THE ROLE OF CLASSROOM INPUT IN THE ACQUISITION OF WH-WORDS

BY

KASIRE BILLY, G. L.

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DECLARATION

This thesis is my original work and has not been submitted for the award of a degree in any other University. All the sources have been acknowledged.

Signed:---------- Date: 28-8-2001

Kasire Billy, G.L.

Supervisors:

Dr. Kimani Njoroge

Dr. Catherine Kitetu

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ABSTRACT

The task of this research focuses on how linguistic input can best be manipulated in the classroom environment to enhance the acquisition of Wh-expressions. The main objectives are to investigate the role of three second language acquisition pedagogic approaches, namely, form-focused instruction, meaning focused instruction and increased frequency of the target language structures. Such a study is plausible because it provides additional insights on what has been researched about the role of formal instruction in the acquisition of a second language. Due to the fact that English is the medium of instruction as well as the official language in Kenya, the necessity of establishing various approaches that can foster its fast learning is paramount, and thus a stimulus to this study. An experimental design following a test and re-test procedure, before and after instruction was adopted to achieve the above objectives. Two groups of learners, the treatment group and the control group, drawn from two primary six classes, were involved. In-group and out-group scores were computed and compared. The Pearson's product moment correlation coefficient technique and the t-test analysis were applied to determine the statistical significance of the differences in the test results. From the analysis of the results, it was concluded that form-focused instruction enables the learners to construct grammatically correct sentences using the target structures. On the other hand, meaning-focused instruction trains the learners to organise the sentences into logical discourse. Furthermore, the frequency with which the target structures occur in the classroom discourse during instruction plays a positive role in the learners' application of these structures. These findings have important implications as they are related to pedagogy and the acquisition of a second language in a classroom environment.

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ABBREVIATIONS AND SYMBOLS

C.P.E.	Certificate of Primary Education
C-T	Class communicating to teacher
f	Frequency
f.x.	Frequency multiplied by raw score
H_o	Null hypothesis
H_1	Alternative hypothesis
K.C.P.E.	Kenya Certificate of Primary Education
K.C.S.E.	Kenya Certificate of Secondary Education
L_2	Language two (second language)
n_1 or n_2	Size of a specified sample
P-P	Pupil communicating to pupil
PPMC	Pearson's product moment correlation coefficient
P-T	Pupil communicating to teacher
SD	Standard deviation
SL	Second language
T-C	Teacher communicating to class
TL	Target language
T-P	Teacher communicating to pupil
TPR	Total Physical Response
x	Raw score
x_1 or x_2	Mean of specified group of subjects
x_m	Mid point of the raw scores
8.4.4.	An educational structure of eight years in primary school, four years in secondary school and four years at the University.

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DEDICATION

TO

i) My wife Praxides and children
Sylvia, Nancy, Steve and Judith
who endured these many years
as sacrificial lambs for atonement.

May the fruits
of this hard gotten education
be a future balm to the painful wounds
inflicted into your hearts during my struggle.

ii) My beloved mother
who unduly prompted my conscience
to exploit my academic endowments
in memory of her father, my grandfather.

iii) The spirit of my father
whose death bed will and wish
was my advancement to the peak of the academic
mountain.

Definition of terms

Competence, performance and proficiency

In this study, competence was used to refer to the knowledge a learner has about the rules of language. Performance referred to the learners' actual use of their knowledge of the target language in producing and understanding sentences. Proficiency referred to the degree of skill with which the learners could use the TL, specifically the wh-words, to speak and write sentences appropriately.

Communicative competence

In this study, this term was used to refer to the ability of the learner to begin and end conversations using the target words appropriately.

Input and intake

Input refers to the language a learner hears or reads. It may be in the form of individual sounds, lexical items, sentences or stress and intonation patterns. Intake was used to refer to the language a learner attends to and finally acquires.

Wh-words

Wh-words are categorized into three:

i) relative pronouns

ii) interrogative pronouns.

iii) compound relative pronouns.

Words which fall under (i) and (ii) are what, where, when, which, who, why, how, whose and whom. Those included in category (iii) are whatever, wherever, whenever, whichever, whoever and however.

iii) compound relative pronouns.

Words which fall under (i) and (ii) are what, where, when, which, who, why, how, whose and whom. Those included in category (iii) are whatever, wherever, whenever, whichever, whoever and however.

Though 'how' does not begin with wh-, it is included because it exhibits similar functional characteristics like the others particularly as an operator in interrogatives. On the other hand words like 'while' and 'whether' which begin with wh-are excluded under the category of wh-words because whereas they serve as subordinating conjunctions like the other wh-words, they canot function as opeators in interrogatives.

Learning versus acquisition

These two terms were used interchangeably in this study to refer to the process by which learners develop proficiency in a second language with specific attention to wh-words.

Form-focused instruction

Instruction in which the learner is engaged in activities that have been specially prepared to teach specific grammatical features, e.g. Wh-expressions.

Meaning-focused instruction

Instruction in which classroom activities are provided to encourage the learners to communicate using whatever resources they have at their disposal, e.g. Conversational role playing using wh-structures (see such a converstation in appendix v(b).

Linguistic data

The language which a learner is exposed to.

CHAPTER ONE

1.0. INTRODUCTION

1.1. Prelude

This research was conducted with the intention of investigating the role of input in the learning of English in two standard six classrooms in an area where English is not widely used in the community. Classroom input is a prerequisite to the learning of English as a second language (shortened as SL or L2). This introductory chapter outlines the general framework of our research, which covers the main conceptual constructs and the objectives. In the second chapter, the findings of scholars from both within and outside Kenya are reviewed. The comparisons and contrasts made are based on the objectives outlined in the first chapter. The third chapter covers the methodology of the research. The fourth chapter gives an analysis and interpretation of the results derived from the fieldwork. The revelations from the data analysis are that form-focused instruction had a positive effect on the learners' improved usage of wh-words in sentences while meaning-focused instruction enhanced the learners' communicative competence using the target words. An attempt is also made to draw a distinction between these two models of instruction. Also in chapter four, statistical evidence is presented to establish that increased frequency of wh-words played a role in enhancing the learners' proficiency in the application of these words.

1.2. Background to the study

The background to this study was the growing interest that has attracted linguists, language teachers, social and psychological scientists about language. Specifically, the concern of the research was to establish how classroom input can be manipulated to enable a language learner apply the target language appropriately.

A summary made by Allwright, (1988) on observation in the language classroom indicates that as from the 1960's, attention turned away from aptitude, which had been an important focus of attention in the previous decade. The teaching based on language aptitude maintained that each individual possesses a stable and permanent ability whether their language learning potential is the product of innate abilities and that the result of their previous learning exprience is immaterial. The best bet for effectiveness was to be found in the work of psychologists and linguists who had been responsible for the success of wartime military language programmes. Their work has been grounded in behaviourism that underlay the new effort to produce language-teaching materials for schools and colleges. The behaviourists believe that there is no difference between the way one learns a language and the way one learns to do any other skill like learning to type, ride a bicycle among other activities.

Later, the label audiolingualism rather than behaviourism was applied because the latter was more descriptive as its emphasis was on listening and speaking rather than reading and writing. Much of what was done at that time was a comparison of methods - specifically what was referred to as the 'traditional' method which promoted the skills of reading and writing and the audiolingual method. However, after two years of teaching, the results were unable to demonstrate the superiority of the audiolingual method over the traditional method. Such a comparison of language teaching methods was the work of Keatings (1963), Scherer and Wertheimer (1964), the Pennsylvania project team (1970) among others. In this quest for the search of the best methods, concepts such as structuralism and mentalism also cropped up. The method used in structuralism is the slot and filler language drills and substitution

tables. According to the mentalists, what is needed in language teaching is adequate exposure to the target language: That everybody learns a language not because they are subjected to a similar conditioning process but because they possess an inborn capacity which permits them to acquire a language as a normal maturational process.

In the early 1970's, different alternatives of conducting research on the learning of a second language evolved. The first of these was Fanselow's (1977) Focus (Foci for observing communications used in settings) system which according to him, was meant to 'help us examine the effects different communication has on learning'. The schools of thought at this time concentrated on observational data as the core status for second language acquisition research. In this group were Gaies (1977), Allwright (1984), Long et, al (1983) and Seliger (1986) among others.

Since the mid-seventies, observations in the language classroom have widened in scope. For instance, Schumman (1977) introduced diary studies in which variables that had previously been neglected were included. Bailey's (1983) review of such studies found 'competitiveness' and 'anxiety' to be prominent in learners' retrospective accounts of their experiences. Though opponents of diary studies claim that such variables cannot be pursued easily to ascertain their effect on language achievement, a report in a newsletter on dialogue journal writing published by the centre of applied linguistics, Washington, lauds this as a positive move towards modern research.

In general, there has been a counter-revolution among langauge researchers about the subjectivity and objectivity of classroom observation. Those in the latter group advocate that research in the classroom should apply techniques that are scientifically

measurable, that is the results of such observations should be statistically proved as significant. Consequently, aspects of both teacher behaviour and learner behaviour should be incorporated into studies in second language acquisition and these behaviours should be handled in such a way that they are quantifiable.

Following Krashen's (1976, 1977, 1981 and 1987) concept of comprehensible input, more debates and research on the role of input in second language acquisition were sparked off. The controversy apparent in these debates was whether acquisition is a phenomenon of naturalistic environments only or of classroom environments only or of both. Corder (1978), Hatch (1978) and Long and Sato (1984) among others either supported the input hypothesis as it was or made some modifications (see a more detailed discussion in chapter 2). For instance, the notion of the frequency of occurrence of the target language features and negotiated interaction of the teacher and the learners was later incorporated in the input hypothesis by scholars such as Long (1981) and Krashen (1983 and 1987). These notions emphasize the part played by teacher-pupil and pupil-pupil exchanges in reinforcing acquisition. Hence, our study investigated whether increased frequency of wh-words and increased teacher-pupil and pupil-pupil interaction facilitate language learning. The four claims that emanated from Long's (1983) review of various studies as quoted in Ellis (1990) also provided a strong background to this study. Long (ibid) maintains that instruction is beneficial:

(a) for children as well as adults.

(b) for intermediate and advanced learners.

(c) irrespective of whether acquisition was measured by discrete point test or integrated test.

(d) in acquisition rich as well as acquisition poor environments.

Locally, the Kenya Institute of Education and the Inspectorate as curriculum development units of the Ministry of Education, Science and Technology and scholars in the universities have also contributed to researches on improving the teaching of English. A few of them related to this study are reviewed in section 2.6 of this thesis.

1.3. Statement of the problem

The main task of the research was to investigate whether form-focused and meaning-focused instruction on wh-words as used in sentences could improve the learners' proficiency in the use of these words. To supplement these two methods of instruction, the frequency with which the target words were used in the classroom by the teacher and the learners during instruction and its effect on proficiency was also investigated. The major interest was in a situation where the learners are neither native speakers of the TL nor is the TL widely used in the community.

1.4. Objectives of the study

The following were the main objectives of the research:

(a) To investigate whether form-focused instruction on wh-words facilitates the learners' proficiency in these words.

(b) To investigate whether meaning-focused instruction on wh-words facilitates the learners' communicative competence using these words.

(c) To establish whether increased frequency of wh-words in the classroom input improves the learners' proficiency in these words.

1.5. Hypotheses that were tested

Hypothesis testing studies begin from specific hypotheses about the learners' language knowledge. The following hypotheses were drawn from conceptual frameworks in other contexts. (see discussion in section 1.9).

H_1: Form focused instruction facilitates the learners' proficiency in using wh-words in sentences.

H_o: Form-focused instruction does not facilitate the learners' proficiency in using wh-words in sentences.

H_1: Meaning-focused instruction on wh-words facilitates the learners' communicative competence using these words.

H_o: Meaning-focused instruction on wh-words does not facilitate the learners communicative competence using these words.

H_1: Frequent use of wh-words during instruction facilitates the learners' proficiency in these words.

H_o: Frequent use of wh-words during instruction does not facilitate the learners' proficiency in using these words.

1.6. Scope of the study

This study was confined to second language acquisition within the classroom environment. Though inquiry was made about the learners' linguistic background outside the classroom, it was for the purpose of collecting evidence to ensure the homogeneity of the subjects (see appendix iv).

Research in the classroom environment encompasses aspects such as the role of instruction, the amount of teacher-talk, learner participation and learner characteristics

which include attitudes, personality, learner strategies and aptitude. Our study drew conclusions from only the effect of instruction on the accuracy of production of wh-words. The mode of instruction involved increasing the frequency of wh-words in the teacher's discourse and encouraging the learners to practise using wh-expressions. The words covered in this study were:

what, when, where, which, who, how, why, whose, whom, whatever,, whenever, wherever, whichever, whoever, however.

Focus was on wh-words because, firstly, these words are broadly used in primary school textbooks written in English and by teachers during instruction especially in asking questions. While these words appear to be common and easy to use, a pre-research survey revealed that learners in the middle classes of primary level quite often confuse the correct contexts in which each word can fit. Secondly, among the many studies reviewed, only Brown (1973) and Ellis (1990) conducted research in which a minimal number of wh-expressions were considered.

Four tests were administered to evaluate the learners' performance in the use of these words. An interaction analysis was also carried out to gauge the frequency of the wh-words in the classroom discourse (refer to appendix iii for a sample). Finally, written conversations were designed and printed to supplement the teacher's instructional task (refer to appendix v).

1.7. Limitations of the study

One of the limitations of this study was that only a small fraction of clause types was considered. Given the short timespan and the resources available, only wh-words were considered.

Secondly, not all features of classroom interaction were observed. Special attention was given to the teacher's discourse structure (teacher-talk), particularly the salient use of wh-words. Details of the effects of wh-expressions on discourse structure was ignored because the main objective was not discourse analysis but how the teacher can act as a model and initiator in guiding the learners to acquire the target language structures.

Finally, factors such as individual learner differences in terms of attitudes, personality, learning styles and aptitude were not focused upon though they were existent. It was assumed that the positive effects of instruction would be reflected at different levels in individual learners. To motivate the learners to use the target words appropriately, tests and written conversations which were designed were approximated to be within the learners' level of understanding.

1.8. Justification

The importance of replicating or applying second language acquisition research findings has been underscored by Tarone et al (1976). They also emphasize some questions which language teachers wish to be answered by researchers. Those relevant to this study are:

i) Whether the teacher should focus on points of grammar in which concentration is on the rules of construction of sentences and reading and writing or communication, in which concentration is on relaying the message.

ii) How the teacher can adapt curriculum materials in accordance with different needs of the students.

As discussed in section 2, some of the tenets of the input hypothesis attempt to offer answers to these questions.

Secondly, both Tarone et al (1976) and Ellis (1990) recognize the direct help research conducted in the classroom has to the language teacher. Given the role played by English in Kenya as the medium of instruction as well as the official language, it is crucial to explore the best ways of facilitating its acquisition.

At the moment there are not many studies that have been conducted in Kenya on the role of classroom input in second language acquisition. Furthermore, not many of the studies conducted on the frequency hypothesis of wh-words involve direct classroom instruction. The findings of this study are, therefore, important to English teachers and learners. The results are expected to provide insights into how input can be manipulated to facilitate language learning.

1.9. Conceptual framework

The conceptual framework in this study was based on three hypotheses: the input hypothesis, the frequency hypothesis and the interaction hypothesis.

The input hypothesis is one of the five hypotheses of Krashen's (1982) monitor model. He uses the variable 'i' to refer to the learner's current level of competence and 'I+1' to the next level achieved by the learner. To move from stage 'i' to stage 'i+1', the learner should understand input that contains 'i+1'. 'Understand' in this context implies that the learner is focused on meaning rather than the forms of the message. Krashen (1987) maintains that there has to be enough input, communication has to be successful and input has to be understood if acquisition has to take place. Krashen (ibid) reckons that input is made comprehensible because of the help provided by the context. Contextual information may consist of extralinguistic information, the learner's knowledge of the world and the learner's previous linguistic competence. Simplified input can be made available to the learner through one-way or two-way interaction. Examples of the former include listening to a speech or a lecture, watching television and reading. Two-way interaction occurs in conversations.

The term 'interaction hypothesis' was coined by Long (1981) to supplement the notion of comprehensible input. Interaction consists of ways of negotiating comprehensibility and meaning. It involves conversation where one interlocutor speaks, receives feedback from the counterpart and asks questions where there is no understanding. An explanation will then follow, thus providing comprehensible input that will assist acquisition.

Interaction underscores the importance of two-way communication. Researchers such as Hatch (1978), Widdowson (1978), Ellis (1980), Allwright (1984) and Chaudron

(1988) have also underscored the significance of interaction. These are summarized as follows:

(a) Through interaction the learner can decompose the target structures and derive meaning from classroom events.

(b) Interaction gives learners the opportunities to incorporate TL structures into their speech.

(c) The meaningfulness for learners of classroom events of any kind will depend on the extent to which communication has been jointly constructed by the teachers and learners.

While our study appreciated the findings on the role of interaction, there were precautions that were borne in mind. First, learner participation may be inhibited by affective factors such as personality. It is not therefore a guarantee that an introvert learner is a poor acquirer. A learner may as well gain from the teacher's input and the responses from the other learners. Secondly, prescribed syllabuses may not allow language teachers to design enough communicative activities which are time consuming as most teachers would want to complete the syllabus within the stipulated time. Lastly, interaction features are quite diverse and cannot be covered in a single research. Our study confined the application of interaction to teacher-pupil and pupil-pupil exchanges using wh-expressions in declaratives and interrogatives.

The last concept which our study investigated was that of the frequency of input. Frequency as a hypothesis to be investigated was proposed by Hatch (1974) and later reviewed by Pica (1983) and Ellis (1985 and 1990). The frequency hypothesis states that the order and rate of a learner's acquisition of L2 grammatical features is

determined by the frequency of those features in the input: more frequent features are acquired before the less frequent. That input simplification and interactional adjustments found in teacher-talk are important because they affect the frequency with which specific linguistic features occur in the input at different levels of the learner's development. The notions of comprehensible input, interaction and frequency are therefore closely related. A more detailed discussion of the three concepts follows in the next chapter.

CHAPTER TWO

2.0. REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter considers some of the relevant research findings about the linguistic data available to the learner and how it can be manipulated to foster second language acquisition in the classroom. What has been established by researchers on the recommended approaches to the study of classroom instruction is reviewed. The chapter is divided into the following six sections in which concepts and group studies are discussed:

(a) comprehensible input

(b) frequency of the target language features.

(c) interaction in the classroom.

(d) the role of instruction

(e) local group studies.

(f) the triangulation approach.

2.2. Comprehensible input

In advancing the concept of comprehensible input, Krashen (1987) quotes research findings from both first language and second language acquisition. Such a research is that by Clark and Clark (1977) on first language acquisition, who established that native speakers modify their speech to first language acquirers in the following ways: Firstly, they use simpler forms of the language to make themselves understood by the child. Secondly, caretaker speech unlike adult-adult speech, is roughly tuned to the child's current level of linguistic competence and not finely tuned. This implies that caretaker speech is not precisely adjusted to the level of each child as it is impossible

to determine such a level with accuracy. Thus caretaker speech tends to get more complex as the child progresses in speech. This is supported by Gaies (1977), Freed (1980) and Krashen (1980) who established that foreigner-talk (speech directed to a non-native speaker by a native-speaker) and teacher-talk are roughly tuned to the level of the learner.

Hatch (1979) too, established that comprehension can be aided by first, a slower rate of speech and articulation; secondly by more use of high frequency vocabulary with less slang and idioms and finally by syntactic simplification. Consequently, Krashen (1987) views the classroom as a major source of comprehensible input for second language learners. He reckons that interlocutors in the informal setting are not always ready to supply comprehensible input to the older second language learner.

The implication the above findings had for our study was that pedagogy should be considered in stages. Learners at a lower stage, like standard six, are at a preliminary developmental stage compared to learners at a higher stage such as those in the fourth form. The linguistic input for the former group of learners should, therefore, be less complex. The teacher is expected to adjust and use simpler language. In fact, the major methodological offshoot of Krashen's work is manifested in the natural approach jointly developed with Terell (1988). Acting on many claims that Asher (1977) made about total physical response (TPR), Krashen and Terrell (1988) felt that learners should be as relaxed as possible in the classroom, and that a great deal of communication and 'acquisition' should take place as opposed to analysis.
Asher (ibid) notes in several of his papers that students are generally ready to start production in the target language after about ten hours of TPR input. Informal

language research, according to Asher (1977), claims that the 'silent period' may last as long as six months. This is because possibly the child is exposed to incomprehensible input. Thus, the main advantage of formal instruction may be its potential to provide comprehensible input at the early stages, bringing the acquirer to the point where he or she can begin to take advantage of the natural environment. The natural approach by Terrell and Krashen (1988) advocates the use of TPR activities at the beginning level of learning when comprehensible input is essential for triggering acquisition. Such activities include giving simple commands to learners and having them act out what the teacher says, asking questions based on physical characteristics and clothing of students in the class and use of pictures cut from magazines.

Three important observations need to be made about this research in relation to the findings of the scholars discussed above. First, the requirement that the teacher roughly tunes his language to the learners' linguistic level for the purpose of comprehensibility is plausible. For instance, on several occasions, the teachers who were conducting the lessons during the research had to paraphrase some sentences to enable the learners to understand the meanings portrayed when using the target words. Furthermore, sentences which depicted events within the learners' daily experiences tended to be more receptive to the learners than those that dealt with abstract ideas. Allowing learners to be relaxed also made most of them willing to participate in speaking using the target words. This occurred especially when the FM microphone was introduced and the learners given the freedom to use it.

Although the input hypothesis has been subjected to theoretical criticisms by Gregg (1984), Faerch and Kasper (1986), McLaughlin (1987) Ellis (1990) among others, it still does not merit being rejected in totality the way Gregg proposes. McLaughlin (1987), for instance, points out that what is required is gathering more empirical evidence on the input hypothesis to reinforce the claims made about it. A discussion of some of the strong criticisms labelled against the input hypothesis will reveal that most of its tenets are provocative enough to foster the need for more research than merely being rejected.

One of the criticisms correctly posited by Gregg (ibid) is that the 'i+1' variable is ambiguous. That is, it refers to both the structure to be acquired and the next level of competence a learner achieves. However this is not a strong argument to nullify the whole hypothesis or the 'i' and 'i+1' principle. If 'i' is treated as the learner's current level of competence and 'i+1' as the next level at which the target structures have been acquired, the paradox is solved. Consequently, in this study, the 'i' and 'i+1' stages are treated as the learner's current level of competence and the learner's next stage of competence after instruction respectively.

Gregg (ibid) also points out that it is not possible to acquire a morpheme such as third person -s through extralinguistic knowledge. While this is true for this morpheme and possibly several others, Krashen's (ibid) observation that extralinguistic features have a role to play in language acquisition cannot be totally dismissed. For instance, lexical verbs, specifically those which show the action of the subject such as eating, beating, digging e.t.c. can be made more comprehensible to the learners by demonstrating the action implied.

A controversial distinction made by Krashen (1985) in his input hypothesis is that between learning and acquisition. This in effect made him reject the notion that formal instruction is a causative variable to acquisition. To him, formal instruction results into learning as opposed to acquisition. The anti-input hypothesis theorists prefer to dismiss the input hypothesis on the grounds that by Krashen (ibid) hypothesizing so, he rejects the role of instruction in enhancing a learner's 'knowledge' of the target language. The details of the distinction between these terms are beyond the scope of this study. In consequence, the two terms are used interchangeably as defined on page xv. That a learner has learnt to use or acquired the target structures means that the learner has moved from stage 'i' to 'i+1'.

One other criticism by the anti-input hypothesis theorists that cannot go unchallenged is that the relationship between comprehensible input and acquisition is not clearly spelt out: and that it is not easy to distinguish comprehensible and incomprehensible input amongst learners of mixed ability. However, again this claim does not nullify the strong points that can be drawn from this hypothesis. As pointed out in section 2.4. of this chapter, classroom instruction can make use of comprehension checks, confirmation checks, clarification requests to monitor the comprehensibility of the input. Interaction where the teacher asks the learners to answer questions or repeat certain language structures also plays a role in measuring the comprehensibility of the material being presented.

Comprehension checks, confirmation checks and clarification requests assist in creating rapport between the teacher and the learners in the classroom environment. That is why the interaction hypothesis supplements the input hypothesis. The input

hypothesis is positioned as the cog upon which the other two hypotheses revolve. A statement of great value for language pedagogy posited by Krashen (1987) and which constitutes one of the main principles of the input hypothesis is that for successful classroom acquisition, learners require access to message oriented communication that they can understand.

It was therefore the contention when conducting this research that classroom input via instruction as posited in the input hypothesis has the potential of facilitating a learner's language ability in any target language structures (the wh-words as used in sentences included) to improve from stage 'i' to 'i+1' . Secondly, the notion of comprehensibility of input is quite crucial to language acquisition. It is thus logical to hypothesize that a learner will find it difficult to attend to and proficiently use language structures that are incomprehensible to him. The incorporation of the idea of classroom interaction into the input hypothesis gives it a strong dimension as far as pedagogy is concerned. This is discussed in detail in section 2.4. From an analysis of the arguments, what seems to have sparked controversies about the input hypothesis is the need for more empirical evidence that can assist in answering questions such as:

i) How best can linguistic data be manipulated in the classroom environment to foster learners' proficiency as fast as may be required?

ii) How best can interaction between the teacher and the learners and among the learners themselves be managed to ensure that there is comprehensibility that facilitates acquisition?

iii) What criteria could be used to confidently claim that a learner has moved from stage 'i' to 'i+1'?

2.3. Frequency of the target language features

After reviewing studies related to the linguistic input in both first and second language acquisition, Krashen (ibid) underscores the importance of the target features in the input. He says:

> For acquisition to occur, acquirers need to notice a difference between their current level of competence, 'i', and the new structure or form presented by either the input or the creative construction system. If the comparison of 'i' and 'i +1' shows a gap, the form becomes a candidate for acquisition. Whether it actually survives depends on whether it turns out again in the input. If it does turn out with some minimum frequency, it can be confirmed and acquired. If it does not turn up again, it is a transitional form and will be eventually discarded..... (The underlining is mine)
> (Krashen: 1983, page 139)

Terrell et al (1980) advance a similar argument. They established that learners of Spanish as a second language were able to use interrogatives correctly in their speech because the classroom input they considered was rich in interrogatives. In their study, no direct instruction of interrogatives was conducted. Such a view that the salience of structures in the input results from their frequent occurance is supported by Klein (1986). Empirical evidence for the frequency hypothesis reviewed by Ellis (1990) can be drawn from studies conducted by Brown (1973), Newmark (1975) and Hamayan and Tucker (1980). In his study, Brown (ibid) ascertained that very high frequency of two questions, "What's that?" and "What are you doing?" in the parents' input facilitated the acquisition of these questions by their two children in comparison to other question types. Newmark's (ibid) study is more directly linked to the task of this research. He sought to investigate whether the frequency with which linguistic data was available to learners in the classroom environment could result in proficiency. Both instruction, reading, solving communicative tasks and interaction with native-speaker peers were incorporated into the learning process. The whole

programme totalled to twelve hours of frequent exposure to the target linguistic data per week for sixty weeks. The results as measured by the Modern Language Association (MLA) cooperative foreign language reading test scores and norms showed that after the sixty weeks, 98% of the learners had achieved native-like proficiency. Similar results about the positive effect of frequency of input on improved performance are reported by Hamayan and Tucker (ibid).

Studies by Long and Sato (1983), Hoefnagel-Hohle (1983) and Lightbown (1985) quoted in Ellis (1990) found no significant relationship between the frequency of linguistic items in the input and improved performance. This is due to the fact these studies were based on the morpheme order of acquisition among learners of different levels unlike the studies discussed earlier which were based on the effect of input in an instructional setting.

A major weakness of the frequency hypothesis pointed out by Ellis (1990) is that it draws heavily on the idea of morpheme order which has its own controversies. Our study is among the few that are a break-away from 'the natural order of acquisition' studies to an instructional approach in investigating the notion of frequency.

In the instructional approach, wh-words were exposed to learners through form-focused and meaning-focused instruction. The salience of the structures was promoted by increasing their frequency and through communication. The research findings cited in this section have an indication that if the frequency hypothesis is applied appropriately, it can provide direction towards the modification of input to suit the learning of the target structures in a specific language by making them more

frequent and thus highlighting their need to be learnt. This is crucial in circumstances where a certain level of proficiency is expected of a learner within a specific period. This was the case with the task of this study (See statistical evidence in chapter 4 of this thesis). However, as will be discussed in the succeeding chapters, frequency alone without special focus on the target forms may not necessarily enhance proficiency nor are the most frequent features the ones acquired first.

2.4. Interaction in the classroom

An important observation made by Allwright (1983:49) states:

> Classroom pedagogy can proceed only via interaction: that interaction can only be managed jointly and the management of that, in the classroom, necessarily constitutes the management of learning itself.

What is implied in the above suggestion is that where the ultimate aim is to have learners develop skills of communicating in real life situations using the TL, the classroom should provide opportunities where the learner should practise using the target structures. In fact, Johnson's (1983) experiment proved that peer interlocution inside and outside the classroom is a sure way of providing initiative and motivation for learners to use the target language with more ease and thus enhance communicative ability.

On interaction as part of classroom input, Krashen (1987) suggests that this can be achieved by training learners on communicative competence. For instance, they should not just be taught how to use wh-expressions in decontextualized sentences but should be trained to apply them in real conversations. One way is to encourage them to talk about their daily experiences using the target forms. To create other activities

that induce conversations, Nunan (1989) and Morris and Stewart-Dore (1984) have suggested lists of materials that can be included in the classroom input. A few examples include picture stories, family trees, street maps, menus, recipes, extracts from plays, instructions and shopping lists. In our study, communicative tasks and written conversations were introduced to enrich the classroom input with wh-expressions. (see appendix v for a sample of a conversation using wh-expressions).

Communication as an important language learning process is exemplified by the Bangalore/Madras communicative English testing project (Prabhu 1987). In Prabhu's (ibid) study, no syllabus was followed and there were no language drills or exercises. Only problems to solve using English were administered. The problems were both through oral interaction and written texts. After three years, the learners had significantly improved in their communication skills.

To promote classroom communication, Long and Sato (1983), Long et al (1984), Pica and Long (1986) and Brock (1986) reveal from their studies that the questioning behaviour of the teachers is quite vital. Classrooms where display questions were dominant with less comprehension checks, confirmation checks and clarification requests offered little opportunities for negotiation of meaning. Consequently, learners in such classrooms had a less motivational drive for using the target language and their communicative competence was below that of learners in classrooms where maximum interaction was encouraged. This is because display questions elicit short answers and learners supply answers for didactic purposes only. Referential questions on the other hand encourage more syntactically complex utterances. Confirmation

checks, comprehension checks and clarification requests encourage negotiation of meaning and ensure the comprehensibility of the input.

The design of this study utilized the findings cited above in two important ways. First, the teacher in the treatment group was encouraged to apply comprehension and confirmation checks regularly to ensure that the input was comprehensible enough. Secondly, referential questions were used more frequently and learners encouraged to interact using the target expressions.

2.5. The role of instruction

A majority of researchers agree that formal instruction has a positive effect on the accuracy with which learners produce the target language. According to Ellis (1990), instruction involves direct pedagogic intervention which aims at accelerating the learners' interlanguage. He reviews studies conducted separately by Caroll (1967), Krashen et al (1978), Oller and Chihara (1978) and Broere (1978) which showed that instruction precipitates proficiency. They measured statistically the relationship between the amount of instruction experienced by the learners on one hand and proficiency scores on the other. All the four studies found a positive relationship between instruction and proficiency. Seliger and Hartnett (1974) and Krashen and Seliger (1976) also marched students who had received the same amount of exposure but different periods of instruction. Both studies established that those with more instruction scored higher on proficiency tests. The above studies, therefore, support the fact that instruction facilitates proficiency as stipulated in the first hypothesis (see page 6 of this thesis).

However, only Ellis's (1984) study considers instruction on the production of wh-pronouns, specifically, 'who', 'what', 'where' and 'when' as used in interrogatives. The subjects in his study were thirteen children aged between ten and thirteen learning English on a fulltime basis in a London language unit. The results showed that there was no significant improvement with which either semantically appropriate wh-pronouns or interrogatives with inversion were produced for the group as a whole. However, a number of children showed a marked improvement. But it is possible that the results would have been better if the period of instruction was extended from only three hours to several weeks like in Brown's (1973) research. Also, as discussed below in Pica's (1982, 1985) findings, the linguistic environment must have affected the results.

Pica (ibid) sought to find out whether second language learners who lack access to input from the wider community and are exposed to the target language solely through their classroom and textbooks acquire grammatical morphology in ways dependent upon the linguistic complexity of those items. There were three groups of subjects: those receiving instruction only: those acquiring English through everyday social interaction only and those exposed to the language through instruction and social interaction. Comparing two morphemes, plural '-s' and progressive '-ing', the following observations were made:

(a) 'Instruction only' learners exhibited a higher rank order of production accuracy for plural '-s' than learners representing the two conditions of target language exposure.

(b) The rank order of '-ing' was much lower for 'instruction only' as compared to the other groups.

The following conclusions can be drawn from the above results:

(a) The order of difficulty of the two morphemes as proposed by Krashen (1981) is plausible. Plural '-s' is simpler due to its straight-forward form-function relationship. From Pica's (ibid) observations, progressive '-ing' proved difficult even after instruction because instructed learners were confused by the several possibilities for using '-ing' in English added to the verbs where it was not required. However untutored acquirers whose hypotheses for progressive '-ing' were based on input from every day social interaction were more successful in restricting use to more target-like contexts.

(b) Classroom instruction has a positive role to play in the acquisition and production of a second language. However, the impact it has varies according to the complexity of the material presented to the learner.

Pica (ibid) capitalizes on the idea of complexity and suggests two alternatives. The first is that more complex areas of the target language should be excluded from direct presentation in the second language syllabus. Otherwise better methods of instruction should be devised. Our study opted for the latter suggestion because the subjects in our sample did not include those using English in their everyday social interaction. Furthermore, the frequency hypothesis and the interaction hypothesis provided learners with adequate exposure to the target forms.

Studies which point out that instruction has no positive effect on second language acquisition were not relevant to our research because they were measuring the order of acquisition and not the learners' proficiency in the target structures after instruction. An instance is Krashen's (1981) work. Others such as Upshur's (1968), Mason's

(1971) and Fathman's (1975) made a comparison between instruction plus exposure on one hand and exposure only on the other. The discrepancy of such a design has already been illustrated in Pica's (ibid) study discussed above.

2.6. Studies conducted locally on the learning of English

The research findings discussed below were conducted by Kenyan scholars in various parts of the country. Only those which have a close relationship to our study were reviewed.

The study by Omulando (1979) looked at factors that influence language proficiency in Kenyan primary schools and their effect on the learners' performance. The locations of his study were Nairobi city, Kajiado and Limuru. While he compared the results of comprehension tests in three languages, English, Kiswahili and Maasai, his major objective was the learning of English. The objective of the comparison was to ascertain whether it is the mode of instruction or the medium of instruction that creates differences in performance. His methodology included use of questionnaires to enable him assess:

i) the quality and quantity of in-school resources such as grades and number of teachers and number and types of text-books used for language teaching.

ii) the socio-economic background of the learners.

iii) the linguistic behaviour of the learners outside the classroom.

To achieve his objectives, he used the rural-urban, low-cost and high-cost schools dichotomies to compare and correlate C.P.E. results from 1972 to 1975. Before

analysing the implications of Omulando's (1979) study, there is need to outline the designs of four other studies that have several points in common to his. One such study that uses a comparative approach is Mwangi's (1991). She investigated the effect of speaking English exclusively in the school compound on performance of English as a subject and on the other subjects taught and tested in English. Her methodology included the use of questionnaires, opinionaires and tests.

Two studies with a wide range of objectives are Namach's (1990) and Bakuli's (1990). The former carried out his research in Funyula division of Busia district while the latter in Kabras division of Kakamega district. An important feature the two have in common with our research is that their locations are within basically rural environments. While Namach (1990) sought to explain factors which affect the implementation of the 8.4.4. primary English syllabus, Bakuli (1990) focused on the instructional practices by teachers of English in upper primary classes. The following purposes outlined by the two researchers provided positive foresights towards the design of our study:

(a) establishing whether teachers of English were given inservice training in preparation for the teaching of the new programme i.e. 8.4.4.

(b) describing and assessing the existing teaching methods.

(c) identifying resources available for English lessons.

(d) identifying and describing the existing instructional problems the teachers of English in primary schools faced.

A discussion of the above points will follow soon after the description of Karanu's (1992) study. Karanu (ibid) narrowed his work to the production and use of resources

for English language teaching in selected primary schools in Nairobi. The two major objectives of his work were:

(a) to establish whether English language teachers had the skills to produce cheap resources for language teaching.

(b) to investigate how often English language teachers used resources for teaching.

In summary, all the above studies focused on four crucial points that were relevant to this research. Firstly, on the instructional practices used by teachers of English. Secondly, on the instructional materials used in English lessons. Thirdly, the socio-economic and linguistic background of the learners. Lastly, whether teachers were in-serviced whenever new approaches to the teaching of English were introduced.

The findings of the works quoted above cannot be under-estimated because they have one vital aspect in common; they point out some of the difficulties and inadequacies that are existent in the teaching of English. These include:

(a) an acute shortage of text-books and reading materials in most of the schools.

(b) little exposure of the learners to the target language outside the classroom.

(c) teachers rushing over a wide area of topics in a short time in order to cover the syllabus.

(d) little learner participation in lessons.

(e) poor questioning techniques and teachers being less resourceful in exploring the environment to meet the learners' needs.

One insight provided by the above listed short-comings to this research was that there was a necessity to give the learners as much exposure to the target wh-structures as possible through increasing their frequency in the classroom discourse. An attempt was therefore made to have the teacher make the wh-words salient, firstly, through special focus on their use and secondly, by having the learners interact with him and with each other using the target structures. Interaction in pairs and groups was meant to introduce the concept of the communicative approach that promotes the use of the target language in conversations as advocated by Widdowson (1978), Littlewood (1981) and Allwright (1983) among others.

One weakness of the studies discussed above except Bakuli's (1990) is that they do not indicate the statistical significance of the differences in the variables. For instance, Omulando (1979) considers one dependent variable, language proficiency against four independent variables: in-school resources, the socio-economic background of the learners, the school linguistic environment and the residential background of the learners under the auspice of the rural-urban dichotomy. While such a design gives projections on the general causes of poor performance in the C.P.E. examinations between 1972 and 1975, it reveals little about what an English teacher who is subjected to difficult classroom conditions can do to improve the learners' language. A gap which this study attempted to fill is that it made a departure from the descriptive approach of comparing the variables to a more practical, experimental approach of improving classroom teaching of English in an acquisition-poor environment. The main question that this study attempted to answer is, 'can a teacher, by using the minimal resources available, act as a causative model in the

classroom environment in the acquisition of target language structures by the learners?'

Finally, there are two more studies whose findings supplement those discussed in the earlier sections of this chapter. The concept of comprehensible input (see section 2.2.) is supported by Kembo (1985) and Kirigia (1991). The common objective of their studies was to investigate what inhibited learners' comprehension of written texts. They established that:

(a) Statements with difficult words or words with specialized usage made learners unable to decipher specific meanings of parts of texts given.

(b) Non-redundant texts, often having difficult words, caused comprehension problems.

(c) Designing learning materials which reflected what the learner is most likely to experience in the immediate environment enhances comprehension.

For both (a) and (b), Kirigia (ibid) recommends that inference is necessary to aid comprehension and that learners should be encouraged to process the meaning of a whole message rather than words in isolation. The idea of inference is plausible because it is not possible to accurately judge the linguistic ability of individual learners though they may be at the same level of learning. This has already been discussed under the concepts of 'roughly tuned' teacher talk rather than 'finely tuned' in section 2.2. However, while conducting an English lesson, it is best that the teacher uses comprehension checks, confirmation checks and clarification requests to help

him guide the learners to understand his message where they have difficulties (see section 2.4).

2.7. The triangulation approach

The triangulation approach or hybrid approach has been recommended for more reliable results by modern scholars such as Leo Van Lier (1990), Seliger and Shohamy (1989), Ellis (1990) and Allwright and Bailey (1991). It will be noted that the adoption of the term 'triangulation' does not conform to its conventional meaning of 'three'. Instead, it has been used to refer to 'more than one' or 'diversification' and no reason is given for the choice of the word in this context. The triangulation method involves:

(i) **Theoretical triangulation**

This is when research is based on more than one theory or hypothesis. Again no reason is given why 'hypothesis' is included under the term 'theoretical'. Logically considering the reason, it should be because the two words refer to concepts. In this dissertation, where hypotheses and not theories were the main basis of the research, it is more convenient to use the term hypothesis triangulation or conceptual triangulation for specificity even though these terms may not have been used elsewhere.

ii) **Data triangulation**

The data collected should come from different sources such as observation, interviews and tests. Furthermore, several methods of data collection should be employed.

iii) **Investigator triangulation**

The collection of the data is done by two or more observers. The results are then compared to minimize subjectivity.

iv) **Methodological triangulation**

This involves the use of varieties of the same method, for instance, three different scales measuring the same aspect.

Our study put these recent recommendations into consideration. Firstly, the conceptual framework was based on three hypotheses. Secondly, data collection involved four approaches: the observation schedule was used to tally the frequency of the wh-words, lessons in progress were recorded, information on the background of the subjects was collected and tests were applied. In tallying the frequency of occurrance of wh-expressions during instruction, more than one observer carried out the task. The services of research assistants ensured there was investigator triangulation. For data analysis of tests one to three, both the dependent and the independent samples tests were used. This in effect strengthened the significance of the findings on the role played by form-focused instruction.

CHAPTER THREE

3.0. METHODOLOGY

3.1. Introduction

In the initial stages, this study utilized library research techniques. A review of the literature related to the topic under study was carried out. The second part of the research covered field work. Before the main research, a pilot study was conducted whose results are summarized in appendix i. The services of two research assistants were employed in the collection of data using the observation schedule and the administration of tests. The research was conducted using an experimental approach. The type of design was the pre-test plus post-test after instruction in the different categories of wh-words under study and a comparison of the results of the treatment group and the control group (refer to the analyses in chapter four). In the following sections of this chapter, a description of the methodologies employed is given.

3.2. Location of the study

The research was conducted in Marachi central location, Butula division in Busia district. The researcher selected Busia district because from his teaching exprience in the neighbouring districts, Kakamega and Vihiga, the mean scores for both K.C.P.E. and K.C.E. in English for Busia were usually the lowest. Due to this, the three teaching appoaches were experimented to ascertain whether they can be of value in improving the learning of English.

3.3. Sample selection

The stratified sampling procedure was used in the selection of the subjects who participated in the research. Standard six pupils from two primary schools, Butunyi mixed and Bumutiru R.C. were used in the research. Standard six was chosen because firstly, at this level, learners in rural schools have attained some good knowledge of English and secondly, in most primary schools teachers would not wish their schedule to be interfered with in class 7 and 8 as they would be preparing the pupils for K.C.P.E. A summary of the two samples is given in the table below:

TABLE 1A: DESCRIPTION OF THE SAMPLES

	School A: Treatment group	School B: Control group
Name of School	Butunyi mixed	Bumutiru R.C.
Total No. of learners	48	42
Mean age of learners	13	13
No. of males	26	22
No. of females	22	20
No. used for data analysis	30	30

The sample used for data analysis was arrived at by considering learners who attended all sessions of instruction and took all the tests. Note that the variables of age and sex were not in any way the major focus of this study. However the stratification along these dimensions was to ensure that the samples were truly homogenous (the age factor) and representative of a natural population (the sex factor).

3.4. Instrumentation and data collection

The main data elicitation instruments were the tests which were administered in turns before and after instruction (see appendix vi). During instruction 8 lessons were tape-recorded. The tape-recorded lessons assisted in tallying the frequency of the wh-words on the observation schedule (see sample of the observation schedule in

appendix iii). Furthermore, the teachers handling the lessons were at liberty to replay the cassettes and listen to their own work. This gave them the opportunity to make self-assessment and where necessary amend their approaches to suit the plan of the research.

3.5. Teaching and testing procedures

3.5.1. Instructions to teachers and research assistants

Before the inception of the research, the teachers who conducted the lessons and the research assistants were inserviced. The teachers were given an outline of the tenets of form-focused and meaning-focused instruction and the expected role of the high frequency of occurrence of wh-words during instruction. Briefly, the teachers were required to:

(a) Use wh-words in their discourse as frequently as possible.

(b) Give learners plenty of opportunity to practise using wh-words.

(c) Let the learners be as relaxed as possible.

(d) Make use of comprehension checks, confirmation checks and clarification requests to gauge the comprehensibility of the input.

(e) Be slow enough in their speech.

(f) Exploit the environment as much as possible.

The research assistants were made aware that focus was on wh-words and briefed on how to use the observation schedule. After every lesson, the researcher, the assistants and the teacher handling the lesson held discussions on how the lesson was conducted and possible improvements that could be made. In the following sections, details of the teaching and testing procedures are outlined.

3.5.2. The content of instructional techniques used

In the lessons on form-focused instruction, the nine simple wh-words and six compound wh-words were taught. Examples of contexts in which these words are applied in declarative and interrogative sentences were given by the teacher. The main activities of the learners included:

(a) Repetition of specific sentences after the teacher by individual learners and groups.

(b) Construction of sentences using specific words as directed by the teacher.

(c) Reading aloud of sentences constructed by the teacher from the chalkboard.

(d) Reading aloud of sentences constructed by the learners themselves from the chalkboard.

(e) A learner repeating what another learner had said.

The examples the teacher gave related to:

(a) The daily experiences of the learners e.g.

Who is the chief of this location?

I know when it is market day at Bumala.

(b) Current events in the classroom e.g.

Tell me what we are learning now.

(c) Events which had occurred in recent times in the community e.g.

The police were shown where the burglars escaped through.

(d) Any other events he thought interesting and were within the learners' knowledge.

Occasionally, the teachers used comprehension checks e.g. Have you understood? Confirmation checks e.g. Is Ikholi's sentence correct? and clarification requests e.g. Isn't it?

Errors made by learners were not ignored. The teacher would confirm the correctness of a learner's sentence from the rest. If they realized the error, they would correct it. Where they failed the teacher would assist. By constantly constructing sentences using wh-words and making learners repeat them or asking learners to construct theirs, the teacher was consciously increasing the frequency of wh-words.

In meaning-focused instruction, the teacher played the role of a guide. The teacher-pupil and teacher-class interactions were minimized. Furthermore, rather than construct isolated sentences, the learners were encouraged to converse using wh-expressions. The main activities included:

(a) Learners taking roles in reading written conversations (see samples in appendix v).

(b) Learners working in pairs and creating short conversations which they memorized and dramatized infront of the class.

These conversations were to be logical and meaningful. The emphasis that each sentence in the conversation should contain a wh-word was another way of consciously increasing the frequency of wh-words during instruction.

To distinguish the type of exchanges, the observation schedule in appendix iii was used. When the teacher addressed the whole class, then 'T' was entered in the column

labelled 'source' and 'C' in the column labelled 'directed to'. If the pupils responded, the 'C' would be entered in the column labelled 'source' and 'T' in the column labelled 'directed to'. The sum of all the exchanges was found. To calculate the percentage of each type of exchange, the following formula was used:

$$\frac{\text{sum of each type of exchange}}{\text{sum of all exchanges}} \times 100$$

The relevance of these percentages is discussed in section 4.3 of this thesis.

The frequency of occurrence of each wh-word was also recorded on the observation schedule. If, within an exchange, a wh-word occurred, it was recorded either as a statement or a question. This assisted in getting the frequency with which each word occurred leading to the analysis in section 4.5 of this thesis.

3.5.3. The duration schedule of the activities

The period of time between one activity and another is summarized in the tables below:

TABLE 1B: DURATION BEFORE INSTRUCTION AND AFTER INSTRUCTION

FORM-FOCUSED INSTRUCTION	DESCRIPTION	DURATION IN DAYS
Simple wh-words in declaratives	Before instruction and first instruction	1
	First instruction and second instruction	3
Simple wh-words in interrogatives	Before instruction and after instruction	1
Compound wh-words	Before instruction and after instruction	2
MEANING-FOCUSED INSTRUCTION	Before instruction and after instruction	5
	TOTAL	12

TABLE 1C: DURATION BETWEEN PRE-TESTS AND POST TESTS

FORM-FOCUSED INSTRUCTION	DESCRIPTION	DURATION IN DAYS
Simple wh-words in declaratives	Pre-test and first post-test	2
	First post-test and second post-test	3
Simple wh-words in interrogatives	Pre-test and post test	1
Compound wh-words	Pre-test and post-test	3
MEANING-FOCUSED INSTRUCTION	Pre-test and post-test	3
	TOTAL	12

NB: The days are exclusive of weekends and public holidays.

3.5.4. Tests

All the tests administered to the learners appear in appendix vi. Pre-tests include all those tests administered before instruction. Post-tests refer to all these tests administered after instruction. This design attempts to use the subjects as their own controls, that is the subjects are measured more than once on the dependent variable. It is sometimes referred to as the dependent samples test or a 'repeated measures design'.

The independent samples test is one that involves a treatment group and a control group. Following the triangulation approach referred to in section 2.7. of this thesis, the results of the control group, which did not undergo instruction were compared with the results of the treatment group in test one to three. The control group was tested only once. This was due to the fact that during the pilot study, the control group was tested an equal number of times the treatment group. There was a variation in the

scores of each learner in the control every time the tests were administered. It was realized that anxiety as a variable was the cause of the inconsistency and this was avoided in the main research.

Finally, for form-focused instruction, the first three tests were administered while test four, which tested the learners' communicative competence was administered after meaning-focused instruction.

3.6. Scoring procedure and data analysis

In the first instance, each learner's work was marked and a total score awarded. For tests 1 to 3, a learner scored 1 mark for every wh-word used correctly in either an interrogative or a declarative sentence as per the instructions. However, wrong spellings, improper application of tenses or other minor grammatical mistakes did not affect the awarding of a mark if these mistakes did not affect the conceptual meaning of the sentence. For example, the two sentences below were awarded 1 mark each irrespective of the underlined mistakes:

(a) However much you talk I winot give you wat you want.

(b) Why do you like to playing games?

In test 4, the requirement was for the learner to reveal knowledge of what a conversation is by composing one that was logical in written form. A wh-word correctly used in an interrogative sentence was awarded 1 mark so was the case if correctly used in a declarative. A correct response between one assumed interlocutor and another without using a wh-word was awarded $\frac{1}{2}$ a mark. Coherence between one sentence, considered to be an utterance, and another was awarded 1 mark. If the

learner did not consistently maintain the theme prescribed in the instructions, 5 marks were deducted from the total percentage awarded. Here are a few lines from a learner's work for illustration:

NANDWA: Dorothy, show me how to ride a bicycle. (1 mark)

↑

LOGICAL CONNECTION (1 mark)

↓

DOROTHY: Well, come I show you how to ride a bicycle. (1 mark)

↑

LOGICAL CONNECTION (1 mark)

↓

NANDWA: Which part am I going to put my legs? (1 mark)

↑

LOGICAL CONNECTION (1 mark)

↓

DOROTHY: On the pedal. (½ mark)

The number of correct responses for individual learners were converted to percentages and the mean of each test calculated. Percentage raw scores and the mean score of every test were presented on frequency distribution tables (see chapter four). The t test analysis was applied to determine the statistical significance between in-group means and between in-group and out-group means. The t-test is used to compare the means of two groups. It helps to determine how confident the researcher can be that the differences found between two groups (treatment and control) as a result of a treatment are not due to chance. The role of the frequency of wh-words in facilitating the learners' proficiency in the target structures was determined by correlation coefficient techniques. Correlational techniques are used for analyzing data obtained from descriptive research which examines existing relationships between variables. Regardless of how high the correlations are, they do not imply causation.

CHAPTER FOUR

4.0. DATA ANALYSIS AND INTERPRETATION

4.1.0. The role of instruction in the acquisition of Wh-words

4.1.1. Introduction

It was Ellis (1990) who recommended that language instruction be investigated from a form-focused and a meaning-focused perspective. These two methods are in a way very unique from other methods as they encompass several approaches that had been suggested earlier and even after Ellis's (ibid) recommendations by other scholars (refer to chapter 2). In this section of chapter four, statistical evidence is adduced to establish that form-focused and meaning-focused methods of instruction facilitated the learners' proficient use of and communicative competence in wh-words. An attempt is also made to draw a distinction between these two methods of instruction. Form-focused instruction is discussed under three sub-headings in accordance with the form-function relationship of wh-words. The next sub-section dwells on meaning-focused instruction.

4.2. Form-focused instruction

4.2.1. Simple wh-words as used in declaratives

After the administration of the pre-test, there were two durations of instruction on the use of wh-words in declaratives which were divided into four lessons of 30 minutes each. Two post-tests were administered. The table below gives a comparison of the learner's scores before and after instruction. The frequency (f) represents the number of times each percentage raw score (x) occurred, that is the number of learners who got the score x. f.x. is the percentage raw score multiplied by its frequency which results into the sum of each score.

TABLE 2A: SCORES BEFORE AND AFTER INSTRUCTION FOR SCHOOL A

	% RAW SCORE,	BEFORE INSTRUCTION		AFTER FIRST INSTRUCTION		AFTER SECOND INSTRUCTION	
	x	f	f.x	f	f.x	f	f.x
	0	15	0	4	0	0	0
	11	12	132	11	121	0	0
	22	1	22	5	110	3	66
	33	1	33	4	132	4	132
	44	0	0	1	44	6	264
	56	0	0	0	0	7	392
	67	0	0	3	201	3	201
	78	1	78	0	0	4	312
	89	0	0	1	89	1	89
	100	0	0	1	100	2	200
TOTAL		30	265	30	795	30	1656
		$\bar{x} = \frac{265}{30} = 8.83$		$\bar{x} = \frac{795}{30} = 26.5$		$\bar{x} = \frac{1656}{30} = 55.2$	

A careful study of table 2A reveals that more learners scored higher on the test after instruction was given. For instance, before instruction, half (15) of the learners could not use any of the target words appropriately in sentences. Consequently, each scored 0%. After the first instruction, only 4 learners scored 0%. This implies that 11 learners moved from this lowest bracket to the higher brackets. After the second instruction, no learner scored less than 11%, an indication of the positive effect of instruction. Furthermore, before instruction, only 2 learners scored 33% and above unlike after the first instruction where there were 10 learners within this range and 29 after the second instruction. Only 1 learner scored above 50% before instruction compared to 5 after the first instruction and 18 after the second instruction. Between 78% and 100%, there was only 1 learner before instruction, 2 after the first instruction and 8 after the second instruction. From the above examples it is evident that the

'after' instruction results were higher than 'before' instruction results between all the class boundaries.

A comparison of the means also gives an overview of the improvement in the learners' proficiency in the target structures. Before instruction, the mean was 8.83, an indication of low scores for the majority of the learners. Contrastingly, the mean rose to 26.5 (more than three times) after the first instruction and to 55.2 (more than six times) after the second instruction. This is a manifestation that more learners scored higher on the test after the second instruction than after the first instruction and before instruction.

However, a comparison of percentage raw scores and means alone cannot prove whether form-focused instruction had any statistical significance so as to either accept or reject the first hypothesis as stated on page 6. The statistical significance can only be determined by the application of a statistical test. For all the computations used to test the hypotheses in this chapter, the t-test adopted from Bluman (1992: 302-333) was applied. This test follows five steps:

(a) finding the differences of the values of the pairs of raw scores.

(b) calculating the mean of the differences (D).

(c) calculating the standard deviation of the differences (SD).

(d) computing the estimated standard error of the differences (SED).

(e) calculating the test value (T).

Table 2B below gives the computed figures using the procedure exemplified in appendix vii (a).

TABLE 2B: SUM OF DIFFERENCES AND SQUARED DIFFERENCES

	BEFORE INSTRUCTION	AFTER FIRST INSTRUCTION	AFTER SECOND INSTRUCTION
SUM OF DIFFERENCES	-554	-948	-1,402
SUM OF SQUARED DIFFERENCES	20,310	52,721	82,051

If instruction has to be a causative variable, then the 'before' instruction scores must be significantly less than the 'after' instruction scores. Hence, the sum of the differences must be less than zero. This condition applies to the results of our research as the figures in table 2B show. When the above sums of differences are each divided by the number of the sample, i.e. 30, the following means are arrived at: before instruction, -18.46: after the first instruction, -31.6: after the second instruction, -46.73. This suggests that the least the mean value of the differences is from zero, the better the learners' performance was on the test. For instance, the mean of the differences of the pre-test is the highest yet when the means of the raw scores are compared, the mean after the second instruction is approximately 8.3 times greater than that of the pre-test. It can therefore be argued that more learners had definitely grasped how to use wh-words appropriately after being instructed twice than when they had not received any instruction. Consequently, the test value must be less than the critical value and thus fall within the critical region which is the rejection region of the null hypothesis.

Using Bluman's (1992) procedure, the test value for the scores between the pre-test and the post-test after the first instruction is -5.43. The critical value according to Bluman's (ibid) distribution table (see appendix ii a) is -1.699. Note that this critical value will be used for all the categories of wh-structures in this chapter. -5.43 is less than -1.699, therefore providing ground for the rejection of the null hypothesis and the

acceptance of the alternative hypothesis. The results indicate that the first duration of form-focused instruction facilitated the learners' proficient use of wh-words in declaratives.

Following the same procedure, the test value for scores between the first and second instruction is -6.04 and between the pre-test and the second instruction is -10.72. There is a wider gap between the pre-test and the second instruction than between any other times. It is evident that increased instruction was directly proportional to proficiency. Therefore the probability that instruction had a positive role to play in the learners' proficient use of wh-words in declaratives at a 0.05 level of significance is 95%.

The triangulation approach was underscored in section 2.7. To reinforce the claim that form-focused instruction facilitated the learners' proficient use of the target words, the independent samples test was also applied to compare the means of the percentage raw scores in the treatment group and the control group.

In table 2C below, a comparison between the sores of the treatment group and the control group for test one is made.

TABLE 2C: PERCENTAGE RAW SCORES FOR THE TREATMENT AND CONTROL GROUP

% RAW SCORE	CONTROL GROUP (-INSTRUCTION)		TREATMENT GROUP (+INSTRUCTION)	
x	f	f.x	f	f.x
0	14	0	0	0
11	11	121	0	0
22	1	22	3	66
33	1	33	4	132
44	1	44	6	264
56	1	56	7	392
67	0	0	3	201
78	1	78	4	312
89	0	0	1	89
100	0	0	2	200
TOTAL	30	354	30	1,656
	$\bar{x} = \frac{354}{30} = 11.8$		$\bar{x} = \frac{1656}{30} = 55.2$	

From table 2C it is conclusive that learners who received instruction per formed better on the test. Specific comparisonswill illustrate this assertion. There were more learners who scored below average in the control group (28) than in the treatment group (13) implying that if the control group received instruction the figure would have been higher. On the other hand, more learners scored above average (17) in the treatment group compared to only 2 in the control group. 26 learners appeared in the lower bracket (0 to 22 marks) in the control group whereas there were only 3 in the treatment group. As for the upper bracket (78 to 100 marks) there were more learners (7) in the treatment group than those in the control group. While no learner scored 0% in the treatment group, there were 14 learners in the control group. Finally, no learner scored 100% in the control group compared to 2 in the treatment group. The

variations shown above indicate strongly that instructed learners had an upper hand in the tests administered.

After computation using Bluman's (1992:326) procedures (see example in appendix viib), the following data was arrived at:

DATA 1D: MEANS AND STANDARD DEVIATIONS

Control group	Treatment group
$\bar{x}_1 = 11.8$	$\bar{x}_2 = 55.2$
$SD_1 = 18.5$	$SD_2 = 21.43$
$n_1 = 30$	$n_2 = 30$

The calculated test value from the above figures using the formula in appendix (x) is -8.60. This value is less than the critical value and thus falls within the rejection region. The decision is to accept the alternative hypothesis and reject the null hypothesis. It implies that the form-focused instruction given to the treatment group played a significant role in enhancing the learner's proficiency in wh-words as used in declaratives.

4.2.2. Simple wh-words as used in interrogatives

For simple wh-words as used in interrogatives, a pre-test and only one post-test were administered. This was due to the fact that the learners' performance on the post-test was much better than it was for declaratives. The table below gives a breakdown of the raw scores before and after instruction on the use of the wh-words in interrogatives:

TABLE 2D: PERCENTAGE SCORES BEFORE AND AFTER INSTRUCTION FOR SCHOOL A

% RAW SCORE	BEFORE INSTRUCTION		AFTER INSTRUCTION	
x	f	f.x	f	f.x
0	4	0	0	0
11	3	33	0	0
22	7	154	3	66
33	4	132	0	0
44	4	176	0	0
56	0	0	4	224
67	4	268	4	268
78	2	156	9	702
89	2	178	7	623
100	0	0	3	300
TOTAL	30	1,097	30	2,183
	$\bar{x} = \frac{1097}{30} = 36.56$		$\bar{x} = \frac{2183}{30} = 72.76$	

After instruction, no learner scored 11% or below compared to 7 before instruction. This means that instruction pushed all the 7 learners to the higher brackets. Between 0% and 44% there were 22 learners before instruction compared to only 3 after instruction. This implies that after instruction, 19 learners scored higher on the test. While only 8 learners scored 50% and above before instruction, 27 learners (90% of the total) scored above this mark after instruction. Those who scored between 78% and 100% were only 4 before instruction in comparison to 19 after instruction. This is a remarkable increase by 15 learners. Whereas no learner could use all the words appropriately in sentences before receiving instruction, 3 learners managed to do so after being instructed.

The mean after instruction was nearly double the mean before instruction that is, 72.76 and 36.56 respectively.

The above comparison manifests that instruction had a positive effect on the learners' proficiency in wh-structures. The next step is to determine the statistical significance of the difference between the two means. The sum of the difference between the pre-test and the post-test is -1,086. The mean of the difference will, therefore, be -36.2. The sum of the squared differences is 63,566. The calculated test value using the above figures is -6.606, which is less than the critical value. This provides ground for the rejection of the null hypothesis and the postulation that form-focused instruction has significant causal effect on the learners' proficiency in wh-words as used in interrogatives.

Testing the same hypothesis using the independent samples test yields positive results too. Table 2E provides a comparison of test scores for the treatment group and the control group for test two.

TABLE 2E: PERCENTAGE RAW SCORES OF THE TREATMENT GROUP AND THE CONTROL GROUP FOR TEST TWO

% RAW SCORE	CONTROL GROUP		TREATMENT GROUP	
x	f	f.x	f	f.x
0	5	0	0	0
11	2	22	0	0
22	5	110	3	66
33	3	99	0	0
44	5	220	0	0
56	1	56	4	224
67	5	335	4	268
78	1	78	9	702
89	3	267	7	623
100	0	0	3	300
TOTAL	30	1,187	30	2,183
MEAN SCORE	$\bar{x} = \frac{1187}{30} = 39.56$		$\bar{x} = \frac{2183}{30} = 72.76$	

From table 2E, 27 learners in the treatment group scored above average compared to only 10 in the control group. This gives the implication that instruction played a major role in enabling the learners in the treatment group to use wh-words appropriately in interrogative sentences. Further evidence of the role of instruction is that while only 4 learners scored between 78 and 100 marks in the control group, 19 learners in the treatment group appeared within this bracket. The margin of 15 is quite significant. From the poor performance point of view, similar evidence is prevalent. Only 3 learners were below average in the treatment group in comparison to 20 in the control group. Furthermore, in the lower bracket (0 to 22 marks), there were 12 learners in the control group and only 3 in the treatment group. It is therefore conclusive that form-focused instruction faciliated the learners' proficient use of wh-

words in interrogative sentences. This will be proved by the statistical test that follows below.

After computation, the following results were arrived at:

DATA 1B: MEANS AND STANDARD DEVIATIONS

Control group	Treatment group
$\bar{x}_1 = 39.56$	$\bar{x}_2 = 72.76$
$SD_1 = 28.33$	$SD_2 = 21.06$
$n_1 = 30$	$n_2 = 30$

The calculated test value using the above figures is -5.155. This value is less than the critical value. Thus, the alternative hypothesis must be accepted and the null hypothesis rejected.

The conclusion drawn is that learners who received some amount of instruction performed better on the test than those who did not.

4.2.3. Compound wh-words as used in declaratives

Just like for interrogatives, a pre-test and one post-test were administered. Below is a breakdown of the percentage raw scores before and after instruction and their frequency:

TABLE 2F: PERCENTAGE SCORES BEFORE AND AFTER INSTRUCTION FOR GROUP A

% RAW SCORE	BEFORE INSTRUCTION		AFTER INSTRUCTION	
x	f	f.x	f	f.x
0	15	0	0	0
8	1	8	0	0
17	8	136	4	68
33	6	198	4	132
50	0	0	9	450
67	0	0	6	402
83	0	0	5	415
100	0	0	2	200
TOTAL	30	342	30	1,667
	$\bar{x} = \frac{342}{30} = 11.4$		$\bar{x} = \frac{1667}{30} = 55.56$	

The frequencies of the scores in table 2F show that learners performed better on the test after instruction than before instruction. For instance, half of the learners could not use any of the six compound words correctly before instruction. After instruction, none scored 0%, implying that the 15 had moved into the higher brackets. Furthermore, 24 learners (80% of the total number) scored between 0% and 17% before instruction. However, after instruction, only 4 appeared within this bracket. None scored 50% and above before instruction while 22 (73% of the total number) appeared within this bracket, a manifestation of the positive role of instruction.

At least 2 learners used all the six compound words proficiently after instruction compared to none before instruction. The mean more than trippled after instruction, that is from 11.4 to 55.6.

The prediction, therefore, is that the test value will be significantly lower than the critical value. The sum of the differences between the pre-test and the post-test is -1,359 while the sum of the squared differences is 74,669. The mean of the differences is -45.3. Using the above figures, the test value is -11.67. The decision is to reject the null hypothesis and accept the alternative hypothesis because the test value is significantly lower than the critical value.

Making a comparison of scores from two independent groups, the treatment group and the control group, which are presented in table 2G also supports the decision to reject the null hypothesis.

TABLE 2G: PERCENTAGE RAW SCORES OF THE TREATMENT GROUP AND THE CONTROL GROUP FOR TEST THREE

% RAW SCORE	CONTROL GROUP (-INSTRUCTION)		TREATMENT GROUP (+INSTRUCTION)	
x	f	f.x	f	f.x
0	25	0	0	0
8	0	0	0	0
17	2	34	4	68
33	1	33	4	132
50	2	100	9	450
67	0	0	6	402
83	0	0	5	415
100	0	0	2	200
TOTAL	30	167	30	1,667
MEAN SCORE	$\bar{x} = \frac{167}{30} = 5.5$		$\bar{x} = \frac{1667}{30} = 55.56$	

An analysis of table 2G reveals that 25 out of 30 (83%) learners in the control group could not use any of the compund wh-words appropriately in constructing sentences whereas none from the treatment group scored zero. Looking back at table 2F, 15

learners in the treatment group had scored 0%. There is, therefore, no indication of stagnation as all the fifteen learners moved into the higher brackets. Also, no learner was above average in the control group compared to 13 in the treatment group. After form-focused instruction, 2 learners in the treatment group managed to score a hundred percent unlike in the control group. While only 8 learners were below average in the treatment group, a large number of 28 fell within this bracket in the control group. These examples and the statistical test that follows reinforce the role of instruction discussed in the preceding two sections.

The analysed values from the test results is provided below:

DATA 1C: MEANS AND STANDARD DEVIATIONS

Control group	Treatment group
$\bar{x}_1 = 5.5$	$\bar{x}_2 = 55.6$
$SD_1 = 13.78$	$SD_2 = 23.64$
$n_1 = 30$	$n_1 = 30$

The calculated test value is -10.04, therefore giving ground for the rejection of the null hypothesis. From the above discussions, there is enough statistical evidence to posit that form-focused instruction facilitated the learners' proficiency in simple wh-words as used in both declaratives and interrogatives and in compound wh-words as used in declaratives.

The differences in the test values for the three categories of sentences using wh-words is due to extraneous variables that will be discussed in chapter 5.

4.3. Meaning-focused instruction

The last two lessons of the research focused on encouraging learners to practise asking and answering questions in pairs and groups using the target words. Using illustrations, the teacher drew the learners' attention to how conversations can be managed. The average percentage of each type of exchange in the first six lessons and the last two lessons was calculated and an interaction analysis made. The results are shown below:

TABLE 2H: AVERAGE PERCENTAGE OF CLASSROOM EXCHANGES USING WH-WORDS

TYPE OF EXCHANGE	AVERAGE % IN THE FIRST SIX LESSONS	AVERAGE % IN THE LAST TWO LESSONS
T-C	53.65	36.42
C-T	22.48	5.27
T-P	7.53	5.32
P-T	16.52	6.39
P-P	0	46.48

From table 2H, it is evident that the teacher-talk and chorus responses dominated the first six lessons where focus was on form-focused instruction. 53.65% of the exchanges in the first six lessons involved the teacher addressing the whole class (T-C). This means that the teacher concentrated on giving explanations.

The class to teacher (C-T) responses also covered a reasonable percentage of exchanges, (22.48). This was mostly where the learners were made to repeat certain structures. Pupil-pupil interactions which encourage learners to manage conversations did not occur at all during the first six lessons. Comparatively, individual exchanges were encouraged in the last two lessons which saw a percentage increase in the teacher-pupil (T-P), pupil-teacher (P-T) and pupil-pupil exchanges. For each of the two responses, T-C and C-T, there was an average reduction of 17.20% in the last two

lessons. More pupil-pupil interaction was encouraged in lesson 7 and 8 with the purpose of inculcating the notion of using the target words in real life communication (c.f. appendix v).

The percentage raw scores for the pre-test and the post-test on conversation writing are given in table 2I below. The raw scores, unlike in similar previous tables, are grouped because the range of the scores was large, covering 27 different scores.

TABLE 2I: PERCENTAGE SCORES BEFORE AND AFTER INSTRUCTION FOR GROUP A

CLASS LIMITS OF % RAW SCORES	MIDPOINT	BEFORE INSTRUCTION		AFTER INSTRUCTION	
x	x_m	f	$f.x_m$	f	$f.x_m$
0- 9	4.5	18	81	1	4.5
10-19	14.5	2	29	4	58
20-29	24.5	8	196	12	294
30-39	34.5	2	69	7	241.5
40-49	44.5	0	0	3	133.5
50-59	54.5	0	0	3	163.5
TOTAL		30	375	30	895
		$\bar{x}\ \frac{375}{30}=12.5$		$\bar{x}=\frac{895}{30}=29.8$	

Though the raw scores and the means for the pre-test and the post-test are low compared to those in the preceding sections, there is a clear indication of improvement after instruction. Learners who appeared in the lower third bracket before instruction, i.e. between 0% and 19% were 20 compared to only 5 after instruction. Thus, three quarters of the learners who scored within this range before instruction moved into the higher brackets after instruction. While only 10 learners scored between 20% and 39% before instruction, the 'after' instruction results show a

higher figure of 19 learners within this range. Before instruction, no learner appeared in the upper third bracket compared to 6 after instruction, a clear indication of the positive effect of meaning-focused instruction. The mean also increased from 12.5 before instruction to 29.83, a value which is more than double the former. This means that there was an upward trend in the individual learners' scores.

The statistical significance of the means can now be determined. The sum of the differences is -575, which, when divided by the sample size, gives the mean of the differences as -19.16 with a standard deviation of the differences as 11.05. The sum of the squared differences is 14,563. The calculated test value from the above figures is -9.49. The value is significantly less than the critical value, providing ground for the rejection of the null hypothesis. It is therefore correct to conclude that an interactional approach, which gives an allowance for individual to individual interlocution in the classroom and practice based on the composition of coherent conversations, enhances communicative competence using the target structures - in the case of this research, wh-expressions.

4.4. Summary

It should be noted that the pre-test on conversation writing was administered after the learners had already received form-focused instruction on the target words. The significant difference that was realized in the means of the pre-test and the post-test manifests that form-focused and meaning-focused methods of instruction yielded different results in accordance with the specific objectives set. The relationship between these two methods is that one presupposes the other. That is, form-focused instruction emphasizes the construction of grammatically correct sentences. Meaning-

focused instruction on the other hand emphasizes the coherent joining of these sentences into a discourse unit and that these sentences must be grammatically correct.

4.5. The role of frequency of Wh-words in instruction

4.5.1. Introduction

The discussion in this section is centred on testing the third hypothesis. In each sub-section, a comparison between the number of times each word occurred in the pre-tests and post-tests and the number of correct responses from the learners is made. This comparison of the results gives an overview of the fact that by increasing the frequency of the target words during instruction, the number of correct responses also increased. In each section also, Pearson's product moment correlation coefficient (here-in-after PPMC) and its related t-test analysis are applied to determine the statistical significance of the relationship between the frequency of wh-words and its effect on the learners' proficient application of these words.

4.5.2. Frequency of simple wh-words as used in declarative sentences

As mentioned in section 3.2.1., two post-tests were administered after instruction. The expected total number of correct responses for the target words was 270 i.e. the sample size (30) multiplied by the number of the target words (9). In the pre-test, there were 29 correct responses (10.74% of the expected total number of correct responses). Below is the breakdown of correct responses per word:

whom - 0	what - 1	which - 1	whose - 1	
why - 1	who - 2	how - 2	where - 3	when - 18

From the above results, it is evident that the majority of the learners were unable to apply the first eight words appropriately in sentences. A satisfactory number (60%) of the learners used the word 'when' appropriately.

In brief, it is manifest that for all the words except 'whom', there was at least one learner who could apply each target word appropriately.

The post-test results indicate that as the frequency of each word increased, so did the number of correct responses. During the first instruction, the target words occurred 153 times in total. The following is the breakdown of the frequency per word:

when - 39	which - 32	where - 23	how - 21
what - 17	who - 14	why - 7	whose - 0
whom - 0			

Comparatively, the total number of correct responses increased from 29 to 69. Thus, the number of correct responses increased from 10.74% to 25.555 an increase by 14.81%. Below is the number of correct responses per word:

when - 22	what - 12	which - 9	who - 6
how - 6	why - 6	where - 5	whom - 2
whose - 1			

'Whom' and 'whose' had the least number of correct responses. The main reason is that these two words did not occur in the classroom discourse during the first instruction.

After the second instruction, the nine words had been used 448 times in total with the following sum of frequencies per word:

when - 78	which - 64	how -54	where - 52
who - 49	what - 46	whom - 39	why - 34
whose - 32			

The increased frequency per word in effect raised the number of correct responses as shown below:

when - 30	where - 24	what - 23	why - 20	
how - 18	whom - 15	which - 13	whose - 11	who - 9

In total there were 163 correct responses in comparison to 29 correct responses in the pre-test. This is an indication that there was a remarkable improvement because the number of correct responses increased by 49.59%, raising the percentage to 60.33%. The calculated PPMC after the first instruction is 0.801. This is a high positive correlation that shows a marked relationship between the frequency of simple wh-words and the learners' correct application of these words in declarative sentences. The application of Bluman's (1992) formula for the t-test using 0.801 at a 0.05 level of significance and with 2 degrees of freedom yields the value 7.083. The critical value using a two tailed analysis is 2.048. The test value falls with the critical region, providing ground for the rejection of the null hypothesis.

After the second instruction, the PPMC was 0.493 resulting into a test value of 2.998. This test value, too, falls within the rejection region, hence leading to the conclusion

that the frequent use of the target words facilitated the learners' proficient application of these words in declarative sentences.

A critical observation of the results shows that some words occurred more times than others but received fewer correct responses than words that occurred fewer times. It is worthy discussing this observation in some detail because the learners were subjected to similar conditions during instruction and testing. A comparison of four of the wh-words is made in the table below for the purpose of illustration:

TABLE 3A: FREQUENCIES COMPARED WITH THE NUMBER OF CORRECT RESPONSES

Word	Frequency	Number of correct responses	
		Before instruction	After instruction
when	78	18	30
who	49	6	9
whom	39	2	15
why	34	1	20

From table 3A, it is evident that before instruction, fewer learners could apply the words 'whom' and 'why' more appropriately than they could apply the word 'who'. After instruction, more learners were able to apply each of the words 'whom' and 'why' more appropriately than the word 'who' despite the fact that the latter word occurred more times.

One acceptable reason as to why there was a varied performance in the three words in the pre-test results could be what Krashen (1981) and Pica (1982) refer to as the level of difficulty. That is, the word 'why' in the context of the learners of this research was the most difficult and the word 'who' the least difficult. Alternatively, basing our

argument on the frequency hypothesis, it is correct to claim that the word 'who' had occurred more times in the preceding lessons before conducting this research (c.f. Brown's finding discussed on pg. 22 of this dissertation). However, the question that arises is why the after instruction results do not obey this rule of the most frequent word(s) receiving the highest number of correct responses.

The notion of perceptual salience postulated by Dulay and Burt (1977) can assist in answering this question. According to this notion, the words 'why' and 'whom' tend to have a greater amount of phonetic substance and a higher stress level than the word 'who'. That is, the afore-mentioned two words sound as though they are di-syllabic when pronounced while the latter sounds like more of mono-syllabic than the two. Consequently, this fact made 'why' and 'whom' more salient and thus easier for the learners to register. On the other hand the word 'when' fulfils all the above suggestions in the following ways:

(a) It had the highest number of correct responses even before instruction, which suggests that is was the easiest.

(b) Compared to the word 'who' the word 'when' has a greater perceptual salience.

(c) It had the highest frequency as well as the highest number of correct responses.

The last point in essence has a stronger support for the frequency hypothesis than (a) and (b). In this context, therefore, the primary determining factor for the word 'when' is the frequency because it occurred more times.

4.5.3. Frequency of simple wh-words as used in interrogative sentences

There was only one post-test administered on the use of simple wh-words in interrogative sentences. The major reason is that there was better response from the learners in this category of sentences. The differences will be noticed as the discussion in this section proceeds.

Just like in the case of declarative sentences, the expected total number of correct responses for interrogative sentences was 270. In the pre-test, there were 96 correct responses in total (35.55% of the expected total number of responses). This is quite a minimal percentage as it is below average. The following is a breakdown of the number of correct responses per word: (see a summary of this breakdown in appendix viii)

who - 18	what - 16	why - 13	where - 13
how - 12	which - 8	whose - 7	whom - 5
when - 4			

From the above results, it is evident that only two words, 'who' and 'what' received more than 50% of the expected total number of correct responses. However, the occurrence of each of the nine words severally in the classroom discourse during instruction realized an increase in the number of correct responses. To illustrate this a summary of the frequency figures and the number of correct responses for the words is outlined in the following paragraph.

Both the words 'when' and 'which' occurred 21 times and the number of correct responses increased from 4 and 8 to 11 and 20 respectively. Five words received 23 correct responses, though the number of times each word occurred differs. The list of the words with the frequency against each is as follows:

what - 33 where - 20 who - 29 how - 18 why - 27

Each of the words 'whose' and 'whom' occurred 19 times and the number of correct responses increased from 7 and 6 to 16 and 15 respectively.

Consequently, out of the expected 270 correct responses, post-test results reveals that the number of correct responses increased from 96 to 177 after the target words had been used 207 times in total. Thus, the percentage of the number of correct responses rose from 35.55 to 65.55. The difference of 30%, therefore, raised the results from below average to above average. The observation made in section 4.2. about the number of times each word occurred and the number of correct responses is also prevalent for simple wh-words as used in interrogative sentences. For instance, while the word 'what' occurred 33 times and the word 'how' only 18 times, both received 23 correct responses. On the other hand, the word 'when' and 'which' occurred the same number of times but the former had 11 correct responses while the latter had 20. The reasons attributed to this are no other than those discussed in the preceding section, that is, either a difference in the level of difficulty or in the perceptual salience.

The computed correlation coefficient for the two variables, i.e. frequency and the number of correct responses is 0.460. This is a moderate correlation showing a satisfactory relationship. Satisfactory in the sense that though the figure is not high

enough to be an indicator of a very strong relationship, it is not so low as to be negligible. The test value derived from the above correlation coefficient at 0.05 level of significance and with two degrees of freedom is 2.748. This value is greater than the critical value of 2.048 and hence falls within the rejection region. The decision is to reject the null hypothesis, implying that the frequent use of simple wh-words in the classroom discourse facilitated the learners' use of these words in interrogative sentences. These results provide empirical support for claims made about the modification of input by increasing the frequency of linguistic data in aiding comprehension and the final appropriate use of the target language features by the learners (c.f. discussion in section 2.3. of this dissertation).

4.5.4. Frequency of compound wh-words as used in declarative sentences

Unlike the case of simple wh-words, the expected total number of correct responses for compound wh-words as used in declarative sentences was 180, i.e. the sample size (30) multiplied by the number of words (6).

Before instruction, the word 'whatever' had 8 correct responses, the words 'whenever' and 'however', 4 each, 'whoever', 1 and 'wherever' and 'whichever' received no correct responses. This adds up to 17 correct responses (9.445% of the expected total number of correct responses). This percentage is far much below average. The expected total number of correct responses for each word was 30. Looking at the responses above, it is evident that not a single word received 27% or above of the expected number of responses. This implies that the majority of learners could not apply the target words appropriately in sentences.

After instruction, the target words had been used in the classroom discourse 240 times. The breakdown for the frequency of each word is as follows:

whatever - 50	whenever - 44	whoever - 37
however - 49	whichever - 35	wherever - 25

Consequently, the number of correct responses for each word increased as is shown below:

whatever from 8 to 22,	however from 4 to 17
whenever from 4 to 25,	whoever from 1 to 13
whichever from 0 to 12,	wherever from 0 to 10.

From the above comparison it can be deduced that no word received less than 33% of the expected number of responses, an indication that there was a fair improvement. Three words 'whenever', 'whatever' and 'however' had each more than 50% of the expected responses.

Thus, the total number of correct responses increased from 17 to 99 (55% of the expected total). The percentage shot up from below average to 45.56% which is quite remarkable and gives an overview picture of the positive effect of increased frequency on the learners' appropriate application of compound wh-words in declarative sentences. This can also be proved statistically as is shown in the next paragraph.

The calculated PPMC is 0.787. This is a high correlation that indicates a marked relationship between the frequency of the target words and the number of correct responses. That is, the correlation is high enough to be depended upon and accepted without much doubt.

Using the same level of significance, critical value and degrees of freedom like in the preceding sections, the test value is 6.747 which is greater than the critical value of 2.048. Due to the fact that the test value falls within the rejection region, the decision is to reject the null hypothesis and posit that the frequent use of compound wh-words in the classroom discourse facilitated the learners' proficient use of these words in declarative sentences.

4.5.5. Summary

The discussions and statistical evidence adduced in section 4.5.2., 4.5.3. and 4.5.4. provide ground for accepting the third hypothesis stated on page 6 of this dissertation, that frequent use of wh-words facilitates the learners' proficient application of these words in sentences and in written conversations.

CHAPTER FIVE

5.0. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The data analysis in chapter four provides some important insights on the teaching of English in the classroom environment. In the next sections of this chapter, important findings will be discussed, from which conclusions and recommendations will be drawn.

5.2. Findings

In Section 1.7., paragraph 3 of this thesis, it was clearly stated that the positive effects of instruction would be reflected at different levels in individual learners. The results of this study reveal no alteration in this assertion.

A keen study of the test scores in all categories of wh-words reflects that low scores were realized in the 0% and 100% brackets while higher scores were realized in the medial brackets. For instance in test one, no pupil scored 0%, 7 scored 44% and 2 scored 100%. In test three, no learner scored 0%, 9 scored 50% and 2 scored 100%. A similar trend is prevalent in the other test results. Graphical representation for all the tests administered after instruction approximate to a normal curve. However, graphical representation before instruction for all the tests display positively skewed distributions, an indication that more learners scored lower marks than those who scored either average or high marks - i.e. the majority of the data values fall to the left of the mean.

Another important observation made is that learners performed better on the discrete point tests than on the integrated test. By the time the learners were pre-tested on the fourth test, they had already received instruction in six lessons on how to use wh-words in sentences. They then received instruction on how to organize these sentences into conversations. The mean scores for the first three tests are 55.2, 72.76 and 55.56 respectively. All these mean scores are greater than 29.8 for test four. The difference between this mean score and each of the other three mean scores is significantly large, implying that discrete point tests proved easier for the learners.

The difference between the mean score of test four before instruction and each of the mean scores of the discrete point tests points to the fact that a different approach besides form-focused instruction was required to make learners score higher on this test. Therefore, the third finding from the data is that increased pupil-pupil interaction enhanced the learners' ability to write conversations. In the previous lessons, the teacher had been instructed to deliberately avoid initiating pupil-pupil interaction. As a result, 46.48% of the exchanges in the last two lessons were pupil-pupil. The remaining 53.52% was covered by the other four types of exchanges. Therefore, on average, each of the other types of exchanges covered only 13.38%.

The fact that test one and test three had an almost equal mean score while test two was higher by about 17 is another important observation. This is crucial because in sections 4.5.2 through 4.5.4 of this thesis, discussions about the frequency of occurrence of wh-words in the classroom discourse and the number of correct responses are made. From the analyses of the frequencies in these sections, it is noted that simple wh-words as used in declaratives occurred 448 times during the period of

instruction, simple wh-words as used in interrogatives occurred 207 times while compound wh-words as used in declaratives occurred 240 times. Whereas wh-words as used in interrogatives occurred the fewest number of times, it is test two which has the highest mean score. This affirms the stipulation that it is not the most frequent language features that are acquired first.

From discussions in the preceding chapters, mention about the dual approach towards testing the frequency hypothesis was made. One of the approaches that has been widely researched upon is the one that focuses on the morpheme order of acquisition among learners of different levels. Such studies found no significant relationship between increased frequency of specific morphemes and performance. The original framing of this hypothesis by Hatch (1974) posits that more frequent features are acquired before the less frequent. The analysis in chapter four of this thesis indicates that increased frequency of wh-words assists learners' acquisition of structures related to these words despite the fact that it is not a guarantee that the most frequent features are acquired first. In reference to table 3A on page 54 of this thesis, a first glance reveals that the word 'when' was the most frequently used and as a result, it received the largest number of correct responses. But this is not true about the relationship between frequency and performance for the words 'who', 'whom' and 'why'. For instance, while the word 'who' occurred 49 times and the word 'why' 34 times, the latter had over twice as many correct responses as the former.

5.3. Conclusions

Though there was no a hundred percent achievement from instruction, it is manifest that instruction had a positive effect in facilitating proficiency and communicative

competence of the learners in using wh-words. These results provide more empirical evidence that exists on the role of instruction in the classroom environment.

First, there is enough proof from the results that form-focused instruction, which encompasses several methods such as the direct method, the grammar translation method, the oral and situational language teaching, the audiolingual method, Total Physical Response, the structural method and the reading method can provide beneficial learning opportunities in a more diversified scope. If applied over a longer period than was the case in this study, it is certain this method can train learners on the four language skills of listening, speaking, reading and writing.

In the second place, meaning-focused instruction was found to be an important factor in teaching the skills of communication though in essence, it requires a long period for the learners to master the rules of coherent and cohesive organization of sentences into discourse. Following the improvement brought by pupil-pupil interaction, it can be concluded that peer interlocution is a vital tool in creating a relaxed environment which promotes learner participation. Consequently, language as a medium for communication is appreciated by the learners.

While it was found out that it is not the most frequent features which are acquired first, the evidence provided by the research gives ground for positing that the conscious increasing of the frequency of wh-words and their use in the classroom discourse made them salient and in turn increased their capacity to be acquired. The statistical evidence in section 4.5. supports this.

5.4 Recommendations

Based on the conceptual principles underlying this research, an integrated methodology in the classroom is recommended. The different techniques complement one another. From the grammatical point of view, the chosen language features, for instance wh-words, should be used in as many sentential contexts as possible. The use of substitution tables could be of great help in this case.

After this first stage, the next recommendation is to have learners interact with each other as much as possible using the target language features that have been earmarked for acquisition. Language games and short conversations may be dramatized. In this way, learners take greater initiative or assume more responsibility for their own learning. This encourages in-class oral interaction, which in turn increases comprehension of input.

Thirdly, the concept of frequency needs to be investigated more extensively than has already been done. One suggestion is to divide the target language features into two groups. The design should be devised in such a way that one group of the target language structures does not occur at all in the classroom discourse while the other should occur as many times as possible over a specified period of time. What should then be established is the specific number of times each word should appear and the particular length of time required to cover specified language features to a level that can be considered to have enabled the learner to master them, including the type of constraints that are required to precipitate acquisition.

Finally, the necessity, suitability and control of comprehension checks, confirmation checks and clarification requests requires more research. One factor that was observed is that the excessive application of these units may result into redundancy thus failing to serve the purpose for which they are intended. For instance, the teacher in the main study over used the tag 'isn't it?' and he tended to 'perch' it even where it was not relevant. Consequently, in most of the cases, he received no response from the learners, implying that the confirmation check had been misplaced and served no purpose at all. A clear study that identifies and lists the types of these units and where and when they are applicable can be of great assistance in pedagogy.

5.5. Summary

In chapter one of this thesis, three major objectives of the research are outlined. The results of the data analysis prove that these objectives have been achieved. In chapter three, the statistical tests reveal that if specific grammatical structures (e.g. wh-expressions in this study) are selected and specifically focused upon during instruction, their salience will automatically highlight them as candidates for acquisition. Consequently, the learner will soon register them in his mind and attempt to use them appropriately as required. Secondly, instruction based on an interactional approach, where most activities involve teacher-learner and learner-learner interlocution, precipitate the learners' ability to compose discourse units that are both cohesive and coherent. The fact that these two methods of instruction are distinct from each other has been verified by the comparison of test results in the preceding sections of chapter four and those in section 4.3. What, therefore, Ellis (1990) advocated for as potential methods of second language teaching, are in this context, acceptable as they are or with modifications which are supported by empirical

evidence. Finally, the controversial frequency hypothesis has been proved workable in this study from an instructional perspective. The claims by the morpheme order of acquisition theorists about the shakeable constancy of the hypothesis do not outrightly disqualify its role in pedagogy as has been demonstrated in section 4.5. Increased frequency of occurrence of the target language structures has a role to play in the learners' acquisition of such structures. It should clearly be noted that by the end of the research, the scores were not 100% for every pupil involved. This is clearly an indication of an interplay of other variables that affect learning but which were not directly the concern of this study (see 'scope' in section 1.6. of this thesis). Meanwhile as Allwright (1988) posits, we should at least follow Faerch, Haastrop and Phillipson and do everything possible to encourage teachers to join the research enterprise. This is vital because they are the main media through which the researcher's findings are relayed to the learners.

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APPENDICES

Appendix I

The Pilot Study

Before the main study, a pilot study was conducted in two schools within Central Marachi location of Busia District. The major objectives of the pilot study were:

(a) to test the validity and reliability for the two main elicitation instruments, i.e. the tests ad the observation schedule.

(b) to ascertain how best the research schedule could be fitted into the normal school routine.

(c) to test the viability of the teaching procedures (see objectives in section 1.4).

The Sample

The stratified sampling technique was used. Six pupils, three males and three females, were involved. Considering their general class performance, the subjects were classified into three categories; two were drawn from the upper third bracket, two from the middle third and two from the lower third. This was mainly to ensure that the sample was approximately representative of a normal distribution.

The results

All the test values (t-value) for in-group scores fell within the rejection region. Test 1A had a t-value of -2.245, 1B, -10.548 and 1C, -4.745 in comparison to a critical value of -2.015. This implies that the research design had 100% reliability and validity indices and could therefore be dependent upon to achieve the objectives of the research. However, the instructions of test 1B were rephrased to get rid of ambiguity.

There was a slight variation in the comparison of in-group and out-group results. Tests 1B and 1C had t-values of -2.224 and -4.506 respectively. Both figures falling within the rejection region reinforces the fact established from the in-group results. The t-value of test 1A was 1.138, thus falling outside the rejection region. This provides ground for accepting the null hypothesis. Despite this, no alterations were made to this test as other factors besides the form or content of the test must have contributed to the diverse results.

The following reasons support this claim:

(a) In-group results for all the three tests administered and out-group results for two of the tests reflect the fact that instruction had a positive effect on learners' scores because five out of six tests- (i.e.8 3% of the tests) provided evidence in support of the effect of instruction.

(b) Pre-test results reveal that even without receiving instruction, the control group learners had more ability to use some of the wh-words appropriately in sentences that the learners in the treatment group. Thus, while no single learner in the treatment group could use any of the target words appropriately before instruction, the control group recorded 8 correct responses out of the expected 54 (14.81%) for test 1A, 15 out of 54 (27.7%) for test 1B and 2 out of 36 (5.5%) for test 1C.

(c) The probability that the learners in the treatment group could perform better on test 1A than the control group if instruction was to be prolonged is high enough. This is because:

i) While there was gradual improvement in test scores after every period of instruction for the treatment group, there was stagnation of scores in the control group.

ii) A comparison of test values for the first three periods of testing for test 1B would have led to a similar conclusion reached in test 1A. Therefore, by using only the first three tests, the null hypothesis would have been accepted. However, continued instruction for the treatment group reversed the results.

The observation schedule

The encoding and decoding of the frequency of each word on the observation schedule was found practicable. The computed correlation coefficients and their related t-test analysis revealed that increased frequency of each target word contributed to the learner's improved proficiency levels. Hence the instrument was adopted.

The research design

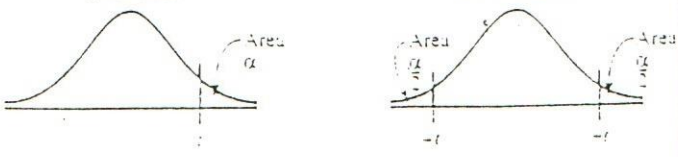
Dealing with only section of the class posed several shortcomings. First, it required that the sample used for research be allocated a separate room. Special arrangements were also made so that the rest of the learners not participating in the research were occupied by a different teacher. On the other hand, special time was allocated to the learners participating in the research to cover up what the rest had been taught. This made it necessary to deal with whole classes during the main research.

Appendix ii

The t Distribution

	α values					
	One Tail	0.25	0.10	0.05	0.025	0.01	0.005
d.f.	Two Tails*	0.50	0.20	0.10	0.05	0.02	0.01
1		1.000	3.078	6.314	12.706	31.821	63.657
2		.816	1.886	2.920	4.303	6.965	9.925
3		.765	1.638	2.353	3.182	4.541	5.841
4		.741	1.533	2.132	2.776	3.747	4.604
5		.727	1.476	2.015	2.571	3.365	4.032
6		.718	1.440	1.943	2.447	3.143	3.707
7		.711	1.415	1.895	2.365	2.998	3.499
8		.706	1.397	1.860	2.306	2.896	3.355
9		.703	1.383	1.833	2.262	2.821	3.250
10		.700	1.372	1.812	2.228	2.764	3.169
11		.697	1.363	1.796	2.201	2.718	3.106
12		.695	1.356	1.782	2.179	2.681	3.055
13		.694	1.350	1.771	2.160	2.650	3.012
14		.692	1.345	1.761	2.145	2.624	2.977
15		.691	1.341	1.753	2.131	2.602	2.947
16		.690	1.337	1.746	2.120	2.583	2.921
17		.689	1.333	1.740	2.110	2.567	2.898
18		.688	1.330	1.734	2.101	2.552	2.878
19		.688	1.328	1.729	2.093	2.539	2.861
20		.687	1.325	1.725	2.086	2.528	2.845
21		.686	1.323	1.721	2.080	2.518	2.831
22		.686	1.321	1.717	2.074	2.508	2.819
23		.685	1.319	1.714	2.069	2.500	2.807
24		.685	1.318	1.711	2.064	2.492	2.797
25		.684	1.316	1.708	2.060	2.485	2.787
26		.684	1.315	1.706	2.056	2.479	2.779
27		.684	1.314	1.703	2.052	2.473	2.771
28		.683	1.313	1.701	2.048	2.467	2.763
29		.683	1.311	1.699	2.045	2.462	2.756
$(z)\ \infty$		.674	1.282[a]	1.645[b]	1.960	2.326[c]	2.576[d]

Source: Bluman G. Allan, Elementary Statistics, (1992).



Appendix iii

Sample of observation schedule

SOURCE	DIRECTED TO	TYPE OF STATEMENT	TYPE OF QUESTION	TYPE OF RESPONSE
T	C			
C	T	WHO		O.W/CH
C	C	WHO		
C	C	WHO		
C	P	WHO		CL
C	C			
C	T	WHO		CH/CL
C	C	WHO		CL
C	P			
P	T	WHO		CL
C	C	WHO		CL
C	P			
P	T	WHO		CL
T	C	WHOM		CL
C	T	WHOM		O.W/CL
C	T	WHOM		CH/CL
T	C	WHOM		CL
T	C	WHOM		CL
T	C	WHOM		CL
T	C	WHO		CL
T	C	WHOM		CL
T	C	WHOM		CL
T	C	WHOM		CL
T	C			
C	T	WHOM		CH/CL
C	T	WHOM		CH/CL
T	C		WHAT	CL
T	C	WHOM		
T	C	WHOM	WHO	
T	C		WHO	
C	T	WHOM	WHO	

NB. O.W. - One Word response
CL - Response using a clause
CH - Chorus response

Appendix iv

Summary of the language background of the subjects

(a)

FATHER'S LINGUISTIC GROUP	NO. OF SUBJECTS
LUHYIA	42
LUO	6
TOTAL	48

(b)

MOTHER'S LINGUISTIC GROUP	NO. OF SUBJECTS
LUHYIA	39
LUO	8
GANDA	1
TOTAL	48

(c)

LANGUAGE(S) SPOKEN AT HOME	NO. OF SUBJECTS
LUHYIA	42
LUHYIA AND LUO	6
TOTAL	48

Appendix v (a)

Standard six

Conversation I: Ochieng's supper

ACHIENG': What did you eat for supper?

OCHIENG': Ugali with 'Omena'.

ACHIENG': Who bought the 'Omena?'

OCHIENG': It was my Father.

ACHIENG': Your Father? Why not your Mother?

OCHIENG': Is there anything wrong if my father buys Omena?

ACHIENG': I think that's women's work.

OCHIENG': Where is that rule written?

ACHIENG': Well, not all rules in society are written down.

OCHIENG': Hmm.....Which book has the rules of society?

ACHIENG': Er....., the Bible.

OCHIENG': How do you know. The Bible does not talk of Africans.

ACHIENG': When will you ever accept the right things? You like arguing everytime.

OCHIENG': Aaah....no. Whose mistake is it?

I can't agree with you if you are a liar.

ACHIENG': Whom are you calling a liar?

And you are silly because you don't understand things.

Appendix v(b)

Standard six

Conversation ii: Ouma's joke

OGOLLA: What is your name?

OUMA: Ouma Peter.

OGOLLA: Where do you come from?

OUMA: Near Murumba Market.

OGOLLA: Who is your father?

OUMA: My father is Peter Ouma.

OGOLLA: Ah.....no. How can you have the same names with your father?

OUMA: Why not? It is very possible.

OGOLLA: Now, Which is your christian name?

OUMA: That's a foolish question.

OGOLLA: Whom are you calling foolish? I'll beat you.

OUMA: Oh...When will you learn to tell that somebody is joking?

OGOLLA: We are not joking! Whose Son are you?

Peter Ouma cannot be the son of Peter Ouma"

OUMA: Well.....well, my father is called Alfred Ouma.

OGOLLA: Yes, I think you have now told me the truth.

Appendix vi(a)

TEST ONE

USE EACH OF THE FOLLOWING WORDS TO WRITE A STATEMENT (I.E. A SENTENCE WHICH IS NOT A QUESTION)

i) What	ii) When	iii) Where
iv) Which	v) Who	iv) How
vii) Why	viii) Whose	ix) Whom

TEST TWO

WRITE A QUESTION BEGINNING WITH EACH OF THE FOLLOWING WORDS.

THERE WILL BE NINE QUESTIONS IN ALL.

i) What	ii) When	iii) When
iv) Which	v) Who	vi) How
vii) Why	viii) Whose	ix) Whom

TEST THREE

USE EACH OF THE FOLLOWING WORDS IN A SENTENCE

i) Whatever	ii) Whenever
iii) Wherever	iv) Whichever
v) Whoever	vi) However

Appendix vi(b)

TEST FOUR

(a) Your uncle has lent you a bicycle to ride. You meet your friend Nandwa who doesn't know how to ride. He insists that you teach him. At first you refuse, but later on you accept. Then Nandwa has an accident with the bicycle. Write the conversation you have with Nandwa from the time you meet until the accident occurs using each of the words listed below twice, that is in a statement and in a question. The first two lines have been done for you. Choose the words in any order you like.

Example:

NANDWA: Whose bicycle is this?

OKUMU: Aa....Nandwa, don't tell me you don't know whose it is.

LIST OF WORDS

What, When, Where, Which, Who, How, Why, Whose, Whom.

(b) Your best friend annoys you because he/she has lost your new English text-book. Write the conversation you have with him/her using each of the words below only once. Choose the words in any order you like.

LIST OF WORDS

Whatever, Whenever, Wherever, Whichever, Whoever, However.

Appendix vii(a)

Sum of differences and squared differences of in-group scores for declaratives

SUBJECT	SCORE BEFORE INSTRUCTION X_1	SCORE AFTER INSTRUCTION X_2	(X_1-X_2)	$(X_1-X_2)^2$
1	78	100	-22	484
2	11	67	-56	3,136
3	33	89	-56	3,136
4	0	22	-22	484
5	0	11	-11	121
6	11	67	-56	3,136
7	11	44	-33	1,089
8	0	67	-67	4,489
9	22	22	-0	0
10	0	11	-11	121
11	11	33	-22	484
12	11	33	-22	484
13	0	11	-11	121
14	11	33	-22	484
15	0	11	-11	121
16	11	22	-11	121
17	11	11	-0	0
18	0	11	-11	121
19	0	11	-11	121
20	11	11	-0	0
21	0	0	-0	0
22	11	0	-11	121
23	11	11	-0	0
24	0	11	-11	121
25	0	11	-11	121
26	0	22	-22	484
27	0	0	-0	0
28	0	33	-33	1,089
29	0	0	-0	0
30	11	22	-11	121
			Σ=-554	ΣD^2=20,310

Appendix vii (b)

Mean and standard deviation of the treatment group for test one A

SUBJECT	RAW SCORE (X)	(X-X)	$(X-X)^2$
1	89	33.8	1142.44
2	56	0.8	0.64
3	56	0.8	0.64
4	22	-33.2	1102.24
5	78	22.8	519.84
6	78	22.8	519.84
7	78	22.8	519.84
8	67	11.8	139.24
9	22	-33.2	1102.24
10	44	-11.2	125.44
11	56	0.8	0.64
12	33	-22.2	192.84
13	56	0.8	0.64
14	78	22.8	519.84
15	100	44.8	2007.04
16	44	-11.2	125.44
17	56	0.8	0.64
18	56	0.8	0.64
19	33	-22.2	492.84
20	44	-11.2	125.44
21	33	-22.2	492.84
22	67	11.8	139.24
23	22	-33.2	1102.24
24	44	-11.2	125.44
25	56	0.8	0.64
26	44	-11.2	125.44
27	100	44.8	2007.04
28	67	11.8	139.44
29	33	-22.2	492.84
30	44	-11.2	125.44
Sum of:	X=1656	(X-X)=0	$(X-X)^2$=12936

Variance (S) $= \frac{12936}{30}$ Standard Deviation (SD) $= \sqrt{431/2} = 20.765$

Appendix viii

(A) A summary of the frequencies and number of correct responses for simple wh-words before and after instruction

Word	Frequency			No. of Correct Responses		
	B.I.	A.F.I.	A.S.I.	B.I.	A.F.I.	A.S.I.
Whom	-	0	39	0	2	15
What	-	17	46	1	12	26
Which	-	32	64	1	9	13
Whose	-	0	32	1	1	11
Why	-	7	34	1	6	20
Who	-	14	49	2	6	9
How	-	21	54	2	6	18
Where	-	23	52	3	5	24
When	-	39	78	18	22	30

(b) A summary of frequencies and number of correct responses for compound wh-words before and after instruction

Word	Frequency		Number of Correct Responses	
	B.I.	A.I.	B.I.	A.I
Whoever	-	37	1	13
Whatever	-	50	8	22
Whenever	-	44	4	25
However	-	49	4	17
Wherever	-	25	0	10
Whichever	-	35	0	12

NB: A.F.I. - After first instruction

A.I. - After Instruction

A.S.I. - After Second Instruction

B.I. - Before Instruction

Appendix ix

Formula for the Correlation Coefficient r

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[n(\Sigma x^2) - (\Sigma x)^2][n(\Sigma y^2) - (\Sigma y)^2]}}$$

where n is the number of data pairs.

Formula for the t test for the Correlation Coefficient

$$t = r\sqrt{\frac{n-2}{1-r^2}}$$

with degrees of freedom equal to $n - 2$.

Formulas for the Two *t* Tests

Variances are assumed to be unequal:

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

where the degrees of freedom are equal to the smaller of $n_1 - 1$ or $n_2 - 1$.

Variances are assumed to be equal:

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where the degrees of freedom are equal to $n_1 + n_2 - 2$.

When the variances are unequal, the first formula

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

follows the format of

$$\text{test value} = \frac{\text{(observed value)} - \text{(expected value)}}{\text{standard error}}$$