 = .467, df = 1, N.S.D.$$

The hypothesis can therefore be accepted. There is no significant relationship between the posttest scores and the levels of academic attainment in the experimental group. Students working through the programme were able to obtain high scores on the posttest despite their levels of academic attainment.

There were also two hypotheses concerning mean gain between pretest and posttest scores. The fifth hypothesis can be restated as follows:

HYPOTHESIS 5

There will be no significant gain between the mean pretest and posttest scores in the traditional group.

A t-test (Tuckman, 1972) was carried out between the mean pretest and posttest scores in the traditional group. The results were not significant. T was equal to 1.006 which at 48 degrees of freedom was not significant. Table 6 below illustrates the results.

TABLE 6
MEAN PRETEST AND POSTTEST SCORES
(TRADITIONAL GROUP)

ITEM	PRETEST	POSTTEST
\bar{X}	61.56	67.04
s^2	138.17	621.7

$t = 1.006$, $df = 48$, N.S.D.

The hypothesis can be accepted. There were no significant gains between mean pretest and posttest scores. Therefore, the use of the traditional material did not significantly improve the students' scores.

The sixth hypothesis can be restated as follows:

HYPOTHESIS 6

There will be a significant gain between the mean pretest and posttest scores in the experimental group.

A t-test was carried out between the mean pretest and posttest scores in the experimental group. The results were significant. T was equal to 2.6488 which at 56 degrees

of freedom was significant to the .01 level of significance. Table 7 below illustrates the results.

TABLE 7
MEAN PRETEST AND POSTTEST SCORES
(EXPERIMENTAL GROUP)

ITEM	PRETEST	POSTTEST
\bar{X}	57	68.793
s^2	258.812	238.1699

$$t = 2.6488, df = 56, p < .01$$

The sixth hypothesis can therefore be accepted. There was a significant gain between the mean pretest and posttest scores in the experimental group.

Following the discovery of significant gains in the experimental group, a further t-test was carried out between the mean gains of both groups. T was equal to 4.444 which at 50 degrees of freedom was significant beyond the .001 level of significance. The results are encouraging and indicate that programming might be a successful technique. Table 8 on the following page summarizes the results.

TABLE 8
MEAN GAINS BETWEEN TRADITIONAL
AND EXPERIMENTAL GROUP

ITEM	TRADITIONAL GROUP	EXPERIMENTAL GROUP
\bar{X}	5.269	10.66
s^2	458.27	327.07

$$t = 4.444, df = 50, p < .001$$

After the comparisons were carried out between the traditional group and the experimental group, separate analyses were carried out on the programme itself to determine the effectiveness of the programme's tracking system on the following items:

1. Choice of track and level of academic attainment
2. Choice of track and completion time
3. Choice of track and posttest results
4. Choice of track and gain

The seventh hypotheses can be restated as follows:

HYPOTHESIS 7

There will be no significant differences between the choice of track and the level of academic attainment.

A Chi-square analysis was carried out between the slow and fast track of the programme and the levels of academic attainment. The results were not significant.

Table 9 summarizes the results.

TABLE 9

TRACK AND ACADEMIC LEVEL
(EXPERIMENTAL GROUP)

	SLOW TRACK	FAST TRACK	TOTAL
E.A.C.E.	10	7	17
E.A.A.C.E.	3	6	9
TOTAL	13	13	26

$$\chi^2 = .679, df = 1, N.S.D.$$

The seventh hypothesis must be accepted. There were no significant relationships between the choice of track and the level of academic attainment. Having a higher level of academic attainment did not necessarily mean that a student would take a faster track through the programme.

The eighth hypothesis concerning the programme's tracking system can be restated as follows:

HYPOTHESIS 8

There will be a significant relationship between the choice of track and the completion time. Those students choosing the fast track will finish their materials in a significantly shorter time.

A Chi-square analysis was carried out between the fast and slow track and shorter and longer completion times.

The results were significant. χ^2 was equal to 5.20 which at one degree of freedom was significant at the .05 level of significance. Table 10 shows the results.

TABLE 10

TRACK AND LENGTH OF COMPLETION TIME
(EXPERIMENTAL GROUP)

	SLOW TRACK	FAST TRACK	TOTAL
LONG	7	3	10
SHORT	1	9	10
TOTAL	8	12	20

$$\chi^2 = 5.20, df = 1, p = .05$$

The eighth hypothesis can be accepted. There was a significant relationship between the track chosen and the time taken to complete the programme. Students who took the faster track did finish in significantly shorter time.

The ninth hypothesis with respect to the tracking system of the programme can be restated as follows:

HYPOTHESIS 9

There will be no significant relationships between the track chosen and the posttest results.

A chi-square analysis was carried out between the track taken and the posttest results. χ^2 is equal to

.325 which at one degree of freedom was not significant.

Table 11 below illustrates the results.

TABLE 11
TRACK AND POSTTEST SCORES
(EXPERIMENTAL GROUP)

	SLOW TRACK	FAST TRACK	TOTAL
LOW POSTTEST	5	9	14
HIGH POSTTEST	4	6	10
TOTAL	9	15	24

$$\chi^2 = .325, df = 1, N.S.D.$$

The ninth hypothesis can be accepted. There is no relationship between the track chosen and the posttest score. Students choosing the fast track did not necessarily have the highest posttest scores. Nor did students choosing the slow track have low posttest scores.

The tenth hypothesis can be restated as follows:

HYPOTHESIS 10.

There will be no significant differences between the track chosen and the gain between pretest and posttest.

A Chi-square analysis which was carried out between high and low gain scores and fast and slow track revealed no significant differences. χ^2 was equal to .279 which

at one degree of freedom was not significant. Table 12 shows the results.

TABLE 12
TRACK AND GAIN SCORES
(EXPERIMENTAL GROUP)

	SLOW TRACK	FAST TRACK	TOTAL
LOW GAIN	4	7	11
HIGH GAIN	5	8	13
TOTAL	9	15	24

$$\chi^2 = .279, df = 1, N.S.D.$$

The tenth hypothesis with respect to the programme's tracking system can also be accepted. There were no significant relationships between the fast and slow tracks and the high and low gains scores. Those who chose the slow track did not necessarily gain the most.

In conclusion, statistical tests were carried out for two reasons:

1. To find out the comparisons between the experiment group and the traditional group on the following items:
 - a. pretest scores and level of academic attainment
 - b. posttest scores and level of academic attainment
 - c. mean gain between pretest and posttest scores.

2. To find out the relationships between the programme's tracking system and the following items:
 - a. choice of track and level of academic attainment
 - b. choice of track and completion time
 - c. choice of track and posttest results
 - d. choice of track and gain

A summary of the comparisons between the traditional group and the experimental group reveals that academic levels had no influence on pretest scores for either group. Both groups started out with similar entering knowledge; therefore one could assume that the knowledge gained came as a result of the materials used.

For the posttest scores, significant results were found between academic level and posttest scores in the traditional group indicating that students with a better background were able to learn from traditional materials. The same relationships were not found in the experimental group verifying earlier findings that programmes are useful for students of low and average intelligence.

An analysis of the mean gains between pretest and posttest scores revealed significant gains between the mean pretest and posttest scores in the experimental group.

A t-test which was carried out between the mean gain

scores of both groups revealed significant differences ($p < .001$ between the two groups. The programmed group gained significantly more between pretest and posttest than the traditional group. One might say then that programming could be a successful technique for teaching adults in Kenya.

An analysis of the programme's tracking system revealed that there was no significance between the track used and the students' level of academic attainment. E.A.A.C.E. students did not necessarily use the fastest track. There was a significant relationship between the track taken and the time taken. Those taking the fastest track also finished in the shortest time. There was no relationship between the track taken and the posttest results. In other words, students taking the slowest track had equal opportunities to get high posttest scores. Finally, there were no significant relationships between the high and low gains and the track taken. Students with low gains scores did not necessarily always take the fastest track.

CHAPTER FIVE

V. Conclusions, Discussion and Recommendations

A. Conclusions and Discussion

The purpose of the experiment was to determine whether programmed instruction would be a viable technique in a developing country. A branching programme on remedial English was designed by the author and tested by her colleagues on a random group of civil servants attending the Kenya Institute of Administration in Lower Kabete, Kenya. A comparison group used the Institute's usual English teaching materials. A pretest-posttest comparison group design was used. The statistical analyses can be grouped under two main headings:

1. Comparisons between the traditional group and the experimental group
2. The programme's tracking system

The following items were looked at in comparison between the traditional and the experimental group:

1. Pretest scores and levels of academic attainment
2. Posttest scores and levels of academic attainment
3. Mean gain between pretest and posttest scores

In addition, the following items were looked at with respect to the programme's tracking system:

1. Level of academic attainment
2. Completion time
3. Posttest results
4. Gain

Chi-square analyses revealed no significant differences between the levels of academic attainment and high and low pretest scores in either the traditional group or in the experimental group. The additional schooling received by the E.A.A.C.E. students did not necessarily mean that they knew more about uncountable nouns at the time of the experiment than the E.A.C.E. students.

Chi-square analyses did reveal a significant relationship between the levels of academic attainment and posttest scores in the traditional group. Students with E.A.A.C.E. qualifications (two additional years of schooling beyond secondary school) received significantly higher posttest scores than students with E.A.C.E. qualifications (secondary school). The same relationship was not significant for the experimental group. There was no relationship between the level of academic attainment

and posttest scores. It can be assumed therefore, that in this experiment, only students with higher academic qualifications were able to learn from traditionally written materials; whereas both the E.A.C.E. students and the E.A.A.C.E. students were able to learn equally as well from the programmed materials.

One might hypothesize that the additional two years of schooling attained by the E.A.A.C.E. student would improve their overall reading and learning ability or conversely, that their overall reading and learning ability was better to begin with. This background would then make it easier for them to learn from traditional materials.

Students using the programme, however, were able to perform well no matter what their academic background. This finding lends support to earlier research (Mueller, 1971) that programming is a useful technique for students of lower and average abilities. Its ramifications for those who do remedial teaching and training in developing countries for diverse groups are encouraging.

T-tests were carried out between the mean pretest and the mean posttest scores for each group to determine whether the mean gain was significant. The mean gain between the pretest and the posttest for the traditional group was not significant. Students using the traditional

materials did not learn significantly more as a result of the traditional materials they were working through.

The mean gain between the pretest and the posttest of the experimental group was significant. Students did gain a significantly greater amount from the programme.

After the t-test revealed that there was a significant gain between the pretest and the posttest of the experimental group, an additional t-test was run to compare the mean gain scores of each group. This further analysis did reveal a significant difference in the amount of learning gained by the experimental group. This was an encouraging result and lent support to the previous findings that programming was an effective teaching technique in Kenya (Eshiwani, 1975).

This particular programme will still need revision and further trials to make it more effective because it was tried on such a diverse group. However, the author deliberately sought such a group as it represented the usual teaching conditions.

After the initial comparisons were carried out between the traditional group and the experimental group, the programme's tracking system was examined as well to determine the relationship between the tracking system and

the level of academic attainment, the completion time, the posttest results and the gain.

A Chi-square analysis which was carried out between the fast and slow tracks and the levels of academic attainment revealed no significant differences. Students did not choose a faster track because of their higher academic qualifications. This result supports the previous finding with respect to level of academic attainment and pretest scores where a higher level of academic attainment did not necessarily mean a higher pretest score. This finding would have to be tested again under different circumstances but it might mean that language ability and level of academic attainment in a second language are not as related as language teachers in Kenya like to think they are.

A Chi-square analysis which was carried out between the fast and slow track and shorter and longer completion times revealed a logical relationship. Those students taking the fast track did finish their programme significantly earlier than the students who took the other tracks. However, they did not necessarily gain higher results. Another Chi-square analysis which was carried out between the fast and the slow tracks and the posttest results did not reveal any significant differences. Students who took the fastest track did not necessarily gain the

highest scores. This indicates that students taking the slowest track did learn from the remedial branches because they did not necessarily get low posttest scores.

A Chi-square analysis was also carried out between the choice of track and the gain score. There were no significant relationships. Students who took a slower track did not necessarily gain significantly more between the pretest and posttest than students who took the faster track.

One can say then, that for the students who used this programme, academic background was not a factor in determining success. It was also not a factor in determining the use of the programme's tracking system. This lends support to the author's original purpose which was to find a technique of teaching remedial English which would work well with a wide variety of students. However, the conclusions concerning the programme will have to be tested again on a larger sample of students. The main purpose of this particular experiment was to field test a programme and compare it with the school's traditional text. It was not to prove conclusively any relationships between academic level and language ability. This work can be considered as a pilot study for additional work when the author returns to Kenya where she can work more easily with a larger sample.

B. Interpretation of the Results.

Students learning content in a second language, as Kenyan students do, need all the structural cues they can get to help them decode the material. Low reading speeds and poor comprehension are typical in the reading courses run by the Institute. It is not uncommon for students to have reading speeds of 150 words a minute and comprehension scores of 30 to 40 per cent. The programmed format presents material in clear, logically organized sections with built-in comprehension questions and immediate feedback. Students know immediately whether they have understood the section and they also know what the key point is. Although this is an important factor in learning content in a first language, it is even more important when one is learning content in a second language.

The fact that neither the teachers conducting the experiment nor the students participating in it had ever used programmed instruction before must also be mentioned. The Institute, the teachers and the students were merely asked to try out two different kinds of materials for teaching English. This situation emphasizes the efficiency of programming as a technique and the ease with which it can be administered even by those who have no knowledge of the techniques of programming. One can expect greater results in the actual classroom situation where the programme

would be part of the classroom teaching. There it could be properly introduced by the teacher before its use and reinforced with other types of learning after.

The one disadvantage that this particular programme had was that it took longer to complete than the traditional text. Students took longer to read the programme and longer to make the constructed responses. However, the programme was based on a commonly recurring error, an error which exists despite conventional instruction, and it was felt that the constructed response mode would improve language learning by adding another component to the learning situation.

The research lends support to the thesis conducted by Eshiwani (1975) which showed that programming is a technique which can be used effectively in Kenya. It also adds more weight to the suggestions by Schram (1972), Bruner (1966) and UNESCO that the use of programmed materials might be good teacher multipliers for developing countries as well as being cheap and viable alternatives to more expensive systems.

C. Applications

There are several applications for this work. One application is certainly at the Institute itself where the material was tested both in the Language Department and in other departments. In the Language Department programmes could be developed around other common errors and integrated

with the classroom teaching. Programmes could also be developed for other departments particularly for those aspects of instruction which are basic and must be repeated for each new group of students. As the rate of staff turnover is high, the programmes would be a way of assuring some continuity for the students. It would also be a way of taking advantage of the knowledge of good teachers while they are present at the Institute.

Another application which already has the approval of the Ministry of Education is the development of "packages" for the Harambee schools (self-help schools run by the local community) where there is an even greater turnover of poorly trained and untrained teachers.

Programmed texts could be used by a poor teacher or even in the absence of a teacher by a student monitor.

Although programmed texts were never meant to be teacher replacers, they are certainly better than no teacher at all.

A third application of programmed instruction concerns the teachers themselves. Programmes could be used for primary and secondary teacher training and in the primary teacher upgrading courses. Here there is a particular need to review basic skills and the programmed format lends itself well to this. Teachers attending upgrading courses could receive programmed materials in advance by mail for home study. These could then be integrated with classroom teaching when the teachers arrive for the course which is held during the school holidays.

Another application concerns adult education. The desire for education is great amongst Africans. Programmed texts which could be purchased cheaply are a way of providing basic skills. The one published programme available in Kenya is written in Swahili. It is about running a business and it was designed for adults with limited academic education.

It must be made clear at this point that the author is not advocating that programmed instruction should be used in place of the teacher or that programmed instruction be the only kind of instruction used or that programming is a useful technique for all subjects. The author is suggesting, however, that in the absence of a trained teacher or in a situation where no educational opportunities exist at all, programmed instruction does offer a better alternative. She is also suggesting that the use of programmed instruction is a way of approaching remedial English instruction.

D. Suggestions for Further Research

More research needs to be done with larger groups of students over longer periods of time. More work also needs to be done in terms of integrating programmes into the ordinary classroom work. In the future, the author would like to add a cloze procedure test to the pretest to determine the student's reading ability. With this technique, more sensitive research could be done to determine

to what extent the students' academic background and reading levels are related. It would be interesting to see how these results would relate to a student's ability to use programmed materials.

The programme itself also needs revising. The section on abstract nouns was confusing to most students. Many students found the tests to be difficult. The tracking system needs to be set up in order to give the tracking system a better test with a larger group of students. The English used in the programme could still be simplified. In addition, there is also a need to test whether multiple choice type answers would offer as much learning for remedial English as the constructed response type.

There is much more that can be done but the results have been encouraging. Programmed instruction appears to be a useful technique which can be used for teaching remedial English to adults in a developing country such as Kenya.

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APPENDIX A

(TRADITIONAL TEXT)

UNCOUNTABLE NOUNS

(This is the longest section in the book. It is extremely important, and you should spend a good deal of time on it.)

As you know, there is an important class of nouns in English called uncountable nouns (or mass nouns). Many common nouns such as water, paper, air, and sugar belong to this class.

Do not be confused by the name uncountable; some of the things that these nouns represent could in fact quite easily be counted. For example, the word maize is uncountable, but it would not be difficult to count the individual seeds of any quantity of maize if you were given enough time. This is really a grammatical idea; nouns are countable or uncountable according to the way they behave grammatically, rather than according to whether the things they refer to can really be counted or not. In many Bantu languages certain words are always plural (e.g. the Swahili maiti, mashauri when it means advice, and so on), but we are not really thinking of 'more than one' when we use them. English uncountable nouns are more or less the opposite; they are always singular, though we are not thinking of the idea of 'only one' when we use them. To repeat, it is nouns that are countable or uncountable, not necessarily the things they stand for.

There are six special grammatical features of these nouns:

- 1) they cannot have -s added to the end of them (that is, they can never be made plural);
- 2) they cannot have a or an in front of them (though they can have the);
- 3) they cannot have any number in front of them (this is the reason for the name uncountable);
- 4) they cannot have any plural word like these, those, many, several, a number of, various, both, few, a few, or the words each, every, either, neither, or another in front of them (all, some, a lot of, a good deal of, a great deal of, and a little can be used);
- 5) they cannot be followed by a plural verb;
- 6) they cannot be referred to by a plural pronoun.

This means that all the following sentences containing advice, which is an uncountable noun, are wrong:

- x The four people I asked all gave me quite different advices.
- x You should apply to the Department of Agriculture for an advice.
- x Though most of what he said was not very useful, I got one good advice from him.
- x We are trying to follow the various advices we have been given.
- x We were grateful for your advice, which are going to be very useful to us.
- x Thank you for your good advice; we will certainly try to follow them.

There are many very common English nouns that are uncountable, and quite a lot of these are not known by everybody. It is essential to know all those given in the list below; to treat an uncountable noun as countable is a bad mistake.

Sometimes (not often!) it is necessary to specify that we really do mean only one example or a certain number of examples of the thing referred to by an uncountable noun. For example, talking of the advice you received from someone, you might want to say that most of the things he told you to do were impracticable, but one of them was quite sensible. In such cases you have to use some other word that is countable together with the uncountable noun. Often this word is piece or bit; for example, He gave me one good bit of advice; He gave me two very useful pieces of advice. But DO NOT USE THESE WORDS WITH UNCOUNTABLE NOUNS UNLESS YOU REALLY NEED TO INCLUDE THE IDEA OF NUMBER. In those cases it was actually necessary to refer to number, but it would be absurd and quite wrong to say We applied to the Ministry for pieces of advice. As a rule, just use the ordinary uncountable noun by itself.

Here is the list, with the word or words that can be used with each one if it is necessary to specify number. Kind of or type of can be used with all of them, and in the cases where these words are given in brackets they are the only things that can be used.

advice (bit of; piece of)
 information (bit of; piece of)
 help } (kind of.
 assistance } See Note 1
 aid } below)
 support }
 legislation (bit of; piece of. Or use law)
 correspondence (Use letter)
 training (training course or course of training)
 transport (means of. See Note 2 below)
 employment (Use post, job, or position)
 evidence (bit of; piece of)
 equipment (piece of; item of)
 conduct (type of. Or use action)
 behaviour (type of. Or use way of behaving. In the singular you can use habit and in the plural you can use ways by itself: They have fallen into bad ways.)
 bedding (Use bed-clothes or sheets, blankets, etc.)
 clothing (articles of. Or use clothes or garments, though this last is a very formal word, rarely used in speaking.)
 underwear (set of. Or use vests, etc.)
 hardware (You can only use line of hardware or the names of individual things: pots, nails, etc. The sign XHardware on some shops should be Hardware.)
 work (Use job or task; the last is less common. See also Note 3 below.)
 harm (Use injury)
 damage (See Note 4 below)

accommodation (type of; kind of. Or use room)
 ammunition (round of. Or use bullet, cartridge, shell, etc.)
 produce (Use product, which is countable)
 luggage (piece of. Or use box, suitcase, bag, etc.)
 baggage (There is no way of making this countable.)
 property (article of. Or use possessions in the plural. See Note 5 below)
 land (piece of; plot of. Or use farm, etc.)
 game (-wild animals. head of; kind of; variety of; species of. Or use game animals. See Note 6 below)
 scenery (kind of; type of; variety of)
 exercise (form of; type of; kind of. Exercise is countable when it means a drill or practice piece; uncountable when it means the use of the body or mind for its development.)
 play (Use game. Play is countable when it means a theatre piece.)
 furniture (piece of. Or use chair, table, etc.)
 machinery (piece of. Or use machine.)
 notice (-warning. You give notice, not *a notice. Lawyers sometimes make this countable and say a notice, but nobody else does. You can use notification if you need to refer to only one warning or to more than one. When notice means a piece of paper with an announcement on it it is countable.)
 paper (piece of. When paper

means document or newspaper it is countable. The substance itself is uncountable.)

action (in the phrase to take action. Notice this; Xto take actions against somebody or Xto take disciplinary actions are wrong. It must be disciplinary action, or you can use disciplinary measure if the idea of number is really necessary.)

slang (Use a slang expression, a slang phrase, or a slang word)

money (The lawyer's expression moneys or monies means SUMS of money, devoted to different purposes. The 'moneys' involved in the sale of a shop, for example, might be the purchase price of the building, the transfer taxes paid by the buyer, the lawyer's fee for drawing up the legal documents, and so on. This is a special and unusual case, and in all ordinary circumstances money is uncountable.)

Note 1 : But these words are usually turned into verbs: The P.C. has supported us in various ways; The owner has helped us several times.

Note 2 : Notice that means itself is both singular and plural: The railways form an important means of transport; The railways and the airways are both important means of transport.

Note 3 : Work, meaning kazi, is ALWAYS singular in English. When it means a factory (as in a cement works) the word works is singular but always has the -s on the end of it; when it means a major national undertaking (as in The Ministry of Works, road works, and so on), or the moving parts of something, such as a watch, works is always plural.

Note 4 : Kinds of damage is usually inappropriate, and there is no other word that can be used with it. You have to say something like damage to several parts of the building or damage in several places.

Note 5 : Property is countable if it means something for which you can hold a title deed; for example, a farm, a building plot, a house, an industrial site, and so on. But if it means anything smaller and moveable, it is uncountable. You cannot say XThe Police have recovered several of the stolen properties; that could only have the absurd meaning that some farms or houses had been stolen!

Note 6 : Head, when used as the counting word for animals, is both singular and plural; that is, you cannot add -s to it. He owns 30 heads of cattle would mean that he only owned the actual heads, detached from the bodies. And notice also that cattle itself is always plural; the singular is one head of cattle or more often one cow (which will stand for either sex).

The word staff is peculiar. It is uncountable in the sense that you cannot talk about *a staff or *staffs if you mean individual employees; *All our staffs are well trained is wrong. You must use staff member(s) or member(s) of staff. Another peculiarity is that you can say many of the staff but not *many staff. You can say Our staff are all well trained or Please remind the staff that they should not leave the main gate unlocked. If it means the whole body of employees belonging to some organization, staff is an ordinary countable noun: The staffs of K.I.A. and the Institute of Adult Studies are planning a debate.

Note also the groups of very common words that are always plural:

trousers	bathers
pyjamas	scissors (and
shorts	several other
	similar tools,
	such as <u>pliers</u>)

You cannot buy *a trouser, or put on *a pyjama, or tear your *short. One of any of these things is a pair of....; two of them is two pairs of....; and so on (not *two trousers).

Foundation is a countable noun, but when it means the concrete base on which a building rests it is always plural; you pour the foundations of a building, not the *foundation.

Belongings, meaning possessions, is always plural.

And don't forget maize. It is such a common word here in Kenya that it is important to realize that anything like *The maize are growing well this season is wrong.

Many words have two or more different meanings, and in that case they are often countable in some meanings and uncountable in others. For example, water, when it means the substance H_2O is uncountable, but when it means a section of the ocean it is countable; you can speak of Kenya waters (the section of the ocean that belongs to us). If you encounter puzzling cases, the Advanced Learner's Dictionary of Current English will always settle the point. It marks nouns as either (C), countable, or (U), uncountable, in all cases where there could be doubt, including cases of multiple meanings.

EXERCISE A

Fill in the blank spaces.

1. We will use any _____ method we can find.
(good; best; most efficient)
2. _____ view _____ the urgency of the situation,
you should lose no time.
3. He is much too fond of _____ people. (dictate)
4. I answered _____ their letter immediately, but they
still haven't replied _____ mine.

EXERCISE B

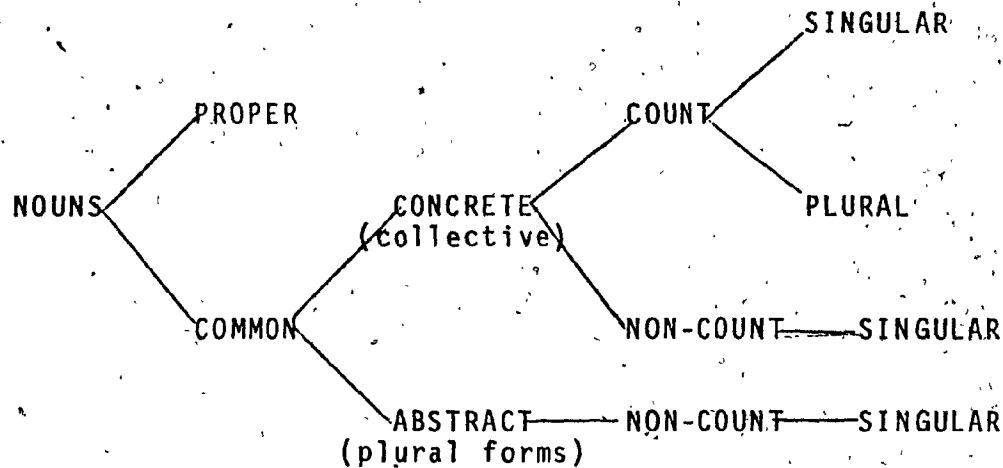
There is one error in each of the following sentences. Write them out correctly. Do not alter more than is absolutely necessary to correct the error; the alteration needed will almost always be quite small. Unnecessary alterations should be regarded as errors.

1. The scheme will entail a heavy outlay. Perhaps we could approach the Ministry in view of getting a 'special grant.
2. We were going to leave this scheme till next year, but the promise of such generous supports from our local M.P. has enabled us to start it at once.
3. It is discourteous to delay in replying a letter; even if it cannot be acted on at once, you should at least acknowledge that you have received it.
4. See if you can think of any best way of dealing with this problem.
5. The assistance we received at the beginning were not nearly enough to make it feasible to start on more than one scheme.
6. They haven't much initiative; they seem to expect someone to dictate them what to do.
7. The House has dealt with 17 separate legislations during its present sitting.

APPENDIX B

(PROGRAMMED TEXT)

Let's look at the noun tree again to summarize what we have learned about nouns so far:



gases or liquids
groups
raw materials
particles
abstract nouns

Although it is the way in which a noun behaves grammatically that determines whether it is countable or uncountable, there are many things that are uncountable because of their nature. You cannot count things like gases or liquids. It would sound strange to an English-speaking person if you tried to count the xairs in the classroom or the xinks in your pen! Things that occur in groups like wreckage or junk are uncountable. Things that occur in particles like dust, sand, sugar or flour are uncountable too. The names of raw material like zinc or lead and the abstract nouns like faith, hope, cooperation and forgiveness are also uncountable.

15. Name the types of uncountable nouns.

advice
bedding
underwear
hardware
baggage
slang
conduct
correspondence

There are many nouns which are uncountable. The most common and troublesome ones for Kenyans have been used as examples in this programme and in the exercises and tests which accompany it. If you are in doubt, The Advanced Learner's Dictionary lists C or U after nouns which are confusing. Here are a few which are often used incorrectly: advice, bedding, underwear, hardware, baggage, slang, conduct and correspondence.

16. List the common uncountable nouns which often cause Kenyans difficulty.
-

The main rule for English uncountable nouns is this:

NEVER USE UNCOUNTABLE NOUNS AS PLURALS

never use
uncountable
nouns as
plurals

Use the uncountables in the singular only. Here are some examples: My luggage is ready. Put the hardware on the shelf. Listen to the advice. Courage is an important quality.

17. What is the main rule for English uncountable nouns?
-

Let's summarize what we have learned:

1. Nouns are countable or uncountable depending upon the way they behave grammatically.
2. Uncountables include gases, liquids, particles, raw material, things in groups and abstract nouns.
3. The main rule for using uncountable nouns in English is this: never use the uncountable nouns as plurals.

Please do the following test to check your understanding of uncountable nouns. Look at the following pairs of sentences and choose the correct one in each pair.

1. a. I like to use the new slangs.
b. The new slang is interesting.
2. a. Please give me accommodation for the night.
b. Please give me an accommodation for the night.
3. a. All the ammunition can be used.
b. A number of ammunitions have been used.
4. a. The baggage is ready.
b. The baggage are ready.
5. a. I am searching for my correspondences because I want to answer them.
b. I am searching for my correspondence because I want to answer it.

Now check your answers on page 90. You will finish the programme depending on the way in which you scored in this test.

0 - 1 wrong: go to page 97.

2 wrong: go to page 95.

3 or more wrong: go to page 90.

The answers to the test on page 89 are as follows:
 1. b, 2. a, 3. a, 4. a, 5. b. Count the number you
 have wrong and finish the programme according to the
 instructions given on the bottom on page

Pole! You seem to have had a
 little trouble understanding the idea
 of uncountable nouns. Let's look at
 them again with some more examples.

Uncountable nouns can never have
~~-s~~ or ~~-es~~ added to them. In other
 words, they can never be made plural.
 Look at this incorrect sentence:

1. bedding
2. correct
3. two rounds of
4. hardware

~~X~~The four people I asked all gave me
quite different advices. Here the
 word advices is incorrect because it
 has a plural ending -s when it should
 be left as a singular. Advice is
 correct.

Now, try again. Find the mistakes
 in the following sentences and correct
 them. Some sentences may have no
 mistakes.

1. He rolled up his beddings.
2. My property is still safe.
3. He fired two ammunitions and
 the gun refused to work.
4. One sees the sign Hardwares
 on Biashara Street.

Uncountable nouns can never have the word a or an in front of them because that means that they can be counted. They can have the in front of them because the has no idea of number. Look at the following incorrect sentence:

1. no an
2. no a
3. correct
4. correct

~~X~~You should apply to the Ministry for an advice. The word an is incorrectly used in this sentence because advice is an uncountable noun. If we wished to make advice countable we could say "one bit of advice".

Now try the following exercise. Correct the mistakes in the following sentences.

1. When I want an advice I'll ask for it.
 2. Parliament passed a good legislation last week.
 3. I hope you will give our committee strong support.
 4. Leave the baggage inside the locker in the station.
-

Mass nouns or uncountable nouns can never have a number in front of them. This is the reason they are called uncountable. Look at this incorrect sentence: XThough most of what he said was incorrect, I got one good advice from him. This sentence is incorrect because advice is uncountable. The writer has tried to make it countable by using it with the word one. If we wanted to get the idea of number across, we would have to say one good bit of advice. The word bit is countable and it is correct to use a number with it.

Now try the following sentences.

1. use letters
2. aid or one
3. lorry; pick up, means of transport
4. four pairs or new underwear
5. vehicles or 3 pieces of

1. I sent out two correspondences yesterday.
2. Please give me just one aid.
3. If I had one transport, I could move to my new house.
4. He bought four new underwears yesterday.
5. There were three machineries left in the motor pool.

Uncountable nouns cannot have plural words like these in front of them:

many	both	either
several	few	neither
a number of	each	another
various	every	

These words can be used:

- | | | |
|--------------------|----------------|-----------------|
| 1. all help | all | a great deal of |
| 2. much evidence | some | a bit of |
| 3. another type of | a lot of | a little |
| 4. little | a good deal of | |
| 5. all the game is | | |

Look at the following incorrect sentence: XWe are trying to follow the various advices we have been given. This is incorrect because advice is an uncountable noun and the plural word various cannot be used with it.

Now try the following sentences and correct the mistakes.

1. Every help will be welcomed.
2. Many evidence was given in the court.
3. Another bad conduct on the prisoner's part was to refuse to work.
4. All a baby needs is few clothing in the hot months.
5. Those game in the park are interesting for tourists to see.

Uncountable nouns can never be followed by a plural verb. One of the most important ideas in English is the idea of agreement between the subject of a sentence and the verb which follows it. If the subject is an uncountable noun, then the verb that follows it must be singular even though it might "sound better" if the verb were plural. Look at the following incorrect sentence: *We are grateful for your advice which are going to be useful. The sentence should read advice which is going to be useful. Advice is uncountable and the verb that follows it should be singular.

1. is
2. is
3. is
4. is
5. has

Try the following sentences.
Correct the errors.

1. The new slang are very interesting.
2. The furniture are wanted by tomorrow afternoon.
3. The game are going to the next grazing grounds.
4. The interest are up to six percent.
5. The damage have been done to the building.

Uncountable nouns can never be referred to by plural pronouns. Look at the following incorrect sentence: *Thank you for your good advice; we will try to follow them. Here the word them is wrong because it is a plural pronoun.

Try the following exercises.
Make the necessary corrections.

1. it
2. it
3. it
4. it

1. I am searching for my correspondence because I want to answer them.
2. They want their property; have we still got them?
3. If we are forced to take the disciplinary action, they will be severe.
4. I want no part of your abuse; I will just ignore them.

There are six mini-rules that must be kept in mind when using uncountable nouns. We'll look at each of these in turn with examples. You will soon see that they are all ways of saying what we have already said about using uncountable nouns: Never use uncountable nouns as plural.

1. Never add -s or -es to them.

plural

(This is one of the mistakes I hear Kenyans making most frequently with uncountable nouns. People will add -s or -es to uncountable nouns and come up with mistakes like Xunderwears, Xbaggages, Xinformations, Xadvices and so on. I'm sure you have often seen this incorrect sign displayed: XHardwares. The correct way of using all these words is to say: underwear, baggage, information, advice, hardware.)

18. Never make uncountable nouns

2. Never use a or an in front of them.

The following are all incorrect:
Xan advice, Xa damage, Xan instruction.

b

19. Choose the correct sentence:

- a. I asked my boss for an advice.
- b. I asked my boss for advice.

3. Never use any number in front of them.

The following are all incorrect:
Xone correspondence, Xone legislation, Xtwo properties. One bit of advice would be a way of using a number with an uncountable noun.

b

20. Choose the correct sentence:

- a. Just one help is all I need.
 - b. Help is all I need.
-

4. Never use any plural in front of them.

The following are all incorrect:
 Xeach help, Xvarious aid, Xanother evidence. The correct way of using these words would be a little help, some aid, another bit of evidence.

21. Choose the correct sentence:

- a. There are various accommodations available.
 b. Some accommodation is available.

5. Uncountable nouns can never be followed by a plural verb.

The following are all incorrect:
 XThe furniture are ready. XThe game are fun to watch, XThe luggage are ready. The correct way of writing these sentences would be: The furniture is ready, The game is fun to watch, The luggage is ready.

22. Choose the correct sentence:

- a. Accommodation is available.
 b. Accommodation are available.

6. Never refer to them with plural pronouns.

The following sentence is incorrect:
 XWe will take your advice and try to follow them. The correct way of writing this sentence would be: We will take your advice and try to follow it.

23. Choose the correct sentence:

- a. My hair are long; will you cut them?
 b. My hair is long; will you cut it?

Here are six mini-rules that must be kept in mind when using uncountable nouns:

1. Never add -s or -es to them.
2. Never use any number in front of them.
3. Never use a or an in front of them.
4. Never use any plural in front of them.
5. Never follow them with plural verbs.
6. Never refer to them with plural pronouns.

As you can see, these mini-rules all still mean:

NEVER USE UNCOUNTABLE NOUNS AS PLURALS

End of Programme Review

Check your understanding of the programme by answering the following questions.

1. Make a list of the nouns in the following sentence:

The first shipment of vaccine arrived on schedule yesterday in Nairobi. The event did not bring any relief to the waiting crowds or the health officials.

shipment c
vaccine c
schedule c
Nairobi P
event c
relief a
crowds cl
officials c

2. Identify each noun from Sentence 1 according to type. Use P for proper noun, c for count noun, cl for collective and A for abstract.

3. Correct the following sentences. Some sentences may be correct.

support
three pieces
of hardware
much
was
it

- a. We haven't received all the supports we need.
- b. I want an ammunition from you.
- c. I'll need three hardwares.
- d. Many game could be seen in the park.
- e. The ammunition were exploding rapidly.
- f. Thank you for the information; we will put them to good use.

APPENDIX C

(PRETEST)

PRETEST

Dear Reader,

Do not worry if you don't know all the answers to this test. I need to know what you know now in order to determine whether or not my materials have been helpful.

A. List of nouns

Directions: Look at the following sentences and list all the nouns they contain on the answer sheet.

A trust is a valuable and flexible tool used in law. Unfortunately, for many reasons, it is probably underutilized. Some people are unfamiliar and uncomfortable with the concept of a trust. These people don't understand how a trust operates and therefore have incorrect ideas.

B. Types of nouns

Directions: Arrange these nouns according to their type under the headings given on the answer sheet.

Nouns: oxygen, crowd, grace, mob, Kioko, chair, flour, beauty, house, Mwita

C. Types of nouns

Directions: Rearrange the non-count nouns according to the headings given on the answer sheet. You may not need to use all the nouns.

D. List of correct or incorrect sentences

Directions: Put the letter C by the number of the sentences which are correct. Put the letter I by the number of the sentences which are incorrect.

1. These new slangs are hard to understand.
2. I'd like an advice from you.
3. Those two luggages got scratched.
4. I'll try to stay out of harm's way.
5. He combed his hair after they were cut.
6. Send me the baggage which are left.
7. Those furniture are going to be moved tomorrow.
8. He bought new underwear at a sale.
9. Change the bedding once a week.
10. One round of ammunition has been used.

APPENDIX D

(POSTTEST)

POSTTEST

Dear Reader,

Thank you very much for helping to test my materials. If they have been successful, this final test should be fairly easy to do. When you have finished, please return the answer sheet and the post test to the invigilator. Then you are free to go.

A. List of nouns

Directions: Look at the following sentences and list all the nouns they contain on the answer sheet.

A trust is quite simple. A trust is created when one person transfers the title of his property to another person to hold and administer for the benefit of other persons, under a set of written instructions.

B. Types of nouns

Directions: Arrange these nouns according to their type under the headings given on the answer sheet.

Nouns: Kamau, courage, orange, dust, Katanu, clock, committee, joy, class, zinc

C. Types of nouns

Directions: Rearrange the non-count nouns from above according to the headings given on the answer sheet. You may not need to use all the nouns.

D. List of correct or incorrect sentences

Directions: Put the letter C next to the number of the sentences which are correct. Put the letter I next to the number of the sentences which are incorrect.

1. Put all the luggage into the car.
2. He settled down to his correspondence and soon got them in order.
3. The wild game are certainly exciting to watch.
4. If you want new legislation, you will have to fight for it.
5. The ammunition are going to be used in the shooting match tomorrow.
6. Do you see the baggage? Please put them in the rack.
7. The underwear were brightly coloured.
8. You can get your hardwares in this shop.
9. Those actions were uncalled for.
10. The new machinery is in the shop.

APPENDIX E

(ANSWER SHEET)

ANSWER SHEET

Dear Reader,

Thank you very much for participating in this experiment. With your cooperation we will be able to test materials for teaching English in Kenya. Please feel at ease and simply do the best you can; we are testing the materials, not you!

Sincerely,
Janis Mwosa

Here's what to do:

1. Part I: Fill in the answer sheet with information about yourself.
2. Part II: Do the Pretest and put your answers in the space provided.
3. Part III: Read the materials you have been given (you will not have the same materials) and do the exercises. Write the answers to the exercises in Part III.
4. Part IV: When you have finished the materials, give your booklet to the invigilator and get the Posttest from him. Do the Posttest and put your answers in the space provided in Part IV.

PART I: BACKGROUND INFORMATION

Name _____ Age _____ Sex _____

Mother tongue _____ Other languages _____

_____ Highest certificate held _____

Job classification _____ Place of work _____

City _____ Number of years at present job _____

PART II: PRETEST

A. List of nouns

B. Types of nouns

Proper

Count

Non-count

C. Collective

Abstract