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# **A Comparison of the Effects of Implicit/Explicit and Immediate/Delayed Corrective Feedback on Learners' Performance in Tailor-Made Tests**

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## Abstract

The study investigated the effects of correction of learners' grammatical errors on acquisition. Specifically, it compared the effects of timing of correction (immediate versus delayed correction) and manner of correction (explicit versus implicit correction). It also investigated the relative effects of correction of morphological versus syntactic features and correction of developmental early versus developmental late features.

Data for the study were collected from 56 intermediate level students of English as a Foreign Language in Iranian university and private language school settings. Each participant was required to read and then retell a written text in their own words during an oral interview with the researcher. During or following the interview the researcher corrected the participants on their grammatical errors implicitly (using recasts) or explicitly (providing metalinguistic information). Individualised tests focusing on the errors that had been corrected were constructed for each participant and administered. Statistical analyses were conducted on the scores the participants received on their individualised tests.

Results showed no significant differences for timing of correction. However, significant differences were found for manner of correction. Participants who received explicit correction gained significantly higher scores than those who received implicit correction. This finding lends support to the argument of Schmidt (1994) concerning the role of metalinguistic awareness in language acquisition. Correction of morphological features was found to be more effective than that of syntactic features. It is argued that morphological features are generally learnt as items whereas syntactic features involve system learning. Correction of developmental early features was found to be more effective than correction of developmental late features. This finding lends support to suggestions that corrective feedback (like other types of form-focused instruction) needs to take into account learners' cognitive readiness to acquire features (Pienemann 1984; Mackey 1999).

Analyses of the interactions between independent variables were also conducted. It was found that explicit correction was more effective for the acquisition of developmental early features and implicit correction was more effective for the acquisition of developmental late features

The implications of these results for both second language acquisition and language pedagogy are considered.

## **Dedication**

***To my father whose loving care and encouragement was with me all his life and did not live on to see the completion of this work.***

***To my beloved mum who had to bear dad's departure and my absence in the time of hardship and whose patience supported me in the journey.***

***And***

***To Bahram and Mohammad with loving memory.***

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## List of Abbreviations

CF	Corrective Feedback
Corr.	Correction
Del.	Delayed
Dev.	Developmental
E.F.L.	English as a Foreign Language
E.S.L.	English as a Second language
Exp.	Explicit
Fig.	Figure
Freq.	Frequency
Imp.	Implicit
Immed.	Immediate
Irreg.	Irregular
MS	Mean Score
Morph.	Morphological
MP	Mean Percentage
SD	Standard Deviation
Reg.	Regular
Synt.	Syntactic
TC	Total Number of Corrections
TOEFL	Teaching of English to Students of Other Languages



## CHAPTER ONE INTRODUCTION

### 1.1 CONTEXT OF THE PROBLEM

Error correction has been recognised as vital in second language acquisition and teaching in the last two decades. Interest in the study of error correction emerged as a response to views held by the proponents of contrastive analysis. Contrastive analysts saw language transfer as the main source of errors for second language learners. As contrastive analysis fell into disfavour with the emergence of Chomsky's generative grammar, error correction continued to be crucial in the error analysis period.

According to the error analysis hypothesis, learners' performance is a window into an understanding of their cognitive processes. More specifically, errors are evidence of the processes and strategies of language acquisition. Learners are assumed to create a language system known as interlanguage, in which learners themselves impose structure on the available linguistic data from both languages. Selinker (1972) used this term to refer to independent systematic knowledge of a language that native language children as well as second language learners hold in the process of learning. Learners formulate an internalized system which enables them to synthesise linguistic data. This system is independent of both the learner's native language and the target language.

The significance of work on error correction continued to grow with the increase in the research on form-focused instruction (Long and Robinson 1998; Doughty and Williams 1998). This is defined as a kind of instruction in which the learners' primary focus is drawn on linguistic form (Ellis 2000).

Form-focused instruction can further be divided into two types, distinguished from each other nominally only by singular versus plural terms: focus on forms and focus on form. The focus on forms approach involves teaching grammar in isolation as the main purpose. It is an attempt to teach isolated linguistic forms in accordance with a

structural syllabus. In this attempt the teacher pre-selects specific forms for attention. Meaning and communication play a lesser role in this type of instruction. In other words, it is not a meaning-centred approach. Krashen (1981) believes that focus on forms cannot help learners acquire structures and that it hinders language learning. He argues that what in fact promotes acquisition is the meaningful interaction.

Focus on form involves focusing the learners' attention on form when the primary purpose is on meaning rather than on grammar. Long (1991) defines focus on form as a method that "overtly draws students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication" (pp. 45–46). Long believes that, for acquisition to take place, attention to meaning alone is not sufficient and that some degree of attention to form is also required.

However, as well as the issue of focus on form or forms, the issue of learner attention emerged as another significant factor in language acquisition. Attention is believed by some researchers (Schmidt, 1990, 1994, 2001; Schmidt and Frota, 1986; Ellis, 1991) to have a crucial role in learning. Some of these researchers go so far as to claim that subliminal learning is impossible and that learning is the product of the conscious noticing of forms. Learner attention is essential for focus on forms to be beneficial to learners.

Focus on form can be classified into two different classes: proactive focus on form and reactive focus on form. The former refers to occasions when focus on form is planned in advance. In this type, pre-selected forms are taught through interaction. The latter refers to the reaction of the interlocutor to the learners' errors. Instruction is in fact a proactive response to problem areas. That is to say, teachers can plan in advance to ensure that focus on form will occur. Error correction is considered to be a reactive focus on form. In the present research, the terms error correction and corrective feedback are used to refer to the way in which the researcher responds to learners' errors. They also refer to the information which is given to learners to revise their interlanguage. The term reactive focus on form is used only occasionally to emphasize that correction is reactive.

Reactive focus on form (error correction) can be categorized according to whether the response to the learners' errors is provided to them immediately after they make errors or sometime after (in delayed manner). This allows investigation of whether error correction works better when it takes place in an interactional context or an isolated setting. Some researchers (Tomasello & Herron 1988, 1989; Doughty and Williams, 1998; Doughty, 2001) argue that the best time to provide feedback to learners is when they are processing the input, and when there is a need for a form to fill the gap between their interlanguage and the target language.

However, according to Doughty (2001), there are four logical possibilities for error correction. One possibility involves simultaneous (at precisely the time when the learner need arises) implicit attention to forms, meaning, and function (Doughty and Williams, 1998). The second possibility is that implicit or explicit attention to forms takes place shortly in advance of learner need arising (Dekeyser, 1998 Lightbown, 1998). The third possibility is a brief, implicit or explicit shift of attention from meaning and function to forms at precisely the time when the learner need arises (Long and Robinson, 1998). The final possibility is that implicit attention is given to forms shortly after learner need appears (Doughty and Varela, 1998; Long, Inagaki, and Ortega, 1998). However, there is a lack of sufficient evidence to support these researchers' claims and there has been no work (to the best of my knowledge) comparing the effectiveness of immediate reactive focus on form (immediate correction) with the effectiveness of delayed reactive focus on form (delayed correction).

Error correction can be explicit or implicit. The effect of learning under explicit and implicit conditions has long been a controversial issue in the field of psychology. Most experimental studies in this area (Reber, 1976, 1993; Reber & Allen 1978; Zizak and Reber, 2004) show that learning entails complex stimuli without conscious awareness. Most of these studies used artificial languages in their tasks as stimuli. However, in the domain of second language acquisition, where natural languages are used, it is not clear how readily these findings can be generalized.

In second language learning, the main body of research has been very much in response to Krashen's claim that learners only learn through unconscious acquisition. Learning, he claims, which is conscious, does not lead to acquisition, which is unconscious, and acts only as a monitor. However the main concern of language learning is not so much the distinction between conscious and unconscious learning. A more important issue is the degree of explicitness and implicitness of learning. As Robinson (1996b:7) argues, "engaging in such research is likely to provide a clearer individual base for the speculations of second language theorists regarding the extent to which unconscious learning of forms is, or is not, possible". Moreover, the extent to which explicit and implicit error correction can be effective in restructuring the learners' interlanguage is theoretically and pedagogically critical: It may provide a clear understanding of how the human cognitive system operates when acquiring a second language. Also, it may provide practitioners with better strategies in choosing when to correct the learners explicitly and when to do so implicitly.

In addition to the manner and timing of error correction, there are a number of questions relating to types and developmental aspects of forms. Decisions regarding which errors to correct impose responsibility on the second language teacher. Questions such as: 'which errors are amenable to error correction?'; 'are some errors resistant to error correction?'; 'are the common and persistent errors the best candidates for correction?'; and 'can error correction facilitate the learning of 'early developmental errors' or 'late developmental errors'?' are still unresolved issues in second language acquisition. There are two important issues involved here: (1) the linguistic type and developmental nature of errors and (2) the effect of timing and manner of correction on the types of errors that need to be corrected.

Most of the early studies were conducted on the communicative aspects of errors (i.e. whether the absence or presence of errors brings any changes to the meaning of utterance), their relation to other parts of the sentence and whether they were frequent, general, stigmatizing, local or global (Burt, 1975; Cohen, 1975; Dresdner, 1973; Allwright, 1975; Hendrickson, 1978; George 1972; Johansson, 1973). Most of these studies used written production of learners for eliciting information on learners' interlanguage. Recent studies, however, have focused more on the acquisitional

aspects and developmental nature of forms (Doughty and Varela, 1998; Carroll & Swain, 1992, 1993; Pienemann, 1987, 1989; Pienemann and Johnston, 1986; Harley, 1989; Day and Shapson, 1991; Lyster, 1994; VanPatten & Sanz, 1995; Salaberry, 1997; Williams and Evans, 1998; Muranoi, 2000; Long, Inagaki, & Ortega 1998; Mackey, 1999). Although some of these studies used communicative tasks (like information gap), in their designs, most of them have not actually focused on the subjects' spontaneous production where they can receive oral feedback on their utterances. The measures of acquisition were all based on free production, including narratives, picture description, role-plays, information-gap tasks, and reports. Most of the free-production activities were oral but some were also written.

## 1.2 STATEMENT OF THE PROBLEM

Research on error correction has not provided a clear understanding of the benefits of error correction on learning. The term 'learning' has been used by Krashen (1981), to refer to the development of conscious knowledge. Krashen and Terrel (1983:26) define acquisition as 'developing competence by using language for real communication'. However, this research is concerned with learning and not acquisition.

First, we still do not know what makes correction of some features sometimes successful and sometimes unsuccessful in terms of learning. We are not exactly sure whether the timing of intervention makes any difference in the outcome of correction. Second, the existing research on the manner of correction of errors is limited. For instance, we do not know whether explicit or implicit correction helps learners more in restructuring their interlanguage. Third, the body of research does not give us a clear picture of whether the manner and timing of correction have any effect on learning, and, if they have, whether manner and timing affect the types of structures corrected. Fourthly, we do not have enough evidence as to which types of structures in the target language are more amenable to learning than others. More specifically, it is crucial to know whether learners learn better when they are corrected on their

morphological errors or on their syntactic errors. So far work on this aspect of correction has been limited. Finally, despite the fact that some research has been conducted on the order of acquisition of a number of morphemes and syntactic structures, we do not know which group of early or late acquired features benefits more from correction. Therefore, there is a need for further analysis of issues such as proper timing in correction, manner (implicitness and explicitness) of correction and the learnability of the type and developmental aspect of forms.

### 1.3 PURPOSE OF THE STUDY

The study reported in this thesis has been conducted in an attempt to meet the need for more research on error correction and to increase understanding of the following factors:

1. Timing of correction: immediate versus delayed correction. Immediate correction is concerned with stopping learners on the spot and correcting them irrespective of whether or not they are in the middle of conversation. Delayed correction deals with instances where correction takes place after the learner ceases talking.

2. Manner of correction: explicit versus implicit correction. Explicit correction refers to the process of providing the learner with direct forms of feedback. According to Carroll & Swain (1992), teachers can explicitly state that the learners' utterance is wrong. By doing this, they direct the attention of the learner to the erroneous point. Explicit correction in this study consists of metalinguistic explanation of the erroneous structure. However, teachers can provide the learner with indirect forms of feedback or implicit correction in response to learners' erroneous utterances. Implicit correction refers to the process of providing the learner with indirect forms of feedback. The implicit feedback provided to the learner in the present research is in the form of recast - the correct reformulation of the learners' erroneous utterances.

3. Types of errors: morphological errors versus syntactic errors. Morphological correction refers to the treatment given to the grammatical morphemes (inflections and function word), erroneously uttered by the learners. Syntactic correction refers to the treatment given to the contextual dislocation of words in the sentence- i.e. word order.

4. Developmental aspect of errors: early developmental errors versus late developmental errors. Early developmental errors are errors that belong to the early stages of the learner's interlanguage process. Late developmental errors are errors of the features belonging to the later stages of the learners' interlanguage process.

#### 1.4 RESEARCH QUESTIONS

Therefore, this study answers the following research questions:

RQ1: Is there a difference in learning between learners who are immediately and explicitly corrected and those who are corrected in delayed explicit manner?

RQ2: Is there a difference between the effects of explicit and implicit correction in language learning?

RQ3: Is there a difference in the effects of error correction on the learning of morphological and syntactic features?

RQ4: Is there a difference in the effects of error correction on early developmental and late developmental structures?

The words 'feature' and 'structure' have been used interchangeably although 'feature' is mostly used in relation to morphemes and 'structure' to syntax. The terms 'form' and 'item' are used when no specific reference is made to the syntactic or

morphological nature of the term. However, the term ‘item’ is used regarding test items.

## 1.5 THESIS OUTLINE

This thesis is arranged as follows: Chapter 2 reviews the literature relating to error correction. Chapter 3 details the methodology of the study. Chapter 4 presents the results and discussion of the first research question. Chapter 5 presents the results and discussion of the second research question. Chapter 6 presents the results and discussion of the third research question. Chapter 7 presents the results and discussion of the fourth research question. Finally, Chapter 8 concludes the study, discusses the implications and finally provides suggestions for further research.



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 INTRODUCTION

Literature reviews on error correction generally include both psycholinguistic and pedagogical domains and consider historical perspectives. Some of the earliest error correction research was in the Contrastive Analysis era. At that time error was considered to result from differences between the native and the target language and teaching aimed to prevent errors occurring. Since then there have been a number of different understandings about the causes of errors and how best to deal with them in teaching. This chapter is organised into two main parts. The first part deals with error. It discusses definitions of error, causes and classifications of errors, and the relationship between errors and tasks. The second part deals with error correction. It discusses terms and definitions used in error correction. It discusses different theories of second language acquisition, and the cognitive and pedagogical basis of error correction in these theories. Finally, three research areas directly related to the study reported in this thesis (i.e. timing, manner, and type of error) are discussed.

#### 2.2 ERROR: DEFINITIONS, CAUSES, AND CLASSIFICATIONS

Writers have considered what constitutes an error. Lack of grammaticality, acceptability, correctness and felicity are criteria for recognising errors mentioned by James (1998) and other specialists in the field. Clear-cut definitions, most of which take into account inappropriateness of use and incompleteness of learning from the point of view of native speakers often lack conceptual clarity (Klassen, 1991; Richards, 1992). The concepts of incompleteness and inappropriateness by native speakers, as suggested by some of these researchers, are problematic in the sense that it is not always native speakers who are the authentic sources of appropriateness and completeness. However, there are some other researchers, not particularly experts in error analysis but rather generalists, who have defined error in more technical and

sufficient ways. For example Brown (1987) defines errors as ‘idiosyncrasies in the interlanguage of the learner which are the direct manifestation of a system within which a learner is operating at a time’. Ellis defines it as ‘a deviation from the norms of the target language’ (Ellis, 1994a). However he admits that such a definition raises a number of questions regarding the variety of the target language to be considered as the norm. Long (1991) generally refers to errors as pervasive, systematic, remediable or persistent second language learning forms.

On the other hand, there are some experts in the field of error analysis whose definitions are vague and inconclusive. For example, Dulay and Burt (1972) referred to errors as ‘goofs’, defined in an earlier work as ‘Gooficon’ (Burt and Kiparsky, 1972:1) – “an.....error for which no blame is implied.” Corder, a pioneer of error analysis, defines errors as “breaches of the code”. (Corder, 1980).

Another consideration about the type of error is the distinction between ‘error’ and ‘mistake’, which are also referred to as ‘error of competence’ and ‘error of performance’ respectively. These labels are best suited to Ellis’s (1994a) distinction of mistake vs. error. To him an error takes place when the deviation arises as the result of lack of knowledge. It represents a lack of competence. A mistake, according to him, occurs when learners fail to express their competence and it is the result of processing problems that prevent learners from accessing their knowledge of the target language rule, and causing them to fall back on some alternative, non-standard expression that they find easier to access. Errors of competence, according to Corder (1971), are persistent, systematic and, in consequence, serious; their treatment requiring careful analysis to discover their cause. Errors of performance, on the other hand, are unsystematic and not very serious, because students themselves can correct them when their attention is drawn to them. Errors of competence, Corder says, represent the learner’s transitional competence (Corder, 1971). There are two problems with this distinction. First, when he talks of ‘persistent’, he does not consider the partial knowledge that might be held by the learner. A learner might sometimes use a correct form of structure and sometimes use the incorrect form of the same structure. The second problem is that the difference between learners’

competence errors and their performance errors has always been vague for teachers and researchers.

The frequency of occurrence of errors is a major criterion used by researchers when distinguishing between mistakes and errors. This means that errors with a low frequency are considered as mistakes or performance errors and those with a high frequency are systematic errors or competence errors. However, many researchers (James, 1998; Richards et al., 1992; Corder, 1980; Brown, 1987; Ellis 1994a) believe that it is not sufficient to consider frequency as the only criterion for determining what constitutes an error and what constitutes a mistake. It may well be that a low frequency of certain grammatical patterns has created low occurrences of certain errors. Schachter (1974) sees the strategy of avoidance employed by the learner as a possible source of the low occurrence of certain errors (Schachter 1974, in McLaughlin 1990:68).

Keshavarz (1993) suggests that the possible causal factors of the learners' deviant structures must be considered when distinguishing between errors and mistakes. When we come across utterances such as 'This is the apple that we ate it yesterday', which have a low frequency of occurrence in a specific situation, we should not jump to the conclusion that this structure is a 'mistake' rather than an 'error' on the basis of low frequency. We must take into consideration the cause of such errors, which in this case is mother tongue interference, because they are rule-governed and reflect the learner's transitional competence.

In addition to the above arguments that amount to saying that there is not always a clear-cut boundary between errors and non-errors, there are also different varieties or dialects within languages that contain rules that differ from the standard norm. Native speakers sometimes have rules that reflect their regional dialect. For example, Lengo (1995) cites a case in which the conjunction 'while' in Yorkshire English corresponds to 'until' in standard English, and thus should not be regarded as an error when used in that sense by someone who is speaking the Yorkshire dialect. Ellis (1994a) proposes as an example the sentence 'She coped up with her problem very well',

which is considered normal by educated Zambian English speakers but erroneous in standard British or American English.

From the pedagogical angle, there is another problem involved in defining errors. This may be called ‘dogmatic definition’. In formal classroom instruction of a second or foreign language, the teacher’s response to students’ utterances may be the most important criterion for judging errors. Indeed, one definition states that an error is a form unwanted by the teacher (George, 1972). In the majority of instances, teachers become entangled in a kind of dogmatic notion of their own definition of correct forms and errors, and this is mostly observed in situations when teachers concentrate on form rather than communicativeness of utterances. We find that learners’ responses are sometimes rejected by teachers not because they are wrong, but because they are unexpected (Allwright & Bailey, 1991) and Fanselow, (1977: 585).

We can divide the periods of error identification into three major stages:

- a. Pre-behaviouristic period
- b. Contrastive period
- c. Cognitive period

In the Pre-behaviouristic period, errors made by learners were identified and categorized into various classes which were mostly impressionistic collections of commonly made errors (Duskova, 1969). In actual fact, the possible sources of the errors were not identified. In the Contrastive Analysis period too, only one single source of errors was recognized and that was interference resulting from the learner’s mother tongue in the process of learning. As Ellis (1987) sees it, the existence of non-interference errors was always recognized, except by Contrastive Analysis Hypothesis’ staunchest supporters. He cites Brooks (1960) as giving four causes of errors. First, the learner does not know the structural pattern and so makes a random response. Second, the correct model has been insufficiently practised; third, the distortion may be induced by the first language. Finally, the student may follow a general rule which is not applicable in a particular instance. It is, however, important

to know that the contrastive notion of sources of error certainly does not account for the psychological reality of errors. Furthermore, to gain a firm understanding of the sources of errors, Dulay and Burt (1973) calculated the frequencies of error types in the speech data of Spanish-speaking children learning English. They examined morphological features like past tense inflections. After eliminating ambiguous errors they claimed that eighty five percent were developmental, twelve per cent unique, and only three percent interference. On the basis of this and similar studies, Dulay and Burt argued that children do not organize an L2 on the basis of transfer or comparison with their L1, but rely on their ability to construct the L2 as an independent system, in the same way as in L1 acquisition. However, they suggested that interference may be a major factor in phonology.

In the Cognitive Period of language teaching the perception of error sources changed. Several sources of errors were recognized, of which interference from the learner's mother tongue was only one. There are two other main sources of errors in the learner's language, namely interlingual or developmental and methodological sources of errors. Interlingual errors are the errors are the result of direct transfer from L1. Methodological errors are those that are the result of faulty instruction. Richards (1971a & 1971b) and Duskova (1969) point out that the limitation of certain strategies of rule learning gives rise to errors which are not caused by mother tongue interference, but by faulty application of learning strategies. The source of the errors should be traced back within the structure of the target language itself.

The lack of consensus among second language researchers can be witnessed here too when Richards uses different terms (above) for the same concept that Corder uses. According to Corder, (1975: 208-217) there are three types of errors:

- a. Interlingual errors caused by first language interference.
- b. Intralingual errors caused by the learner's and over-generalizing of rules.
- c. Errors caused by teaching techniques, i.e. errors caused by the teacher's insufficient data or lack of required proficiency.

Dulay and Burt (1972) give their own categorization of student errors. It is, to some extent, more elaborate than the previous ones presented by Corder and Richards. Their classification is as follows:

- a. Goofs related to interference: These reflect the structures of the learner's mother tongue. They cannot be identified in the target language of the learner.
- b. Developmental goofs: These are errors reflecting the acquisition data of the target language. Errors such as these are produced by children acquiring English as their native language.
- c. Ambiguous goofs: These errors reflect both the native language of the learner and the target language.
- d. Unique goofs: Errors of this type reflect neither the structure of the mother tongue of the learner nor that of the target language.

In addition to this, there is another general source of errors called 'induced errors'. This is when learners, due to the nature of the instruction they receive, make a number of errors. Stenson (1974) and Svartvik (1973) provide a number of examples of such errors.

From a general perspective, some other possible explanations can be found for the existence of various sources of errors in the learners' interlanguage. These are what Ellis (1994a) described as 'cognitive strategies' and include both learner strategy, and the linguistic faculty that enables the learner to operate on the input data in order to discover the L2 in maximally efficient ways.

Further some causes of error are due to the difference between what learners have proceduralized as their interlanguage and what they have a declarative knowledge about. The discrepancy between competence and performance is an important issue in learners' language acquisition. Learners may well have acquired certain forms of the target language, but they 'may not have sufficient control over it' (Sharwood-Smith, 1986: 12). Krashen, in his Monitor Hypothesis, states that tasks which require learners

to focus attention on form are more likely to produce error than those which force them to concentrate on content (Krashen, 1983). Some other researchers (Long, 1984; Ellis, 1985; Schmidt & Frota, 1986) reject what Krashen has asserted. However, it seems that the magnitude and the kind of errors vary depending on the tasks in which learners take part.

Apart from what was proposed in the distinction between errors and mistakes, and the sources of errors, there are other classifications proposed by some researchers that illuminate some other aspects of errors and error correction. A well-known classification is that of Burt and Kiparsky (1972) who have divided errors according to the degree of obstruction they cause to communication between the interlocutors: a global error, as defined by Burt and Kiparsky, is one which involves 'the overall structure of a sentence' and a local error is one which affects a particular constituent.. Richards, et al. (1992) give the following examples of global and local errors:

Global error: 'I like take taxi but my friend said so not that we should be late for school'.

Local error: 'If I heard from him, I will let you know'.

The first sentence as a whole would be considered as erroneous, but in the second sentence only 'heard' would be considered erroneous. Since comprehensibility and intelligibility are matters of degree and vary according to the listener's comprehension, as well as the speaker's intonation and gestures, we cannot draw a border-line between them to say one is completely global and the other one is completely local. So the local and global issues will be of more use in the pedagogical aspects of error analysis, error correction and testing. Both definitions and illustrations of local and global errors, given by Burt and Kiparsky, lack sufficient firmness and clarity to be considered as an account of error classification. In addition to the above, most researchers (Krashen, Dulay and Burt 1982; Dulay and Burt, 1972; Corder, 1974) have noted four categories of errors: (1) Addition of some unnecessary or incorrect element (2) Omission of some required element (3) Misordering of elements (4) Selection of an incorrect element.

### 2.3 THE SIGNIFICANCE OF ERROR ANALYSIS

There exist several reasons for studying learners' errors, some of which are theoretical and a few pedagogical. The theoretical reasons for analysing the errors of second language learners shed light on a theoretical standpoint about language and language learning in both psychological and linguistic dimensions. As Menyuk (1971) observes, a study of the child-learner's errors does indeed illuminate the type of linguistic and cognitive processes that appear to be part of second language learning process (Menyuk, 1971 as cited in Richards, 1974). Richards quotes Corder (1974) as saying, 'the learner errors are indicative both of the state of the learner's knowledge, and the ways in which a second language is learned' (Richards, 1974: 95). Moreover, the errors made by second language learners reveal the strategies they acquire to figure out the target language rules at a particular point in their language learning process. The learner is constantly making hypotheses and testing them.

Over time a distinction was drawn between learning and acquisition. It was understood by writers such as Krashen and Terrell (1983) that there was a difference between the strategies used by teachers and learners in order for learning to take place and the outcome of learning (acquisition). Furthermore, it has been noted that errors play a crucial role in bringing to light the acquisition and learning nature of both the first and second language. For example, Richards (1974), Taylor (1975: 73-107), and Dulay & Burt (1974 as cited in Richards 1974) assert that errors have played an important role in the study of language acquisition in general, and in the evaluation of second and foreign languages in particular.

The pedagogical reasons, as Corder points out, relate to the insights that errors give first to the teacher, in that they tell her, if she undertakes a systematic analysis, how far towards the goal the learner has progressed and consequently what remains for him to learn, Secondly, errors give insights to the learner, because we can regard the making of errors as a device which the learner uses to learn. It is used for testing hypotheses about the nature of the language the learner is learning (Corder, 1974).



The findings of error analysis can help language teachers cater to their students' practical needs and devise suitable materials and teaching techniques for classroom situations. Through error analysis, teachers and language specialists are able to spot problematic areas. The teacher will understand more about what stage the learner is at, at a particular time, and discover what he/she still has to learn. Other researchers like Dulay and Burt (1975) have stressed this two dimensional aspect of error significance by maintaining that studying learners' errors serves two major purposes: (1) it provides data from which inferences about the nature of the language learning processes can be made, and (2) it indicates to teachers and curriculum developers which part of the target language students have most difficulty with in producing correct utterances and which error types detract most from a learner's ability to communicate effectively.

An important contribution of error analysis has been the discovery that many grammatical errors that second language learners make do not reflect the learners' mother tongue but are very much like those which young children make as they learn a first language (White, 1977; Lococo, 1976; Lightbown and Spada, 1993). Researchers have found that, like L1 learners' errors, most of the errors L2 learners make indicate that they are gradually building an L2 rule system. (Dulay, Burt, and Krashen, 1982: 95). However, Ellis (1994) states that there is a considerable variance in the proportion of transfer errors by different investigators, he also admits that, one of the main reasons for this variation is the difficulty in determining whether an error is the result of transfer or interlingual process.

Ellis (1985) has elaborated on the autonomous aspect of the learner's interlanguage and finally has concluded that 'Errors are an important source of information about SLA, because they demonstrate conclusively that learners do not simply memorize target language rules and then reproduce them in their own rules on the basis of input data, and that these rules, in some instances at least, differ from those of the target language.'

## 2.4 ERROR CORRECTION

### 2.4.1 Some Definitions

Several terms have been used for providing feedback in response to learner errors in second language acquisition. These are ‘repair’, ‘treatment’, ‘feedback’, ‘negative evidence’, and ‘correction’. Repair refers to attempts to identify and remedy general communication problems. According to Chaudron (1988), the term “treatment of error” may simply refer to “any teacher behaviour following an error that minimally attempts to inform the learner of the fact of error” (p. 150). The treatment may not be evident to the student in terms of the response it elicits, or it may make a significant effort “to elicit a revised student response” (p. 150).

The most common terms are ‘corrective feedback’, ‘negative evidence’, and ‘negative feedback’. Chaudron (1988) has pointed out that the term ‘corrective feedback’ incorporates different layers of meaning. Also, Ellis (1994a) identifies feedback as being the general cover term for the information provided by listeners on the reception and the comprehension of messages. Corrective feedback is defined by Lightbown and Spada (1999) as any indication to the learners that their use of the target language is incorrect. This includes various responses that the learners receive after making errors. When a language learner says, ‘He go to school everyday’, corrective feedback can be explicit (for example, ‘no, you should say goes, not go’) or implicit (‘yes he goes to school every day’), and may or may not include metalinguistic information, (for example, ‘Don’t forget to make the verb agree with the subject’) (p. 171-172).

Finally, there is “the true” correction which succeeds in modifying the learner’s interlanguage rule so that the error is eliminated from further production (p. 150). According to Ellis, correction has a narrower meaning than the above terms. It constitutes an attempt to supply ‘negative evidence’ in the form of feedback that draws the learner’s attention to the errors they have made (Ellis, 1994a:583-4).

According to Schachter (1991), corrective feedback, negative evidence, and negative feedback are three terms used respectively in the fields of language teaching,

language acquisition, and cognitive psychology. Different researchers often use these terms interchangeably. In the present research too, we have tried to use error correction (or correction) and corrective feedback interchangeably whenever the general sense of feed back provision was involved.

Most studies investigating some aspects of error correction have studied error correction in ESL contexts (for example, the studies of Doughty 1991, Robinson, 1996, Michas and Berry, 1994, Loewen, 2002, Carroll and Swain, 1993, Kim and Mathes, 2001, Carroll, 2001 and Lyster 2004 all took place in ESL contexts). Fewer studies (for example, the studies of Havranek & Cesnik, 2003, Muranoi, 2000 and Holley and King, 1971) have investigated the effectiveness of error correction in EFL contexts (that is, contexts in which learning takes places in a formal classroom setting and in which there are limited opportunities to use the target language outside the classroom).

#### 2.4.2 Rationale for Correction

The dilemma of ‘to correct or not to correct, that is the question’ has persistently engaged the minds of foreign language teachers. Concerning the logic of correction, Lyster and Ranta (1997) acknowledge that there is a certain dilemma in this regard: if teachers do not correct errors, opportunities for students to make links between form and functions are reduced; if teachers do correct errors, they risk interrupting the flow of communication” (Lyster & Ranta, 1997: 41). There have been different theoretical and pedagogical arguments with regard to the role assigned to error correction in second language acquisition.

##### 2.4.2.1 Theoretical Issues

There are arguments among researchers about what makes second language acquisition possible. Those who have advocated Chomsky’s Nativist theory posit that error correction does not lead to acquisition at all. They argue that it is the universal grammar (the innate linguistic mechanism that is available to all humans) that determines language acquisition. They believe that instruction, including error

correction, can only change the language behaviour and not the interlanguage system of the learner. In the field of second language acquisition, Krashen (1982) believes that there is a difference between acquisition and learning. Conscious learning can only act as a monitor the output after it has been acquired. According to him instruction can only affect the conscious learning rather than the acquisition of the target language. He believes that there is no interface between learning and acquisition. In short non-interventionists, like Krashen, believe that error correction has barely any effect on second language acquisition.

Further evidence in support of the limitations of error correction in the learners' interlanguage comes from the fact that, although correction may be effective for a few errors (mostly interference), the learner undergoes his own perspective of error. Tarone and Yule (1989) cite Arthur et al. (1980) as pointing out that perhaps 'the errors' made by the second language learners are, from the learner's own perspective, 'not errors at all' (Tarone and Yule 1989:74). This position is open to criticism because the second language learner perceives the language according to his/her own interlanguage, but this does not mean that the learner has no control of his/her linguistic behaviour. In fact, the learner can change some of the forms close to his present language stage.

However, non-interventionist hypothesis has been challenged by some other researchers ((Ellis, 1991; Schmidt, 1990, 1994; Schmidt & Frota, 1986). They argue that while comprehension is essential, noticing is crucial in language acquisition and subliminal learning is impossible. According to the noticing hypothesis, in order for input to become intake for L2 learning, some degree of noticing must occur, and that it is corrective feedback that triggers that learners' noticing of gaps between the target norms and their IL, and thus leads to subsequent grammatical restructuring. Schmidt (1994) claim that in order to be able to notice attention and intension are required. He believes that intention is not always a necessity for learning but attention is.

Moreover, Gass (1988, 1990) argues against Krashen's position that only presentation of comprehensible input leads acquisition. She points out that there is nothing in the target language that can be learned unless it is noticed by the learner. She believes that

in order for learners to learn, they must be able to detect the discrepancies between their own learner language (interlanguage) and the target language. According to Gass, corrective feedback works as an attention getting device that helps them notice the gaps.

Another theoretical support for error correction comes from the hypothesis testing models of acquisition. In these models, the learner is assumed to formulate hypotheses about the target language, and to test these hypotheses against the target norm. In this model of learning, corrective feedback, or negative data, plays a crucial role (Bley-Vroman, 1986, 1989). According to Chaudron (1988), the information available in feedback allows the learners to confirm, disconfirm, and possibly modify the hypothetical, transitional rules of their developing grammars.

Further evidence in support of error correction comes from the cognitive view of second language acquisition. According to this view, there is an interaction between learners' perceptual system, the cognitive system, and input (Johnson, 1996). Error correction is essential in this view, because, as Han (2001) sees it, "it has the properties of informing, regulating, strengthening, sustaining, and error eliminating" (Han, 2001: 6).

Similarly, others, like Tarone and Yule (1989) believe that without correction, learners will not progress beyond a certain error-prone stage and that students whose use of a second language contains consistent grammatical errors which are not corrected in the earlier stages of acquisition may become 'learning proof', that is unable to learn the correct forms at all. This is consistent with Vigil & Oller's (1976), suggestion that fossilization of erroneous forms must be eradicated and to that, 'clear cognitive information about the problems in the learner's output must follow the learner's attempt to communicate in the target language' (Vigil & Oller's terms, cited in Allwright, 1988). Although their suggestion was originally meant to explain fossilization they implicitly suggest that error correction is an inseparable part of second language teaching.

According to Long's updated Interaction Hypothesis (1996), interaction between innate and environmental factors is necessary for language acquisition. To him, "negative feedback obtained during negotiation work or elsewhere may facilitate second language development, at least for vocabulary, morphology, and language specific syntax and essential for learning certain specifiable L1-L2 contrasts" (p. 414). This will be discussed later in the review.

#### 2.4.2.2 Pedagogical Issues

Some classroom based studies have indicated that error correction has limited impact on learning. One of these studies belongs to Roig Torres (1992) of the University of Pittsburgh who, for his PhD dissertation, conducted an experiment. The study was aimed at assessing the effect of frequent systematic error correction on grammatical accuracy during oral activities in the second language classrooms. His subjects were 30 English speaking undergraduate students enrolled in two beginning Natural Approach first semester Spanish classes. The only difference in treatment was the systematic correction the experiment group received. The effect of the error correction was based on a series of tests. A written test (fill-in-the blanks) and an oral interview were administered at the end of the study. The results indicated that the two groups performed equally well. The findings seemed to be consistent with Krashen and Terrell's (1983) belief that intensive correction in the classroom does not increase accuracy. However, the results shed no light on the position of these authors that error correction will restrain the acquisition process, resulting in less language acquisition. It seems that the finding in Roig Torres' (1992) study does not run counter to what has so far been said about the need for the communicativeness of error correction in classroom. Systematic error treatment in Torres's research may have caused a kind of intensive correction that can be ineffective in comparison with incidental correction seen in form focused instruction.

Truscott (1999) reviewing research on the effects of correction on oral errors in the classroom argues that although sometimes errors correction is effective, this is rare. He believes that a powerful factor in the continuing popularity of correction is the common intuition that correction should work. This intuition, he argues, stems from teachers' and learners' perceptions of their own experience. They can point to cases in

which a particular correction seemed beneficial. Truscott claims that in most cases, the apparent benefits are illusory. For Truscott, competent use of grammar is almost entirely unconscious. Correction may help learners develop their metalinguistic knowledge of the corrected feature but metalinguistic knowledge has only a limited relation to actual language use.

Doughty (2001) quotes Long (1991) as saying: ‘Focus on form is proposed as an instructional expedient for addressing pervasive, systematic, remediable or persistent L2 learning problems’. Long’s reasons for taking such a position in support of error correction are: (a) Errors (particularly those seen in the developmental type) are systematic and pervasive; meaning that any focus and treatment on one will result in treatment of others because of the systematicity and all-inclusiveness of errors; (b) Errors are persistent, especially in less-than-target like production of advanced learners, in the sense that they keep coming back. Therefore, they need to be focused on and treated persistently, and (c) Although the acquisition process is immutable, errors can be remedied (Long, 1991; Pienemann 1989).

Doughty & Williams believe that “such pedagogical interventions are claimed to be more effective and efficient than would be leaving learners to their own devices to solve second language problems”. However, they believe that “particular focus on constructs, as expressed in pedagogical terms, are in greater need of scrutiny in cognitive processing terms in order to ascertain the validity of intuitive recommendations and to inform more specific decisions, such as determining when best to “intrude” into ordinary language processing by second language learner” (Doughty & Williams, 1998: 12).

In short Doughty and Williams (1998) do not agree with Krashen’s non-interventionist position and his ‘no correction’ stance. However, they recognize that some forms do not need or may not benefit from instructional focus. They believe that if the language classroom engages the cognitive processing ability of the learners, far more language is likely to be efficiently acquired. The job of the teacher becomes one of providing assistance to the learner, who needs to attend to particular aspects of

language in order to analyse them, to compare them to the developing interlanguage for more efficient use (p: 205).

Some pedagogical evidence in support of error correction comes from the studies conducted among immersion programmes. For instance, Harley (1993: 245) speaks of the effect of 'code focused second language instruction'. To James, (2000), it means error correction. Through her experiments with some early French Immersion classes she has come to believe that in order to bring about defossilization, the importance of teaching and more specifically, error correction, should be emphasized.

Also, some pedagogical support for error correction comes from the argument running against immersion programs. These programs assume that grammatical accuracy can be developed in the classroom after communication has been achieved. This opinion has been refuted by immersion research findings. Hammerly (1987) reviewed six studies to evaluate the effect of the immersion approach based on acquisition/natural approaches. He concluded that the grammatical competence of immersion students is characterized by fossilization or *classroom pidgin* as a result of their trying to communicate freely beyond their limited linguistic competence. He criticized any method failing to emphasize structure before communication as putting the cart before the horse. The result is learners, who in Richards, Platt and Weber's words (1992:152) are "successful but grammatically inaccurate communicators."

More convincing evidence comes in support of error correction in classroom settings where the effect upon learning is considerable. Carroll, Swain, and Roberge (1992) found highly positive results in favour of error correction when they corrected their French learners on French nominals. In short, although there are theoretical and pedagogical differences as to whether correction has any effect on second language acquisition, there are strong arguments in favour of error correction.



## 2.5 ERROR CORRECTION AND SECOND LANGUAGE ACQUISITION MODELS

Error Correction cannot be considered separate from the views and opinions held by the teacher about language teaching and learning in general. The bandwagons of change in foreign language methodologies and materials have always attracted the attention of language experts. Similarly, there has been a significant change of attitude towards second-language learning in general, and students' errors in particular. Error correction must be discussed in terms of its relation to the backbone theories of second language acquisition. Depending on the dominant theory at any one time, error correction has been dealt with in different ways. In the following sections, we can see a number of second language acquisition theories and models that in some way affect our understanding of error correction. However, some of these models (such as Pienemann's Teachability Hypothesis) are discussed in relation to the types of features to be corrected.

### 2.5.1 Contrastive Analysis Model

In the era of Contrastive Analysis and Audiolingualism a rather negative approach towards errors was prevalent. Some of the distinguished scholars during that period that lasted nearly 20 years, all through the fifties and well into the sixties, regarded errors committed by second language learners from a 'puritanical' perspective (Stern 1983). Brooks (1960) considered errors to have a relationship to learning resembling that of sin to virtue: 'Like sin, error is to be avoided and its influence overcome, but its presence is to be expected' (Brooks, 1960). Tarone and Yule (1989) reflect that back then 'their view towards language was rather a moralistic one'.

The Contrastive Analysis treatment of errors, as Dulay, Burt, and Krashen (1982) point out, rested on the comparison of the learner's native and target language. Differences between the two were thought to account for the majority of an L2 learner's errors. The associationist or behaviourist view of learning prevalent at that time, as Burt, Dulay and Krashen (1982) maintain, provided the theoretical justification for Contrastive Analysis. It held that learning was basically a process of forming automatic habits and those errors therefore result from first language habits

interfering with the learner's attempts to learn new linguistic behaviours. To avoid errors in language learning, the teacher had to observe the problematic areas and expose the learner to a sufficient amount of practice. To overcome the error, the teacher was supposed to shorten the time lapse between the incorrect response and the repeated presentation of the correct model. All the materials for second language learners were designed to include prevention and correction of errors

Although the structuralists' contribution to language teaching is, without doubt, enormous, in their zeal to prevent errors they overlooked the basic aim in language teaching: to teach learners to use the language creatively in response to expected and unexpected stimuli in the environment. The above statements are more in line with the methodological drawbacks of the Structural Approach, and, consequently, of Contrastive Analysis. The very foundations of Contrastive Analysis were undermined as the result of Chomsky's transformational generative grammar, which emphasized the active participation of the learner's mind in processing data.

In short, Contrastive Analysis held that learning was basically a process of forming automatic habits. Errors were understood to result from first language habits interfering with the learner's attempts to learn new linguistic behaviours. Audiolingual approaches to teaching aimed prevent learners from committing errors. If errors were committed they were to be immediately corrected.

### 2.5.2 Interlanguage Model

In the Interlanguage era the second language learner was considered to be an autonomous creator of a language system. The terms 'creative construction' and 'interlanguage' can best describe this period. Having been influenced by innatists, Corder (1981) believed that the L2 learner may well have a built-in syllabus. This means that he/she is equipped with an internally programmed sequence which is sometimes harmonious with the structural points taught by the teacher and sometimes contradictory. But the learner follows his/her built-in syllabus, not the one imposed by the teacher. Errors in this view can be seen as the evidence of a learner's present transitional competence (Corder's term for 'grammar') and manifest in the way the

learner processes the input in her linguistic environment. According to this view of second language acquisition, there is a difference between input, what the learner is presented with, and intake—what the learner is actually ready to process (Corder, 1981). Only a portion of input, the portion which is determined by an in-built program, can be learned. The discrepancy between ‘predetermined in-built learning program’ (Sharwood-Smith, 1994) and early teaching of late-learned structures may cause misunderstanding between both the teacher and the learner.

The Interlanguage view of language acquisition was in fact an extreme position that attributed the whole role of language learning to the language learner and undermined the impact of negative evidence in second language development. According to this perspective, negative evidence (providing the learners with direct or indirect information about what is unacceptable) can only be effective if it is within the syllabus predetermined in the minds of the language learners—otherwise it is a useless action and causes frustration and confusion for the learner and teachers. This extreme position was strengthened by non-interventionist position taken by Dulay and Burt (1973), Krashen (1983), and Prabhu (1987) who argued that grammar instruction should be abandoned in order to let the learner acquire the language from untutored language settings. The teacher should only provide the learner with opportunities for natural use of language. To sum up, the interlanguage model considered second language learners as self-governing creators of a language system who follow their own built-in learning programme which can sometimes benefit from error correction and sometimes not.

### 2.5.3 Input Hypothesis

According to Krashen’s (1985) Input Hypothesis, acquisition takes place only if input is comprehensible to the learner. According to Krashen, comprehensible input is that bit of language that is slightly ahead of the learner’s current state of grammatical knowledge. He believes that input containing structures known to learners serves no purpose in acquisition, because structure should be beyond learners’ understanding to be processed. Similarly, he believes that structures that are too difficult for learners are not useful. Learners are unable to use the complex structures in their acquisition.

Therefore, if 'i' equals the learner's current state of knowledge and 'i+1' equals the learner's next stage of knowledge, the input the learner is exposed to must be at the i+1 level for it to be acquired. In brief, Input Hypothesis recommends that error treatment should be directed at comprehensible input.

#### 2.5.4 Interaction Hypothesis

Long argued that interaction between learners and more competent interlocutors results in the learner's being exposed to comprehensible input, which is the main condition for learning. Long's Interaction Hypothesis (e.g. Long, 1980) was initially an extension of Krashen's Input Hypothesis. Long argued that when there is conversation between two native speakers or between a native speaker and a non-native speaker, there are a lot of similarities in terms of grammatical complexity used in two types of conversations. However, there are also a number of differences between two conversations. This is especially true when the speakers try to solve communication difficulties. The NS- NNS pairs utilise conversational tactics such as clarification requests, repetitions or comprehension checks. The idea behind solving communication difficulties is the perception that the non- native speaker (less competent interlocutor) is experiencing comprehension problems. The tactics used for interactional adjustments (solving communication problems) are very useful in language learning. In the process of interactional adjustments, both interlocutors make efforts to understand each other. Ultimately they adjust their input, making it more appropriate for the current state of the learner development. In other words, they can ensure that in a conversation between a native speaker and a non-native speaker, the learner receives comprehensible input (i+ 1, in Krashen's term).

However, Long's Interaction Hypothesis has been criticised by some researchers (e.g. Braid, 1995), who argue that the Interaction Hypothesis has put too much emphasis on analysing the meaning aspect of interaction between native speakers and non-native speakers and that it has paid little attention to grammatical aspects of learner's language.

Long (1996) has reformulated the Interaction Hypothesis, placing much more emphasis on the features that link input and environment with learner cognitive factors. He explains how these features can aid learners in their language development. In his new version of Interaction Hypothesis, he recognises the role of negative evidence in learning and introduces the notion of selective attention to explain how input becomes intake. To sum up, negative feedback directed at comprehensible input during negotiation work may lead to second language development for certain structural features.

#### 2.5.5 McLaughlin's Information Processing Model

The idea of controlled and automatic processing was proposed by McLaughlin (1987). Following a group of cognitive psychologists, he claims that the way in which we process information may be either controlled or automatic. In his model, learners resort to controlled processing through their short term memory and their attentional resources. This controlled processing involves temporary activation of a selection of information nodes in the memory, in a new configuration (Mitchell and Myles, 1998). Repeated activation renders the sequences that were first produced by controlled processing automatic. These automatized sequences are stored in the long-term memory and are very difficult to delete or modify. According to McLaughlin (1987), learning involves a shift from controlled towards automatic processing. When some sequences become automatic, controlled processes are ready to deal with higher processing skills. This continuous movement from controlled to automatic processing results in restructuring of the linguistic system of the L2 learner. In summary, it seems that error correction is first handled by control processing and later as a result of practice, it becomes automatic and part of learners' interlanguage.

#### 2.5.6 Anderson's Declarative and Procedural Knowledge

Error correction can also be discussed in terms of declarative and procedural knowledge. Declarative and procedural knowledge are related to the notion of controlled and automatic processes. Declarative knowledge is characterized by Anderson (1983) as 'knowledge that'. It refers to the learner's information about a form that has neither been automatized nor integrated into his/her interlanguage

system. Procedural knowledge (knowledge how, not unlike automatic knowledge) is the knowledge that has been automatized and made readily available for use as implicit knowledge. As the result of practice, the declarative becomes proceduralized and available for unconscious use (see explicit vs. implicit knowledge). Anderson argues that there are three kinds of memory that are responsible for declarative and proceduralized knowledge. Anderson believes that declarative and proceduralized knowledge are different kinds of knowledge which are stored in different ways. In brief, according to this view, correction provides the learner with the knowledge 'about' the corrected form and later, as the result of practice, this knowledge will be integrated into the learner's interlanguage.

## 2.6 ITEMS VS. RULES LEARNING

Error correction can also be discussed in terms of item learning and system (rules) learning. Item learning is learning in which particular patterns are possible with particular verbs. System learning is learning which kind of verb takes which pattern (Ellis, 1997b: 70). The difference between item learning and system learning lies in the difference between the concreteness and abstractness. An abstract rule refers to the underlying principle of a surface structure that can be generalized to other instances of language. It includes constituents which hold underlying relations with each other. A concrete rule refers to the surface structure of an item that has no underlying principle and that acts as a chunk, constituents of which have no relations with each other. Also, Dekeyser (1995) contends that there is a difference between abstract rules and concrete rules.

Abstract rules operate beyond instances of language. They are beyond exemplars. They involve movement (Dekeyser's term), and hence are difficult for learners to focus their attention on. He believes that memorization of a form is least likely when the form depends on abstract characteristic of the environment. Similarly, Gass (2003: 503) believes that concrete rules are easier to focus on, because they are more accessible to attention than abstract rules; they can be more easily isolated.

Some grammatical structures are learned as items due to the concrete nature of these items and some as rules due to the abstract nature of rules. As Hulstijn and de Graafe (1994, cited in Ellis 1997b) point out some grammatical features can be acquired as items or rules. For example learners of L2 French may learn gender of a noun item by item. Similarly, dative alternation in English can be learned by item or rule learning.

Dekeyser (in a personal communication) explains the distinction of abstract and concrete. He believes that abstract can be described as ‘removed from direct experience with reality’. There are different levels of abstractness: some kinds of form can be more abstract than others. He extends the same definition to linguistic reality: a morpheme is more abstract than a lexical item; a morpheme is more abstract than its allomorphs (because it bundles several more concrete form-meaning mappings), and a morph more abstract than a morpheme (because it bundles multiple form-meaning mappings into one). He believes that syntactic structures are the most abstract of all other linguistic features, because they are independent of elements of language that represent any sound. They are patterns that are concerned with the relationship between the morphemes. These syntactic patterns are rather far removed from the more concrete reality of sound-meaning mappings. Therefore, they are more abstract than morphemes.

In summary, there are differences between item and system learning in terms of abstractness of rules and concreteness of items as well as the fact that rules involve movement and are less accessible to attention and cannot be isolated. The limited research in this area shows that controversies exist among researchers concerning which structures are learned via item learning or system learning.

## 2.7 COGNITIVE BASIS OF ERROR CORRECTION

Effectiveness of error correction depends on cognitive processes. These cognitive processes are: attention to input features, learners’ noticing of interlocutor’s language output, and comparisons of input and output. To be effective these comparisons should take place under conditions which enhance cognitive processing. Doughty (2001) discusses focus on form and argues that there are possibly three integral

cognitive constructs that operate in focus on form (note that error correction is a reactive focus on form): (1) cognitive macro processes, such as input processing, output production (2) cognitive micro processes, such as working memory (WM) and noticing and finally (3) cognitive resources, such as long term memory and mental representation of the learner's developing interlanguage knowledge.

### 2.7.1 Macroprocessing Aspects

According to Van-Patten (1996), the default mode for L2 learners' processing of second language is meaning. Language learners process input for meaning before they process it for form. When learners are able to process the meaning of a form and have already acquired the structure of the form no more processing is required. However, when the form is beyond the learner's ability, then the processing of the form possibly begins.

Moreover, the role of saliency in the intake component should not be avoided. Bardovi-Harlig (1987) identified salience (defined as the availability of input) as the main contributing factor to the unexpected outcome. As mentioned earlier, intake is defined as that portion of the available input that is selectively attended to and extracted from the stream of speech for further processing (Corder, 1967; Van-Patten 1996). For extraction of input, segmentation and selection of perceptually salient segments is required (Doughty, 2001, p. 215). The perceptual saliency approach (Slobin, 1985) which initially was based on children's first language acquisition, argues that human beings are programmed to perceive and organize input according to certain operating principles. These principles are based on the claim that some linguistic forms are more accessible or more salient to the acquirer than others. In second language acquisition, these principles have been adapted by Pienemann in his teachability theory.

Macroprocesses in second language acquisition have been explained in a number of ways. The most well-known of these discussions are: (1) Van-Patten's (1996) processing instruction, (2) Krashen's comprehensible input ( $i+1$  input comprehension), (3) and the notion of intake (Corder, 1967 and Gass and Selinker,



2001). These three notions are presented in the following sections. Input processing refers to the processes that occur before the apperceived input can be converted to intake. It focuses on the meaning-form relationship that eventuates before intake. This is a model for providing the learner with input and the role attention plays to convert input to intake. According to Van-Patten, 1996; Van-Patten and Cadierno, 1993; and Van-Patten and Sanz, 1995, attempts to influence the way that input is processed (input processing) is more effective than allowing an internalised system to develop (traditional instruction). What can be understood from the input processing hypothesis is that before input can move to intake, some sort of meaning-form mapping should occur.

A theoretical cognitive framework called an Integrated View of Second language Acquisition was developed by Gass (1988, 1994) and Gass and Selinker (2001). In this framework, Gass distinguishes five stages in the process of language acquisition: apperceived input, comprehended input, intake, integration and output. The first stage of acquisition is apperceived input. According to Gass (1994, p. 300), apperception is the process of understanding by which the newly observed qualities of an object are related to past experiences. Apperception is an internal cognitive act, identifying a linguistic form as being related to some prior knowledge. Thus apperceived input is that bit of language that is noticed in some way by the learner because of saliency and of the learner's existing knowledge.

Comprehended input is that portion of apperceived input that contributes to the learner's understanding of the message content. The notion of comprehended input is different from that of comprehensible input in two ways: first, it shifts the emphasis from the interlocutor to the learner, and second, there are degrees of comprehension that range from the explicit metalingual to the semantic level in comprehended input. Not all apperceived input becomes comprehended. According to Gass 'what is comprehended can either feed into the intake component or, alternatively, it may be not used by the learner for anything beyond communication (1988, p. 205). Intake is the process of assimilating linguistic material. According to Gass (1994) (following Chaudron, 1985), it refers to the mental activity that mediates between input and grammars. This stage leads to grammar formation and differs from apperception and

comprehension in the sense that, contrary to the latter two, it is not a subset of input. In short,

Intake is the component where psycholinguistic processing takes place. That is where information is matched up against prior knowledge and where, in general, processing takes place against the backdrop of the existing internalized grammar rule. The intake component includes hypothesis formation, hypothesis testing, hypothesis rejection, hypothesis modification, and hypothesis confirmation (Gass 1994: 303).

According to Doughty (2001), through repeated instances of segmentation or grammaticization on the basis of perceptual salience, or semantic transparency, together with other cognitive principles of storage, mapping and analysis, learners gradually internalize the target structure of the input into the developing language system. The intake component is where generalization and overgeneralization are likely to occur.

There are four possibilities with regard to the comprehended input: (1) hypothesis confirmation/or rejection, (2) apparent non-use, (3) storage and (4) non-use. First, hypothesis confirmation/rejection aids the learner to confirm or reject the current rule. This results in integration. The second possibility with regard to comprehended input is apparent non-use. This is when the information contained in the input has already been integrated into a learner's grammar. The third possibility would be storage. The information is stored in the memory for future use. Ellis (1994a: 349) suggests that this storage takes the form of some kind of explicit representation of L2 items and rules. To him, explicit knowledge can contribute to output through monitoring, and also may aid the processes that contribute to intake. The final possibility is non-use. As the result of lack of comprehension, learners make no use of input at all. According to Ellis (1994a), input at the level of intake, does not become part of the learner's implicit knowledge until it has been integrated (Ellis 1994a: 349).

The language performed by the learner is known as output. Gass (1994, pp. 306-7)) claims that “there are two aspects with regards to output. First, output is important in testing hypotheses. The output can be a feedback loop into the intake component. Second, output plays a role in forcing a syntactic analysis rather than solely a semantic analysis”. However she argues that output should not be equated with the learner’s grammar because of personality factors, confidence, differences in tasks, and genres and differences in degrees of strength of knowledge representation (related to automaticity of language processing). Also, she believes the output component represents the entire language learning process, more than the product of language knowledge.

Closely linked to the issue of output is the learner’s uptake. This term was initially used in second language learning to refer to the reports during or at the end of lesson (see Allwright 1984, and Ellis, 1994b). However, the meaning of uptake used by Lyster and Ranta (1997) and Ellis, Basturkmen, and Loewen (2001) is slightly different. According to Lyster and Ranta (1997), uptake refers to the learners’ response to the feedback they receive from teachers on their own efforts to communicate. According to them, it is defined as:

The students’ utterance that immediately follows the teacher’s feedback and that constitutes a reaction in some way to the teacher’s intention to draw attention to some aspects of student’s initial utterance (this intention is overall clear to the student although the teacher’s specific linguistic focus may not be) (Lyster and Ranta, 1997:49).

Ellis et al. (2001) have a slightly different definition of uptake. They argue that uptake can occur even when the previous move is without corrective feedback. They present the following definition:

1. Uptake is a student move.
2. The move is optional (i.e., the focus on form does not obligate the students to provide an uptake move).
3. The uptake move occurs in episodes where learners have demonstrated a gap in their knowledge.

The uptake move occurs as a reaction to some preceding move in which another participant either explicitly or implicitly provides information about a linguistic feature (Ellis et al., 2001: 286).

Uptake can be successful (when learners show that they have noticed the corrected feature by correctly producing it) or non-successful (when they show failure in using the corrected feature). The success or lack of success in uptake does not necessarily mean that acquisition has taken place (the learner has learned or not learned the corrected feature). To see whether the learner has learned a feature, his/her production of the feature in spontaneous situations must be considered. However, the presence or lack of uptake indicates that something may have been noticed, although again the absence of uptake does not necessarily mean the absence of noticing.

To sum up, the default mode of processing a second language form is meaning. Saliency plays an important role in processing the form for meaning. Macro-processing aspects involve three main issues: (1) processing instruction that refers to the stage which focuses on the meaning-form relationship that eventuates before intake, (2) comprehensible input, and (3) the notion of intake. Intake comprises of apperceived input, comprehended input, intake, and output.

### 2.7.2 Microprocessing Aspects

Error correction can be explained in terms of micro processes in the short term and working memory. Micro processes are comprised of processes such as selective attention and cognitive comparisons that occur on a moment to moment basis. Selective attention is the key component in learner focus on form. The centrality of

attention has been emphasized by some researchers for all second language forms. According to Schmidt and Frota's (1986) Noticing Hypothesis, learners need to pay attention to the details of the form and differences in order to learn. This is known as 'noticing the gap hypothesis'. These processes take place in working memory. Working memory consists of perceptual store and short term memory. The processes taking place in working memory may be more accessible to conscious awareness and learners may have some control over it. Therefore they may be open to immediate influence from outside. Doughty (2001) argues that working memory plays an important role during focus on form, because (1) representation of the input and output utterances are held in short term memory and compared there, and (2) it involves learners' simultaneous attention to form, meaning, and use during one brief cognitive event. This joint processing in the working memory is what makes focus on form different from other pedagogical approaches and is claimed to facilitate cognitive mapping among forms, meaning and use.

Cognitive resources comprises of long term memory and mental representation of the learners interlanguage. According to Doughty (2001), it is in the long term memory that learners hold their interlanguage and also where they form their propositional messages. In other words; it is in the long memory that propositional message becomes formulated into a speech plan. However, it is in the working memory that a special kind of monitoring operates. This monitoring involves cognitive comparisons of intention, input and output. However, in order for the learners to notice the gap, their interlanguage utterance or their propositional message that can not be formulated into speech due to their lack of sufficient knowledge in their interlanguage, must be compared with the target language form. In short, attention to form and comparison between noticed form and the mental representation of the learner's interlanguage take place in short term memory. These two processes are critical for error correction to be effective.

## 2.8 LEARNING/ACQUISITION DISTINCTION

According to Krashen there are two independent systems of second language performance: 'the acquired system' and 'the learned system'. Krashen (1983) argues

that acquisition is the result of receiving comprehensible input in a subconscious manner. Conscious learning can only act as a monitor of output after it has been initiated by the acquired system. He further argues that explicit instruction can only affect the learning of language rather than the acquisition of the target language. To him, conscious learning cannot be converted into acquisition. In short, for Krashen, as for the nativists, correction has very little effect on SLA. Opposing views to Krashen's hypothesis have emerged from different researchers. Most notable among these researchers are the ones that claim that while comprehension is essential for language acquisition, such acquisition does not entail unconscious or implicit learning processes; and that 'noticing' (or attention) is indispensable for the acquisition (Ellis, 1991; Gass, 1988, 1990, 1991; Schmidt, 1990, 1994, 2001; Schmidt & Frota, 1986). According to the noticing hypothesis (Schmidt and Frota 1986), in order to internalise the input, some degree of noticing must occur. The learners' noticing of the mismatch between the target norm and their erroneous interlanguage form is triggered by correction.

Noticing of the mismatch leads to subsequent grammatical restructuring. Moreover, Schmidt (1990, 1994) believes that subliminal language learning is impossible and that what the learners internalise is what they consciously notice. He believes that while intention in learning is not always crucial, attention plays the main determining role. He asserts that "attention also controls access to conscious experience" (1994: 176), thus allowing the acquisition of new items to take place. Moreover, Gass (1988, 1991), arguing against Krashen's mere comprehensible input as the main acquisition factor, looks at corrective feedback as an attention getting device. According to her, for learners to be able to internalise input in order to affect acquisition process, they must notice the input. Without noticing in the target language, nothing in the target language is available for intake into learners' interlanguage system.

Noticing can vary according to the nature of the task and the extent to which a form requires attention. Tomlin and Villa, (1994) believe that because our attentional capacity is limited, our performance on an attention demanding task decreases when we are simultaneously involved in paying attention to meaning and form. Lightbown and Spada (1993) suggest that when meaning is already transparent for learners and

they can concentrate on the more formal features of structures, they can benefit more from form-focused instruction. The global comprehension of the context correlates with the processing demands on the learners. When they understand the meaning of a context, they focus less attention on forms that are of secondary importance. Thus salience and noticing may have something to do with learners' proficiency, task demands, the nature of the form, and the distribution of the form.

In short, Krashen believes that there is a fundamental distinction between acquisition and learning and learning cannot be converted into acquisition. He argues that instruction can only affect learning rather than acquisition. However, his views have been rejected by a number of researchers. They argue that comprehension per se does not lead to acquisition and that noticing the target features is essential.

## **2.9 ATTITUDES TOWARDS ERROR CORRECTION AND AGENTS OF CORRECTION**

Attitudes of teachers toward error correction changed during the pre-cognitive and cognitive periods. As mentioned earlier, in the pre-cognitive period of error cause identification (pre-behaviouristic and behaviouristic periods), error correction used to be carried out from an impressionistic perspective which lacked any understanding of the creative role of the learner in his/her interlanguage processing of the deviated forms. Teachers considered error treatment to be an unhappy experience from which the results were not to be observed directly in most cases. They looked on the job as a frustrating attempt to reconstruct the non-native structures which in the majority of cases were doomed to failure. Errors seemed to occur even when the teacher conscientiously worked hard. In the cognitive period of error cause identification, error correction is viewed differently. It involves the recognition of the learner's role in language learning and his/her continuous process of hypothesis making, getting closer and closer to native language norms. In this view, errors are considered inseparable parts of language learning that should be tolerated and be given proper feedback, more in line with the interlanguage processing of the learner. So, in the

cognitive period it is more likely that teachers do not find error correction as frustrating as they used to do in the pre-cognitive period.

Another reason for the negative attitudes of teachers towards error correction goes back to the fact that they cannot employ certain set strategies in dealing with students' errors in a particular situation. Analysis of taped transcripts for the ESL classrooms has led Allwright (1975) to conclude that teachers are unreliable, unfair, and inconsistent in their treatment of errors. He attributes this behaviour to the fact that the teacher is called upon to make on-the-spot, public summations of classroom situations and to select treatment types and specific correction procedures, while concurrently taking into consideration the characteristics of the students involved (Allwright, 1975: 200). Another researcher, Mehan (1974), believes that this lack of ability to adopt specific strategies in dealing with errors in a particular situation stems from the fact that there are too many variables involved to which the teacher has to pay attention.

Apart from the problems teachers face when correcting student errors, there must be a reason behind every instance of correction. The type of feed-back language teachers provide for students reflects their view of language and their objectives. If teachers view language as a perfectible grammatical system, they focus students' attention primarily on linguistic form, and correct all the errors which the students make when they speak the language. If teachers view language as a functional communicative system, they focus the students' attention on meaning and they respond to content and comprehensibility (Beretta, 1989 Chastain, 1988).

The views of teachers on language learning have considerable effects on the way they treat errors. The point worth mentioning in this respect is that many teachers have the false impression that output should be an authentic representation of input (Sharwood Smith, 1994). This ignores the functions of intake, that knowledge of language learners internalise. Intake, as Sharwood-Smith (1994) believes, may be independent of the teacher's syllabus, being subject to an internal system analogous to Chomsky's Language Acquisition Device (LAD). Error correction is evidently not very effective unless it complies with the internalised system (Lengo, 1995:20). But one must note



that this extreme view of the internal system undermines the role of the linguistic environment. There is evidence that error correction does work and input does have an effect at least on performance. (Tomasello and Herron, 1988; 1989).

The attitude of students plays an important role in learning a second language. This attitude is developed by a variety of factors, among them feedback, which may have desirable or undesirable cognitive and affective results. Students' characteristics have an impact both on the teacher who corrects the learners' errors and on the learner who is corrected. The teacher's treatment of error might also be influenced, consciously or unconsciously, by his/her perception of the various characteristics student exhibit – individual differences, past history, current ability, etc. The attitude of learners toward error correction, not only by teachers during focused activities but also by native speakers with whom they converse, is remarkably positive (Chenoweth, Chun, and Luppescu, 1983). Cathcart and Olsen (1976) found that ESL learners hold positive attitude toward correction like to be corrected by their teachers and want to have more correction than they are usually provided with.

One important question is who should correct learner errors. There are three possible answers to the question: the teacher, the learner making the error, or the other learners. According to Ellis (1994a: 585), “studies of repair in naturally-occurring conversations have shown a preference for self-initiated and self-completed repair. In classroom contexts, where, as we have seen, discourse rights are unevenly invested in the teacher, other initiated treatment is expected.” Kasper (1985: 200) found that in the language-centred phase of an English lesson in a Danish *gymnasium*, the trouble sources were identified by the teacher but they were repaired either by the learners responsible for them or by other learners. In the content phase of the same lesson, self-initiated and self-completed repair was evident, although the learners were inclined to appeal for assistance from the teacher.

In short, the studies conducted by Holley and King (1971), Fanselow (1977), Courchene (1980), Hendrickson (1978), and Wren (1982) support the fact that self correction is more effective than teacher's correction. Another piece of evidence for the effectiveness of self correction comes from Ellis (1991). He conducted a study to

find out whether learners do reformulate their use of past tense in their utterances given the second opportunity to do so, or ignore it. But interestingly he found that those who, when pushed through a request for clarification to reformulate their utterances, did so by correctly forming the past tense and maintained their improved accuracy in the past tense on the subsequent occasions.

In brief, teachers' attitudes toward error correction have undergone considerable variation. They went from a negative view of errors to a positive view in which errors were seen to result from the learner's process of hypothesis making. Learners' attitudes towards error correction can also vary according to their characteristics, their cognitive and affective states, and the nature of the treatment they receive. Research shows that learners prefer to be corrected by more competent interlocutors.

## 2.10 TIMING OF CORRECTION

Timing of error correction has been relatively under researched. Nevertheless, it may have a significant role in the effectiveness of correction. Allwright and Bailey (1991) assert that if we adopt the notion of interlanguage in the discussion of second language learner's errors, we realize that by treating errors teachers try to help learners move ahead with their interlanguage development. However, they believe mistimed error treatment may not be helpful and may even be harmful if it is aimed at structures which are beyond the second language learners in terms of their interlanguage development. As they mention, by the word 'mistimed' they mean dealing with forms at the right time in the course of the learners' interlanguage development. They have not specifically made it clear whether the treatment should be carried out within the interactional context or in isolated setting. (Allwright and Bailey, 1991).

The significance of time on the effectiveness of error correction has been mentioned by Long (1977). He points out that the psychology of research literature shows that the feedback becomes less effective as the time between the performance of the skill

and the feedback increases. Long (1996) raises the question of whether learners are able to remember their initial erroneous utterance and the treatment long enough to compare them, identify them, and to modify them. However, he does not specifically state what he means by this time gap. Reactive focus on form may include instances when the learner is interrupted on the spot for correction or it may include any time after the learner's talk. However, it seems that what Long mentions does not include the immediate reactive focus on form.

It must be noted that time of correction does not necessarily mean the moment of time which is usually measured by means of minutes and hours. It is more concerned with the interactional engagement of interlocutors. In an immediate reactive focus on form, there is an interaction between the learner and the teacher, whereas in the delayed reactive focus on form the interaction is less.

The necessity of investigating immediate and delayed correction comes from the fact that the second language teacher should recognize the appropriate time for the learner to be corrected. As mentioned earlier, the teacher can decide to draw the learner's attention to form proactively (telling them in advance about linguistic regularity plus its exception) or reactively (telling them about their errors at the moment the generalisation is made). Tomasello and Herron (1988 and 1989), in their Garden Path technique, compared these two methods for correcting students in the language classroom and found that learners performed better if their transfer errors received immediate reactive correction by form-based cognitive comparisons. This result corresponds to White's (1987) claim that specific grammar teaching and correction can in fact be beneficial for acquisition. Chaudron (1988:136) has cited several studies shown in a table to reveal that classroom teachers will likely correct learner's errors either when they pertain to the pedagogical focus of the lesson or when they significantly inhibit communication.

Some other researchers (Doughty and Williams, 1998; Doughty 2001) view error correction as focus on form constructs that need to be in greater scrutiny in cognitive processing terms. Doughty (2001) also emphasises the need to find out when best to correct error -in her own terms, 'to intrude' into the ordinary language processing.

She believes that immediate correction is somehow better since there is a need for the learner to be interrupted in the middle of an act of communication. Lightbown (1998) has a different opinion in respect to the timing of error correction. She thinks that although immediate correction is vital, it can be detrimental to meaning focused activities and it might be better to correct sometime after the commission of the error by the learner.

In brief, there has been relatively little research on timing of correction. It has not been clear, whether, or to what extent the error correction should be carried within the interactional context.

## 2.11 MANNER OF CORRECTION

### 2.11.1 General Issues

There have been a considerable number of studies on the manner of correction. Probably the main common finding of these studies is that it is an enormously complex process (Ellis 1994a). This can be seen in some of the extensive FonF and corrective reaction taxonomies such as Allwright, 1975; Van Lier, 1988; Bailey, 1985, Doughty and Williams, 1998; Chaudron, 1977). For example, Chaudron (1977) presents a total of 31 'features' (corrective acts that are dependent on context) and 'types' (acts capable of standing independently). Another useful taxonomy is recommended by Bailey (1985) who drew from the work of Allwright (1975). The following seven "basic options" are complemented by eight "possible features" within each option (Bailey, 1985:111).

#### Basic Options

1. To treat or to ignore
2. To treat immediately or to delay
3. To transfer treatment (to, say, other learners) or not

4. To return, or not, to original error maker after treatment
5. To permit other learners to initiate treatment
6. To test for the efficacy of the treatment
7. To let it be self- treated.

#### Possible Features

1. Fact of error indicated
2. Location indicated
3. Opportunity for new attempt given
4. Model provided
5. Error indicated
6. Remedy indicated
7. Improvement indicated
8. Praise indicated

All the basic options and features within each option are conceivably practicable modes of error correction in the classroom (Brown, 1987). In order to ascertain which options or combinations of options are appropriate at different moments, the teacher needs to develop the intuition, through experience and solid eclectic theoretical foundation. Principles of optimal affective and cognitive feedback, reinforcement theory, and communicative language teaching all combine to form these theoretical foundations. Bailey (1985:200: 249) gives some options and principles for error correction: (1) correct effectively (2) correction should be sensitive (3) match correction to students' preferences (4) correction must be two staged (a combination of content bases and form based correction).

But what Bailey, James and the other language experts who have a more methodological approach to error correction overlook are two important issues. First, in any correction, the teacher's job constitutes only a partial section of the treatment. The main part of the treatment depends on the readiness and, better to say, the socio-cognitive contribution of the learner. Second, these language experts seem to consider metalinguistic feedback to error as the only way for correction, overlooking the role of implicit and explicit feedback.

As for the socio-cognitive contribution of the learner, Nessaji and Swain (2000) and also Aljaafreh and Lantolf (1994) have investigated the role of the language learner's own efforts and socio-cognitive share in language learning. They examined negotiated help provided within the learner's ZPD (zone of proximal development). The learner's role is in fact crucial in altering his interlanguage hypothesis; in other words, correction takes place mainly when the learner understands the need for altering a hypothesis about the target language form. The study conducted by Tomasello and Herron (1988, 1989) referred to as 'down the garden path' can be a good example of socio-cognitive readiness.

As for the implicit error correction (overlooked by Bailey, 1985 in his taxonomy), Long (1996) presents a wider view of feedback in general. He suggests that input in the target language can be categorised into two classes: positive evidence and negative evidence. Positive evidence, according to Long, is providing the learners with models of what is grammatical and acceptable in the target language; and negative evidence as providing the learners with direct or indirect information about what is unacceptable (also see Carroll, 2001 and White, 1991). This information may be: explicit (e.g., grammatical explanation or overt error correction) or implicit (e.g., failure to understand, incidental error correction in a response, such as a confirmation check, which reformulates the learners' utterance without interrupting the flow of the conversation in which case, the negative feedback simultaneously provides additional positive evidence.

Lyster and Ranta (1997) and Lyster (1998) have discerned six main feedback moves in the data base. They are: explicit correction, recasts, elicitation, metalinguistic clues,

clarification requests, and repetitions. These descriptive frameworks provide a basis for examining teachers' preferences regarding types of error treatment. Studies have shown, for instance, that repetitions of various kinds are a common type of corrective feedback (Salica, 1981; Nystrom, 1983). However, previous research has shown that metalinguistic correction of errors has been more effective than implicit and indirect correction (Lyster and Ranta, 1997). Since most research in this area has been descriptive, there is a need for further experimental investigation into the efficacy of different corrective moves.

### 2.11.2 Explicit and Implicit Error Correction

The issue of explicit and implicit instruction has been the topic of controversial debates among second language researchers for some time, with many of these researchers broadly attending to classroom vs. natural setting language learning. Some others attended to classroom-explicit instruction as opposed to implicit instruction. Also, a relatively few directed their attention to explicit vs. implicit correction issue. The topic has also evolved to create certain misunderstanding that comes from two different distinctions made by implicitness and explicitness.

The first distinction is when the topic includes explicit knowledge vs. implicit knowledge. Implicit knowledge refers to the abstract system of rules and items that underlie actual performance. The distinction deals with in the controversial issue of interface and non-interface positions taken by Bialystock's (1978) theory of second language learning and Krashen's (1982) Monitor Theory respectively.

The second distinction is made between the two types of learning. This is known as implicit and explicit learning. Implicit learning has been characterized as an unconscious and passive process, where people are exposed to information inattentively and acquire knowledge of that information simply through that exposure. Explicit learning, on the other hand, is characterized as an active process where people seek out the structure of any information that is presented to them with a degree of attention. What makes these two types of learning different is the level of consciousness with which the learner is exposed to information. Some psychologists

suggest that much of the information learned during the normal course of life is learned implicitly, not explicitly. They cite activities such as language learning, bicycle riding, and other complex activities, as examples of implicit learning. While these are activities that people can do, they cannot explain how they do them (Reber 1976). This account of the topic involves conscious and subconscious internalisation of language and, on the whole, involves cognitive processes taking place in the mind of the learner.

The second account of explicit/implicit distinction, however, concerns matters related to explicit instruction vs. implicit instruction; that is, it relates to the pedagogical part of the learning. However, in the process of instruction, it involves the conscious and sub-conscious parts of cognitive processes taking place prior to the internalisation of taught structures. There are several key issues concerned when errors are corrected implicitly or explicitly and each researcher has focused on only one or two in his /her work. Briefly speaking, they can be summarised as follows:

- a. Degree of communicativeness of language learning
- b. Learner characteristics
- c. Difficulty level of the items to be corrected
- d. Types of grammatical structures to be corrected
- e. Variability of the items to be corrected (Ellis 1994a)
- f. Isolation or contextual factors of the item to be corrected

Unfortunately the number of research works in the area of explicit and implicit correction with respect to the issues above is considerably less in comparison with other areas of error correction. Most studies, so far done, have focused on large scale instruction programs as well as on specific differences in explicit presentation and explanation of rules and implicit practice of rules (Chaudron 1988). Some specific differences in rule presentation (explicit and implicit) with controlled instructional methods were investigated by Levin (1972) and Von Elek and Oskarsson (1975) under the name of the Swedish GUME project. There were some differences shown in favour of explicit instruction. The research was limited to adults and females and because of its limited time, provided no information on learnability in the long run. But as, we notice, they were not specifically concerned with error correction.



Although correction is in fact a kind of instruction, it should be considered different in a sense that it is an instructional reaction in response to the error committed by the learner during the course of his /her attempt(s) to communicate. It is in a sense a response to the need of the learner at a particular time. This is where the degree of communicativeness in language learning becomes important.

Lightbown and Spada (1993) report an experiment in which two language teachers are involved. One of the teachers (experimental Teacher) treated his students' errors on WH interrogative structure in an explicit form-focused manner in an experimental situation. The other teacher (control teacher) did not follow the experimental programme and regularly engaged in incidental correction of students who produced inaccurate WH questions in the course of ongoing classroom interaction, and insisted on correct production. The results indicated that the control group significantly outperformed the experimental group. Lightbown and Spada (1993) argue that these tactics were maximally effective because the corrections were regular, yet incidental and contextualised, assisting the students to form more correct utterances which they were already motivated to produce for ongoing communicative ends (Spada and Lightbown, 1993).

While investigating the effect of implicit and explicit treatment of errors in respect to the age of learners, Seliger (1975) found that some grammatical structures were better learned by explicit learning. Also, depending on the type of structures, some forms are learned by inductive instruction and some others by deductive instruction. In addition, the degree of complexity has also been investigated by Reber (1976) who with his final state grammar indicates that explicit instruction is more effective with simple structures and implicit instruction is more effective with complex structures. The degree of implicitness is also a factor that can be taken into consideration. There are various implicit corrective feedbacks that range from recasts to a simple nod. Lyster and Ranta (1997) looked at different types of error feedback offered by teachers and noted that recasts were much the most common. However, they did not lead to immediate self correction.

Factors pertaining to context (i.e. use of language in a contextual setting) and isolation also play an important role in explicit and implicit manner of correction. In N. Ellis's (1991) study, explicit instruction of rules brought about solid knowledge of the rules but was not very successful with the use of the knowledge. However explicit instruction plus exemplification of rule was the most fruitful.

The recent laboratory research studies (N. Ellis 1993, Michas and Berry 1994, Alanen 1995, Dekeyser 1995, de Graffe 1997, Robinson 1996, 1997, Carroll and Swain 1993, Rosa and O'Neil 1999) showed that explicit feedback was more effective than implicit feedback. Also, the findings of some previous classroom research studies conducted by Leow (1998), and Van-Patten and Oikarinen (1996), Doughty (1991), and Scott (1989, 1990) show that explicit correction is more effective than implicit correction.

Michas and Berry's (1994) longitudinal study showed that explicit rule presentation, followed by examples, worked better than the implicit presentation of word/pronunciation pairings. Alanen (1995) studied online processing of locative suffixes and a rule of 'consonant gradation' in semi-artificial Finnish. The results of his experiment showed explicit feedback were better than implicit feedback on a grammaticality judgement task and on a sentence-completion.

Dekeyser (1995) and de Graffe (1997) studied artificial languages (Implaxen and eXpranto) in computerised experiments. Both their studies focused on a limited number of structures. In Dekeyser's study the implicit treatment group were presented with numerous examples and also were given feedback in the form sentence/picture pairs.

In de Graffe's study, the implicit group participated in variety of structural as well as meaning focused activities. These two studies have also investigated the interaction between the types of instruction (explicit or implicit) with the types of structures (morphological and syntactic). They found that there was no relation between the type of treatment and the structures in focus. Robinson (1996) compared the effectiveness of explicit and implicit treatments of pseudo-clefts and subject-verb inversion after

adverbials (embedded in English sentences). He had four treatment groups in his study: incidental, implicit, rule-search, and instructed (which was in fact the explicit deductive group). The explicit deductive group performed significantly better in production than did the other three.

Doughty (1991) investigated the effect of explicit and implicit instruction. The target of her study was the production of relative clauses. There were three experimental groups in her study: (1) explicitly treated group, (2) those who were treated with enhanced and elaborated input, and (3) those who were provided with abundant examples of relative clause structures. The first and second group scored better than the third (the exposure group) on production tests. However, the second group (enhanced and elaborated input group) was better in the comprehension tests than the first group (the explicit group).

In a study with learners of French, Scott (1989, 1990) studied relative pronouns and the subjunctives. The explicit group was given the rules about these target forms but the implicit group was only provided with a reading task flooded with the target. The learners' performance was measured by written post-tests. One of these studies (Scott, 1989) also tested the learners' performance by an oral test. The results of this test did not show any significant difference. The explicit treatment in this study proved to be more effective than the implicit treatment.

However, there are a number of studies that directly deal with reactive focus on form. Table 2.4 (taken from Ellis, Loewen, and Erlam, 2006) summarises 11 studies that have compared implicit and explicit corrective feedback. As Ellis et al. point out, there are several points to these studies that make drawing any conclusions about their findings difficult. They are as follows:

1. A number of these studies (e.g. DeKeyser, 1993; Havranek & Cesnik, 2003) investigated corrective feedback through post hoc analyses of normal classroom lessons.

2. A number of these studies involved computer-based interaction, others involved classroom or laboratory interaction.
3. There is a combination of treatments involved in these studies. Some of them use mechanical exercises, some communicative tasks and others a mixture of the two.
4. The treatment also differs in terms of whether it involves output-processing or input-processing.
5. Operationalisation of implicit and explicit feedback is not consistent among these studies.
6. Measurement of learning varied among them. It was more in favour of explicit knowledge than implicit.
7. Finally, some of these included an explicit explanation of the grammatical target prior to the practice activity, whereas others did not.

As mentioned in item 5 above, feedback in these studies varied too. Some studies (Carroll, 2001; Carroll & Swain, 1993; Kim & Mathes, 2001; Leeman, 2003; Lyster, 2004) used the form recasts as implicit correction. One of these studies, Muranoi (2000), used both request for repetition and recast. Sanz (2003) made use of only requests for repetition (Sorry, try again.). Another of these studies (Havranek and Cesnik, 2003) used almost a combination of implicit feedback forms in their classroom study. Rosa and Leow's (2004) 'implicit condition' actually consisted of indicating whether the learners' answers were right or wrong and thus, as Ellis et al see it, might have been more accurately labelled 'semi-explicit'.

Also there have been some inconsistencies with the way explicit feedback was operationalised. Some of these studies used a minimal form of explicit feedback, indicating that an error has been made (e.g. Carroll & Swain's (1993) 'explicit rejection' or Leeman's (2003) 'negative evidence'). Lyster's (2004) study consisted of clarification requests, repetitions (with different intonations for errors), metalinguistic clues and elicitation of correct form. Different types of explicit forms

were used by experimental classroom studies (DeKeyser, 1993; Havranek & Cesnik, 2003). Explicit correction was provided to learners on line and immediately in all of these studies. However, in Muranoi's (2000) study the feedback was given to the learner after the treatment task had been completed.

Carroll (2001) and Carroll & Swain (1993) conclude that the groups that received direct metalinguistic feedback did better than all the other groups in producing sentences with dative verbs and noun formation, and also that explicit feedback aids generalisation to novel items. Muranoi (2000) found that the group that received formal debriefing (which included metalinguistic information) scored better than the group that received meaning-focused debriefing, although only on the immediate post-test. Havranek and Cesnik (2003) found that recasts 'only' were the least effective form of feedback in their classroom study. Lyster (2004) reported that the learners who received metalinguistic feedback did better than the group who received implicit corrections (in the form of recasts) on both immediate and delayed post-tests. More detailed explicit metalinguistic feedback works better than less explicit metalinguistic feedback (Nagata, 1993; Rosa & Leow, 2004).

Table 2.4: Studies Comparing the Effects of Different Types of Corrective Feedback (taken from Ellis et al, 2005)

Study	Participants	Target structure	Design	Tests	Results
Carroll & Swain (1993)	100 Spanish adult ESL learners (low intermediate)	Dative verbs.	Five groups; (A) direct metalinguistic feedback, (B) explicit rejection, (C) recast, (D) indirect Metalinguistic feedback, (E) control. Treatment consisted of two feedback sessions. each followed by recall (i.e. production without feedback).	Recall production tasks following each feedback session.	All the treatment groups performed better than the control group on both recall tasks. Group A (direct metalinguistic feedback) outperformed the other groups.
Nagata (1993)	32 2 <sup>nd</sup> year university learners of L2 Japanese	Japanese passive structures; verbal predicates and particles.	Learners performed computer-based exercises requiring them to respond to sentences produced by an imaginary partner. Sentences were computer-parsed and feedback on errors provided in two forms: (A) traditional group received feedback indicating what was missing or not expected, (B) intelligent group received same feedback + metalinguistic explanations.	Written test using same format as treatment task.	Group (B) significantly outperformed group (A) on particles but not verbal predicates. Learners expressed preference for metalinguistic explanation.
DeKeyser (1993)	25 Dutch high school seniors learning L2 French	Variety of features, predominantly morphosyntactical.	Two groups; (A) extensive explicit corrective feedback during normal class activities, (B) limited explicit corrective feedback . 10 class periods.	Three oral communication tasks (interview, picture description and story-telling); a fill-in-the-blank test. Tests administered twice.	No statistically significant differences evident between groups (A) and (B). Learners with high previous achievement, high language aptitude, high extrinsic motivation and low anxiety benefited the most from error correction.

Muranoi (2000)	114 1 <sup>st</sup> year Japanese college students	Indefinite article to denote new information.	Three groups; (A) interaction enhancement (IE) by means of requests for repetition and recasts in communicative task + formal debriefing (explicit grammar explanation), (B) IE + meaning-focused debriefing, (C) control (no IE with meaning-focused debriefing).	Grammaticality judgement test; oral production task; written production task; two post-tests 5 weeks apart.	Both experimental groups outperformed the control group on both post-tests; group A outperformed Group B on post-test 1 but not on post-test 2.
Kim & Mathes (2001)	20 Korean adult ESL learners (high beginners and intermediate)	Dative verbs.	One group received explicit Metalinguistic feedback; the other recasts; feedback was presented in two sessions one week apart each followed by production with no feedback.	Controlled production tasks (as in the treatment) without feedback.	Differences between performance on first and second production tasks not significant; differences between groups for gains in production not significant. Learners expressed preference for explicit feedback.
Carroll (2001)	100 adult low-intermediate ESL learners	Forming nouns from verbs (e.g. 'help (V) help/ helping' (N) ) and distinguishing THING and EVENT nouns.	Five groups as in Carroll and Swain (1993).	Elicited verb-noun conversions in a sentence format.	All types of feedback helped learners to learn the items targeted by the feedback but only explicit Metalinguistic information (group A) and indirect prompting (Group D) enabled learners to form a generalisation. Modelling/ correction (i.e. recasts) did not facilitate generalisation.
Havranek & Cesnik (2003)	207 university students specializing in English	Variety of English phonological, lexical and grammatical features.	Data on 1700 corrective feedback episodes from normal English lessons.	Class- specific tests (written, spoken completion tasks; translation; correction and reading-aloud) directed at corrected items.	Effectiveness of corrective feedback techniques was, in order: (1) elicited self-correction, (2) explicit rejection + recast, (3) recast alone.
Leeman (2003)	74 first-year university learners of Spanish	Spanish noun-adjective agreement.	Four groups performing communicative task one-on-one with researcher; (A) recast group, (B) negative evidence group (source or problem indicated but not corrected), (C) enhanced salience with no feedback, (D) control group.	Post and delayed post picture descriptions tasks.	Only groups (A) and (C) outperformed the control group on any post-test measure. No difference between (A) and (C).

Sanz (2003)	28 first-year university learners of Spanish	Position of clitic pronouns between object and verb.	Computer-delivered input processing instruction without prior explicit instruction. Three groups; (A) explicit Metalinguistic feedback, (B) implicit feedback (e.g. 'Sorry, try again.').	(1) interpretation tests; (2) production tests, (a) sentence completion and (b) written video retelling.	Both groups significantly increased ability to interpret and accurately produce the target structure with no difference between the groups on any measure.
Lyster (2004)	148 (grade 5) 10-11 year olds in a French immersion programme	French grammatical gender (articles + nouns).	Group 1 received form-focused instruction (FFI) + recasts; Group 2 FFI + prompts (including explicit feedback); Group 3 FFI only. Control group.	Four tests; (1) binary choice test, (2) text completion test, (oral production tasks), (3) object identification test, (4) picture description test. Two post-tests (PT) with PT 2 administered 8 weeks after PT1.	FFI-prompt group was only group to outperform control group on all 8 measures (PT1 and PT2). FFI-recast group outperformed control group on 5 out of 8 measures. FFI-only group outperformed control group on 4 out 8 measures. Statistically significant differences between FFI-prompt and FFI-only groups but not between FFI-recast and FFI-prompt.
Rosa & Leow (2004)	100 adult university learners of L2 Spanish enrolled in advanced courses.	Contrary to the fact conditional sentences in the past.	Computer-based exposure to input-based jigsaw task characterized by 'task essentialness'. Two groups; (A) explicit feedback to both correct and incorrect responses involving Metalinguistic explanation + opportunity to try again if incorrect, (B) implicit feedback indicating whether the answer was right or wrong. Control group.	Three multiple-choice recognition tests and three written controlled production tests; immediate and delayed post-tests.	Results presented in terms of 'old' and 'new' items.  For the recognition tests a statistically significant difference evident between (A) and (B) for new but not old items.  For the production tests a statistically significant difference was evident for the old but not the new items. Both groups outperformed the control group.



According to Ellis, et al. (2006), given the substantial differences in designs and purposes of these studies, generalisation of the findings must be made cautiously. However, overall the results of these eleven studies do indicate that the explicit correction is more effective than implicit correction where the feedback is given to the learners while they are involved in production.

In addition, implicit/explicit correction and items/rules learning has been the subject of research. Some researchers believe that only items can be taught explicitly and rules should be taught implicitly. Carroll, Swain and Roberge (1992), in their study of learning French derivational morphemes, like 'age' and 'ment', found that in explicit corrective feedback learners were not able to generalize their instruction to new situations.

In short, there have been a considerable number of studies on the manner of correction both from pedagogical and psycholinguistic aspects. However, most of these studies have focused on one or two particular features by using different means of measurement to assess learning.

## 2.12 TYPES OF ERRORS TO BE CORRECTED

### 2.12.1 General Issues

Every teacher has different criteria regarding the type of errors to be corrected. The subjective nature of this point has crucial consequences for error correction and learning the language. The question is whether correcting particular structures and overlooking others is worth the effort. A research was conducted by Whitus (1990) to show selective versus wholesale error correction of grammar and usage in the papers for adult intermediate level ESL writing students. Over 13 weeks a control group (n=7) had all errors corrected, while an experimental group (n=9) had only article and sentence construction (run-on sentences, fragments, common errors) corrected. The results indicated a better performance by the experimental group than the control one. The study implies that teachers should be sensitive to error type when treating errors.

Investigating the type of errors for correction, Hendrickson (1978) contend argues that it is important to classify the errors when it comes to the matter of treatment consideration. He asserts that, correcting three types of errors can be quite useful to second language learners:

[E]rrors that impair communication significantly; errors that have highly stigmatising effects on the listener or reader; and errors that occur frequently in students' speech and writing (Hendrickson 1978: 392).

Cohen (1975) has listed the types of errors for correction in the order of importance.

1. Errors affecting intelligibility. As mentioned before, Burt (1975) distinguishes “global” errors, errors affecting overall sentence organization (e.g. wrong order), from “local” errors, errors affecting only single elements in a sentence (e.g. noun and verb inflections, articles, auxiliaries, etc.). She reports that native speakers of English understand foreign student utterances possessing global errors than with local errors. Burt suggests that a teacher should work primarily on the correction of global errors; because they help the learner in his/her attempts to communicate more effectively. However, while, the justification that Burt makes does seem to be logical, it is not always possible to locate the exact erroneous form which has caused the distortion of communication in a particular attempt for communication. Moreover, it is not always possible to decide on the priority of correcting one error over the others, when a series of errors are responsible for the lack of communication.

2. High-frequency errors. Errors which occur frequently have been considered important enough to correct (Dresdner, 1973; Allwright, 1975). But if such errors are minor, their correction may only serve to annoy the learners and to waste time (George, 1972). This category poses a problem too. Frequency alone can not be considered the main reason for correction. Many errors are of high frequency (like articles and determiners) but do not greatly harm communication very

significantly. Correcting these errors may be damaging to the learner's language learning.

3. Errors at a high level of generality. It has been suggested that errors involving general or broad grammatical rules are more deserving of correction than those dealing with, say, a grammatical exception or a lexical item (Johansson, 1973).

This seems logical since the learner, through the process of induction, generalises the rules to which he/she is exposed and structures that are of high level of generality can be acquired more readily. But one must be careful not to overemphasise the role of these types of errors because they do not directly affect communicative aspects of interaction. What a learner initially needs is to be able to communicate, though not fluently, and to be considered as a partner in the conversation. There are many other types error that impede communication and deserve to be corrected before errors of generality.

4. Errors with stigmatising or irritating effects. Even if an error does not affect intelligibility or occurs frequently, it could still be worthy of remediation because of the stigmatising effects that it has on the reader (Sternglass, 1997) or the listener.

5. Errors affecting a large percentage of students. Some sources suggest that only errors common to the whole class are deserving of class time for correction (Holley and King, 1971; Olsson, 1972). The number of students affected by an error may vary not only with respect to the native language of the learner, but with respect to his learning style and other characteristics such as individual differences, past history, and current state.

6. Errors that are relevant to pedagogical focus. The importance that a teacher attributes to an error may depend on the objectives of a particular lesson. For example, a teacher may let an error of verb tense go uncorrected during a lesson in which he is explicitly teaching and correcting for appropriate article usage." (Cohen, 1975: 114-116).

However, early studies of error correction overlooked the important element of processability of the forms. This is perhaps because second language acquisition was not very much the issue of focus at the time. The main reasons for the overlooking of processability were: first correction was very much looked at from a pedagogical sense which in turn was greatly influenced by still-ongoing-contrastive views. Secondly the learner's cognitive side of learning still had little place in researchers' analysis of language learning. This was because second language learning kept its distance from psychology in general.

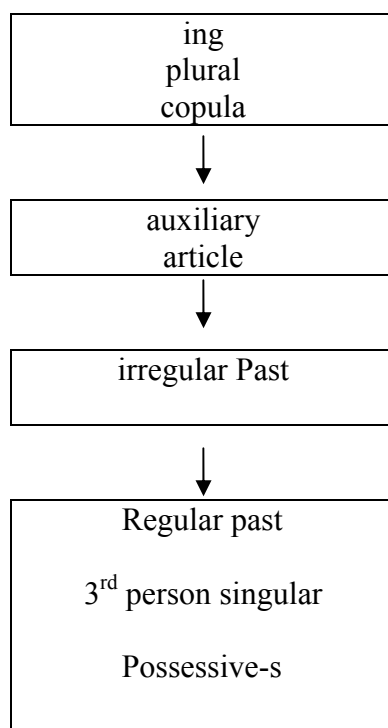
Nevertheless, it amounts to saying that, apart from a few non-ESL studies like Gass et al. (2003), to the best of the researcher's knowledge, there has not been research comparing the effects of correction on acquisition morphological versus syntactic errors. There has, however, been a good deal of research focusing on acquisition related to morphological errors as well as on syntactic features.

#### 2.12.2 Morpheme Studies and Multi-dimensional Model

Interest in the research on the acquisitionability of structures began with the study of acquisition of morphemes and developed to include research on learners' development, most notable of which are multi-dimensional studies and the teachability hypothesis. Much of the impetus for initial work in error correction studies stemmed from the fact that some researchers became interested in the acquisitional order of morphemes because they had been motivated by studies in error analysis and universal grammar views. Brown (1973) observed that there was a predictable order of acquisition for certain inflectional morphemes in English. He studied three children, Adam, Sarah, and Eve learned English morphemes in almost the same order. The order of Acquisition for these three children was as follows: (1) present progressive (2/3) in, on (4) Plural 'S' (5) past irregular (6) possessive 'S' (7) uncontractible copula 'is' 'am' 'are' (8) articles ('a' and 'the') (9) past regular 'ed' (10) third person regular 's' (11) third person irregular. Interestingly the order does not reflect the frequency of these morphemes in the speech patterns of the children (Gass and Selinker, 2001). Brown's pioneer work was carried on by a number of researchers in the field of second language acquisition. In particular they sought to

establish whether, as in first language acquisition, there was an invariant order of acquisition. Most of these studies were cross sectional than longitudinal. To find the acquisition order of morphemes, the accuracy order of morphemes was calculated. Two early studies (Dulay and Burt 1973; 1974; Bailey, Madden and Krashen, 1974); found that the acquisition order for a group of English morphemes remained the same irrespective of the learners' first language. Larsen- Freeman (1976) replicated the same study by using learners with different language backgrounds and different tasks. Bailey, Madden, and Krashen (1974) studied the oral data of a group of Spanish and non-Spanish-speaking ESL learners and found that the acquisition order for Spanish and non-Spanish students were similar. Also, they found a similarity of order between their study and Burt and Dulay's. Krashen, Butler, and Robertson, (1978) found that the acquisition order for the fast writing was the same as for the 'careful' writing. Also, they found that the order for adults in this study was similar to those reported for most of Dulay and Burt's. Table 2.1 presents Krashen's (1977) natural order of acquisition.

Table 2.1: Krashen's Natural Order of Acquisition



Research on developmental sequence has mostly been done in ESL contexts (Pienemann 1984, 1987, 1989, 1989, and Pienemann and Johnston, 1986). One

exception is Nielson's (1997) study which investigated the order of acquisition of Arabic by students in Norway whose first language was Norwegian. Pienemann and Johnston, (1986) present the proposed developmental sequence ( Multidimensional) model for the acquisition of some structures as follows: The first developmental stage involves undifferentiated elements-sequences which appear as chunks to the learner. The second developmental stage involves the production of strings of elements. In this stage, the learner has not yet acquired the ability to differentiate between these elements. The third developmental stage is when the learner is in fact able to identify the start point and end points of the strings and to perform operations in these positions. Example: 'yesterday, I sick' instead of 'I sick yesterday'. The fourth developmental stage comes when the learner is able to characterise some elements in the middle of the string as being of a particular kind. He/she will be able to shift that particular element to the start or the end position of the string. Example: 'Can you tell me?' The fifth developmental stage is when the learner is able to characterize various elements within a string as being of different kinds. A learner who is capable of this operation, can move such elements around in an ordered way (internal inversion) within a string into sub-strings. By the end of this stage, he/she will be able to remove elements from the substrings and attach them to other elements (for example: What are you doing tonight? What can you tell me about this course?).

Pienemann (1998) presents a simplified version of the multi-dimensional model. As can be seen from Tables 2.2 and 2.3, learners first acquire words or formulae (stage 1). At the second stage, these words can be used to make clauses. But, at this point, they are all in the canonical order of SVO. Simultaneously, learners acquire grammatical morphology. Some morphemes are free, i.e. possessive pronouns, and some are the bound morphemes (past-ed and -ing on verbs and the generic PL-s on nouns with no agreement with other words in the Noun Phrase). The third stage is marked by a new development in bound morphology – agreement between words in the Noun Phrase. The acquisition of two forms – the possessive –s and the plural –s with numerals, quantifiers take place. Meanwhile, the syntax of the clause develops further in two dimensions. First, words are able to move to the front of the utterance. This enables the acquisition of Adverb fronting, Do fronting and Topicalisation. Second, learners are able to express negation by moving the negator before the verb

while retaining the SVO order (i.e. Neg + V). As learners advance into stage 4, the syntax of the clause develops to include orders other than SVO. This permits the acquisition of questions with verb-subject word order, i.e. Yes/No questions involving auxiliaries such as can, Copula questions, as well as Particle Shift with phrasal verbs. At stage 5, clausal syntax develops so learners can acquire questions with wh-word-auxiliary-subject- verb word order. These are known in this paradigm as auxiliary second (Aux2nd) and do second (Do 2nd), since the auxiliary, whether it is do or another auxiliary, is in second position after the wh- word. The form of negation acquired at this stage, NegDo2nd, also requires the auxiliary in second position, in this case after the subject as well as subject- auxiliary agreement. In fact, this is the stage at which subject- verb agreement develops, enabling acquisition of 3SG-s. At the sixth and final stage, learners are able to cancel the tendency at stage 5 to overgeneralise question word order in indirect questions. This enables them to use statement word order in these subordinate clauses. No morphology is predicted for this stage in ESL development. Tables 2.2 and 2.3 show these stages of learner's acquisition.

Table 2.2: Stages in the Acquisition of ESL Syntax Pienemann (1998:171-181)

Stage	Syntax	Examples
6	Cancel inversion Do 2 <sup>nd</sup> Aux 2nd	I wonder what she is drinking. Why didn't she eat that? Where have you found it?
5	Negative Do 2 <sup>nd</sup> Y/N inversion Copula inversion	He does not like me. Have you seen John? Is she at home? Where is she?
4	Particle shift Wh-fronting Topicalisation Do fronting	Turn the tap off Where you have been? This teacher I like Do he live here?
3	Adverb fronting Neg + verb Neg + SVO SVO?	Today he stay here He don't ask No me live here You live here?
2	SVO Single Words	John eat rice Where is X? How are you? Hello
1	Formulae	

Table 2.3: Stages in the Acquisition of ESL Morphology

Stage	Morphology	Examples
6		
5	3 <sup>rd</sup> person singular-s	She eats good food
4		
3	Possessive-s Plural agreement Generic plural-s Possesive pronoun	Pat's cat Two cats The students go to school My cat
2	Past-ed -ing	She played yesterday Going
1	Single words Formulae	Where is X? How are you? hello

In a similar line of research, a number of studies investigated the learning of irregular past tense versus regular past tense (Dulay and Burt, 1975; Larsen-Freeman, 1975; Hakuta 1974; Andersen, 1978; Dietrich, Klein, and Noyau, 1995). The implication of these studies is that there is an order of acquisition between these two features; and correction of a developmental structure can only be successful if the learner is ready to acquire this particular form;. Readiness refers to the mastery of one stage in preparation of the next stage targeted for learning. However, Ellis defines readiness in terms of mastery of the processing operation needed to acquire those structures in the stage immediately preceding that stage to which the structure targeted for teaching belong (Ellis, 1997a: 63).

Additionally, both exclusive and non-exclusive research was carried out on article acquisition. In morpheme studies (Dulay and Burt, 1973; Brown, 1973; Hakuta, 1976; Huebner, 1979, 1983; Tarone, 1985; Master, 1995), that only looked at articles as a member of morphemes, the body of the research showed that learners learn articles and especially the definite article, in their later stages of language acquisition. However, exclusive studies on articles (Master, 1988; Parish, 1987; Tarone and Parish, 1988; Thomas, 1989; Liu and Gleason, 2002; Chaudron and Parker, 1990;



Young, 1996) found mixed results. Some of these studies based their findings on the assumption that overuse of an item in the learners' production of a feature signals acquisition. Others assumed that accuracy of use indicates learning. Therefore depending on these assumptions, some of the studies on articles concluded that the definite article is learned later than the indefinite and some others concluded that indefinite article is acquired later than the definite.

### 2.12.3 Teachability Hypothesis

Studies demonstrating a developmental pattern in second language acquisition are interesting but they will have limited applicability if they are not based on a theory to explain them. This was one the weaknesses of morpheme studies (Ellis, 1994a: 634). The implication of morpheme studies was that pedagogical intervention basically cannot change the natural acquisition order. The most notable research in the domain of acquisition order was carried out by Manfred Pienemann and his colleagues. Meisel, Cahsen, and Pienemann (1981) proposed a model called Multidimensional Model for acquisition of some syntactic and morphological features (although mostly syntactic features). This model was later developed by Pienemann and his colleagues to include what he called the teachability hypothesis:

The teachability hypothesis predicts that instruction can only promote language acquisition if the interlanguage is close to the point when the structure to be taught is acquired in the natural setting so that sufficient prerequisites are developed (1985:37, cited in Ellis, 1994).

If this hypothesis is correct it has implication for error correction, because we would expect that learners would benefit more from correction of errors of structures that they are cognitively ready to acquire than those errors of structures representing later stages of development. However, research such as Pienemann (1984) has looked at the effects of instruction on acquisition of developmental early versus developmental late structures. But, to the best of the researcher's knowledge, there has not been

research pertaining to the effectiveness of the correction of early versus late developmental features. We do not know whether it is more effective to correct features that we expect students are cognitively ready to acquire. In short, this hypothesis may be able to explain the reasons as to why some features can be corrected more effectively and some others can not. In other words, to what extent this theory is applicable with regards to learners' restructuring of their interlanguage.

In brief, interest in the research in structures started with morphemes studies and later developed to include research on sequence of acquisition.

## 2.13 SUMMARY

This chapter reviewed the literature on some important concepts, categories, and theories underlying error correction. As discussed, there have been different perspectives with regards to definitions, causes, and classification of errors. As discussed also error correction can be viewed from different theoretical and pedagogical angles. The chapter reviewed the cognitive bases of error correction and described three major cognitive processes involved: (1) macro processes, (2) micro processes, and (3) cognitive resources. The review then considered teachers' attitudes toward error correction and the changes they have been through. The review identified some gaps in the literature on error correction. It has not been clear whether, or to what extent, the treatment should be carried out within the interactional context. There is a need for research on immediate correction and delayed correction. The research on explicit and implicit instruction has not clearly identified which is more effective. Research on the manner of correction has not been able to clearly identify which structures are amenable to explicit/implicit or immediate/delayed corrections.

## CHAPTER THREE METHODOLOGY

### 3.1 RESEARCH QUESTIONS

The present study aimed to investigate the following research questions:

RQ1: Is there a difference in learning between the learners that are immediately and explicitly corrected and those who are corrected in delayed explicit manner?

RQ2: Is there a difference between the effects of explicit correction and implicit correction in language learning?

RQ3: Is there a difference in the effects of error correction on the learning of morphological and syntactic features?

RQ4: Is there any difference between the effects of error correction on structures which are acquired early and those which are acquired later (hereafter, termed as developmental early and developmental late structures)?

### 3.2 PILOT STUDIES

Before the actual research began, two main pilot studies were conducted, using two groups of English language learners. The purpose of the pilot studies was multiple: (i) to examine whether it was practicable for the different corrections, stated in the research questions, to take place; (ii) to develop a methodology for correcting the treatment group; and (iii) to find an appropriate way to test the learners' learning of features targeted in error correction episodes. This section traces the evolution of the methodology for correcting the learners and testing them.

#### 3.2.1 Pilot Study One

The main aim of Pilot Study One was to ascertain whether the researcher could manipulate the error correction task that he was to undertake and also whether the

participants and the tasks were appropriately selected for this study. Furthermore, it was aimed to develop an appropriate testing method for the learners' corrections. It consisted of reconstructions and audio recordings of thirty five intermediate learners of English at Jahad Language Centre in Isfahan. Each of these learners was given a 180 word passage entitled 'A Car Driver', after which they were asked to reconstruct the whole story. The errors made by them were corrected in two different ways: immediate and delayed. The manner in which the learners were corrected was explicit, that is, giving the learners metalingual explanation about the wrong forms they used. It is worth mentioning that, at this stage, no systematic analysis of error correction episodes was performed. Learners were sometimes corrected briefly and sometimes with longer explanations.

However, three insights arose regarding the learners' reconstructions. First, errors made by the learners were far too many for the researcher to correct. In every reconstruction, they averaged between 15 and 35 consisting of lexical, morphological, syntactic or other errors. The number of noticeable grammatical errors, which could be perceived and corrected by the researcher, in each reconstruction varied between 15 and 23, and being in exceptional cases as low as 10 and as high as 28. Of course, it should be mentioned that the number of grammar errors could even be higher than 23, but only those that were noticeable to the hearer (the researcher) and were therefore correctible were considered in this study. The second insight was that error correction episodes averaged 10 to 19 for every reconstruction. The number increased as they were corrected for only one word and decreased when correction took several sentences to complete. This inconsistency could not be considered an equal treatment of learners' errors; therefore, a need was felt to make corrective moves more systematic. Finally, it became clear that the task passage was not sufficiently interesting to the subjects. It did not stimulate willingness for the learners to reconstruct it. This fact was found by means of a survey among the group.

The implications of these insights were two-fold. Firstly, not all errors made by the learners could be corrected and consequently the researcher had to determine how many errors and what errors must be corrected. Secondly, in order to reduce the number of errors in reconstructions more proficient participants should be selected .

Therefore, it was decided that two actions should take place. First, instead of intermediate learners, upper-intermediate learners should be selected and, secondly, the task passages must be replaced with a more informative and interesting one with a higher difficulty level. Furthermore, the error correction would be limited to erroneous grammatical structures that could be perceived and corrected by the researcher.

In the next stages of Pilot Study One, the first attempt was made to construct a test incorporating all the items in error correction episodes. Thus, the percentage of error correction episodes related to a particular error in the learners' reconstructions was calculated. Based on that percentage, a number of test item(s) for that particular error were designed. In all cases every effort was made to incorporate the discourse in error correction episodes into the test items. However, in many instances, the researcher had to add some other information to the discourse or even ignore some of the information in the learners' utterances when making the test items, to make them comprehensible and grammatical. However, in the course of testing, it became clear that there were a number of problems with this test. First, it was unclear whether or not the test items could measure the effects of correction on every individual learner, since the test measured the behaviour of the whole group and not of a single learner. Secondly, it was difficult for the learners to try to answer all the items in the test, most of which were not relevant to their own needs. Additionally, having too many items, made it look more like a speed test, where the learner's performance was measured against time pressure, and it turned out that some items were not answered. A possible solution to this problem was to construct tailor-made tests for each learner to cover his/her particular error correction episodes.

An important element affecting construction of the test item for the group was the choice of options. The test item included four options, one of which was the correct form supplied by the researcher to the learner, the other one was the incorrect form which had already been used by the learner prior to being corrected. For the other two wrong options, many more alternative were available. Tailor-made tests, in pilot study One included wrong options regardless of whether these options were lexical,

morphological or syntactic. The following test item was an example of a badly constructed item:

Carson decided to....by driving off the cliffs near his home town.

- a. commit suicide
- b. committed suicide
- c. killing himself
- d. committing suicide

The item was meant to determine whether correction of the error (committed suicide) had been effective or not. Therefore four options were given. Three of these three options (a, b and d) test the morphological forms. But option “c” gives both lexical and morphological choice together. Therefore, this test item does not only assesses the learner’s morphological knowledge needed for using the past tense, but also wrongly assesses the learner with the synonymous form of the word: ‘commit’. Many of these inappropriately constructed items had to be removed.

### 3.2.2 Pilot Study Two

Because of the need to develop further a systematic method for error correction, as well as to devise a testing method, a second pilot study was conducted two months after the first. It consisted of ten upper-intermediate students. They were asked to read the passage: ‘Britain’s Unluckiest Criminals’ and to reconstruct it in their own way. The content of the passage was checked and approved by two native speaker language experts with more than ten years teaching experience in applied linguistics. Each learner made three to ten errors that were corrected in two different ways: immediate explicit and delayed explicit. The number of errors was now much less than it had been in the first pilot study, because the learners were upper-intermediate this time and the task difficulty level was higher (for the task difficulty level, see Section 3.3.4.1).

As mentioned earlier, in pilot study one, errors were sometimes corrected with only a word and sometimes with an explanation. This inconsistency could not be considered an equal treatment of learners' errors, and there was a need to make corrective moves more systematic. Therefore, it was decided that, the corrective move should include both the form of the error as well as a short explanation of the grammar related to the form. A more systematic explicit corrective move can be seen in the following error correction episode:

Learner: He buyed a car to kill himself.

Researcher: 'He bought a car to kill himself', the past tense of 'buy' is 'bought' not 'buy'. It is an irregular form.

In addition, it was decided that another important aspect of error correction in the research be investigated. This aspect was more concerned with the difference between the effects of explicit correction and implicit correction on language learning. Therefore, the most typical type of implicit corrective move (recast) was used. Every time learners made an error which the researcher intended to correct, they would be given the corrected form of the utterance. However, in the course of correcting learners this way, it was noted that the presence of some words and phrases at the beginning of the reformulated utterance gave the correction an explicit tone. The following error correction episode took place between the researcher and the learner in Pilot Study Two:

Learner: He stole many money from his clients and...

Researcher: You mean: "He stole a lot of money from his clients?"

Learner: Yes he stole \$60000.

The learner seemed to have thought of the researcher's response more as a request for clarification or a confirmation check than as a corrective move. Thus, to make the recast sentence more implicit, it was decided not to use the phrase 'you mean' at the beginning of the recast sentence or if there was a need for using it (for instance not to break off the stream of communication), the tone of the whole corrective move would

not indicate a question. Also, during the learners' reconstructions, apart from the necessary corrections made in error correction episodes, the researcher very often interrupted the learner for non-research related issues. This made the interactions sound as if the researcher's voice was all that could be heard. Therefore it was decided that the researcher should decrease verbal involvement and let the learners display their language behaviour more. The researcher would only come in when it was necessary to correct grammatical errors.

Then, based on the error correction episodes that had been recorded together with the reconstructed part of the passage, there was an individualised tailor-made test that was administered to each learner 10-15 days after the reconstruction. Each of these tests included seven to ten items.

In the second pilot study, the number of items did not exceed 13 and did not fall below three, and on average it was around seven. The time interval between the error correction episodes and testing for every learner was so long that one third of the learners lost interest in continuing to participate in the research, so it needed to be reduced. Moreover, it would be very difficult, after the pilot study, and in the actual research situation, to have two week intervals for each participant. The reason was that each of the language institutes had 10 to 15 of their students in the treatment group of 56. The time spent for each school group was usually around two weeks. The first week was spent interviewing the learners for reconstructions and corrections and the second week was spent on test administrations in that particular school. Therefore it would be extremely difficult to meet the learners for reconstruction in one week and see them again two weeks later whilst research was being carried out in another school.

Based on the first and second pilot studies, the following methodological changes were made: (a) the level of the participant's proficiency should be upper-intermediate to decrease the number of errors made by them and therefore to make the errors manageable and noticeable for each correction episode, (b) the comprehension task passages should be more communicative and interesting for the learner to read and to reconstruct; (c) corrective moves needed to be systematised in order to have the



consistency and the reliability required in the tests; (d) the learners would not be interrupted except for corrections, (e)reconstructions, error corrections, and testing should take place on an individual basis without the presence of the peer group; and (f) final tests should be constructed on an individualised basis (tailor-made test) according to the error correction episodes instead of having a single test for all the participants. After the pilot study, the revised versions of the test in the pilot study were given to three language teachers for their comments regarding the appropriacy of the items. Their feedback was taken into consideration for test construction in the main research.

### 3.3 MAIN STUDY

#### 3.3.1 Design

The design of the present study could be described as quasi- experimental because the research aimed to uncover the causal relationship between different treatments and learner's scores by giving a treatment, and administering a post-test on naturally occurring groups (Brown, 1988).The general design of the study involved meaning-based activities, and identification of randomly selected errors during the learners' reconstruction tasks in researcher-learner interactions. It involved randomly selecting of 56 learners for the Treatment Group. Their selection was based on a standard test of grammar. Then, each individual learner was assigned two different passages which are called Task A and Task B passages in this study. The learner was asked to read these two tasks for information on two separate occasions. Subsequently the learner was asked to reconstruct or talk about the content of the task.

This research did not include a control group because of the following reasons:

1. The design of the study was a between-groups design that used comparison groups to investigate research questions. The comparison was made between the groups, with treatment (the independent variable) differing between them. This type of design, referred to as 'comparison group design' is described in Mackey and Gass ( 2005, p. 146).

2. It was not feasible to have a control group in the research because the treatment groups received individualised tailor-made tests which were based on error correction episodes they had received in the treatment. Therefore, it would not be possible to devise tests for a control group (who did not have error correction episodes because there was no basis for devising tests for the control group).

In this study, because of the nature of language processing in spontaneous production, the learners' lack of usage ability in a particular linguistic item could not be predicted by administering a pre-test. Instead, similar to Loewen (2002), each error in the learner's production was considered as an indication of the learner's weakness in that particular feature.

Some randomly selected grammar errors made by the learner in each of the task passages were then corrected by the researcher (these are known as 'Error Correction Episodes' and will be explained in further detail later in Section 3.4.2) according to one of the two treatment categories below:

1. Category One consisted of the following two treatments:

1. Immediate Explicit Treatment
2. Delayed Explicit Treatment

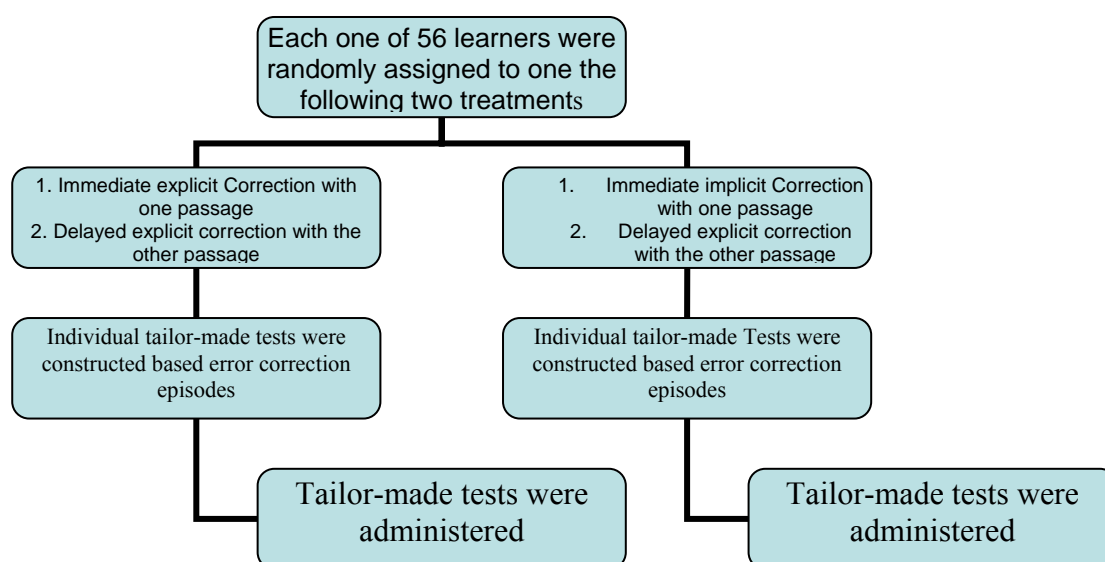
2. Category Two consisted of the following two treatments:

1. Immediate Implicit Treatment
2. Delayed Explicit Treatment

The term 'treatment', hereafter, is used to refer to these three types of feedback provision to the learners in this study. The term 'correction' is used when the aim is to refer to attempts and procedures in dealing with specific features.

It was not feasible to include delayed implicit error correction because once the interaction is over (delayed feedback) error correction necessarily becomes overt. That is, it is not possible to introduce corrections after an event in an implicit manner. Recast, the form of implicit correction used in the present study, is by definition the hearer's response move to the speaker's utterance and as such it fits into the flow of the conversation. But in providing corrections after a conversation is over, it is not possible to use such moves. After a conversation is over the researcher necessarily had to ask the learner to refer back to the reconstruction part in which he/she had previously made an error and because of this overtly drew the learner's attention to their prior utterances. The design of the study is represented in the following diagram:

Fig. 3.1: Research Procedure Flow Chart



Therefore, each learner was corrected twice: once immediately (explicit or implicit) with one task passage and once in delayed fashion (explicit only) with the other task passage. All the interactions between the researcher and the learners were audio recorded. As mentioned earlier, error correction episodes were identified, analyzed and used as the basis for tailor made tests. It should be noted that errors made by learners in their reconstructions were specific to each learner although they were sometimes similar to others (See Section 3.3.4.2 for information on the design and administration of the test items.). Testing for both immediate and delayed corrections took place five to eight days after learners' reconstructions of the task passages.

### 3.3.2 Research Site

The research was conducted at seven private language institutes in Isfahan, Iran. These research sites were chosen because, in general, this research had initially intended to investigate error correction among TEFL learners (that is, those who learn English as a foreign language in an environment where English is not spoken as a first language). These particular schools were also chosen because they are established languages schools in the area. Another reason for choosing these particular schools was because not many other schools held upper-intermediate classes at the time of the research. Languages schools are usually quiet after summer holidays and especially during the school seasons.

### 3.3.3 Participants

#### 3.3.3.1 Participants Selection

A total of 56 learners (from among a population of 300 students) from seven language institutes with 12 upper-intermediate classes participated in this study. The reason for choosing these classes was because the numbers of learners who could talk were naturally higher in such classes. Permission to conduct the research was sought and obtained from the schools' principals as well as their teachers and their upper-intermediate class students (See Appendix A for the Participant Information Sheet and the Consent forms.).

#### 3.3.3.2 Demographic Information

Participants, who were named learners in the research, averaged about 22 years of age with some as young as 17 and others as old as 33. This study originally intended to cover the age between 18 and 30. The reason this age band was selected was that Iranian pre-university students usually complete their high school education around the age of 18. Before this age, English is taught as one of many school subjects during three years of 'guidance' school and four years of high school, with only a few hours a week during the educational year. Moreover the focus of the language learning in guidance and high schools is not so much to develop spoken ability, as to focus on the language as a kind of 'study for the exam subject' making it hardly fruitful in terms of

language learning. On the contrary, the age band considered in this study was more appropriate in the sense that students' needs, willingness, and motivation (whether integrative or instrumental) made more serious language learners of them. Forty percent of students in these classes planned or hoped to continue their education at universities abroad, and for this reason, they were committed to pursue their language learning very seriously and 90% of the learners believed English was important for their higher education in Iran. Moreover, above 30% of them wanted to learn English to be able to work with computers and to seek good jobs in the market. Nearly 17% of the participants were post-graduate students, 69% under-graduates, and 13% high school graduates.

The female students accounted for 66% of the students and males 34%. It seemed representative of the population considering the fact that the percentage of girls enrolling at language schools has drastically increased in recent years (For General Information Sheet, See Appendix B.).

To determine the general proficiency band in the study, a standard test of grammar was used. This 40 item test was selected from Section 2 (Structure and Written Expression) of the TOEFL test. Those scoring between 50 and 70 were called on to participate in the research. The reason for choosing this test was that, according to the information provided by TOEFL the reliability is relatively high (0.88).

### 3.3.4 Materials

#### 3.3.4.1 Task Materials

In the current research, for the purpose of eliciting errors, two passages were designed. They both had general topics; namely: 'Diamonds Are forever' and 'Britain's Unluckiest Criminal' (See Appendix C). They were labelled Task A and Task B respectively. They were chosen from a series of a second language teaching textbook called: 'Cutting Edge' by Carr, Cunningham, and Moor (2001) used as part of ESL reading development program for learners of English from beginning to advanced levels. 'Diamonds Are forever' was more a factual type of passage containing information on figures, dates, and names of some relatively known

geographical places. 'Britain's Unluckiest Criminal' was a narrative about the course of events in a man's life. Each one of the two comprehension passages contained 240 frequently occurring words, 20% of which were function words and the rest consisting of lexical items and proper nouns. Overall, 50% of sentences in both passages were complex. The longest sentence in both passages contained as many as 30 words and the shortest one around 8. These two passages were structurally and lexically of the same difficulty level. The difficulty levels of these passages were calculated by using the SMOG Readability Formula and the Smog Conversion Table. This was done by: (1) counting three sets of ten sentences (a total of 30 sentences), (2) counting all words of three or more syllables, (3) taking this number, and determine the nearest perfect square root, (4) adding 3 to this square root. The final number is the readability level (Richardson et al., 2003: 456).

The level of comprehension difficulty was indicated to be 7 for Task A, and 8 for Task B. By looking at the Grade Level Scale (See Appendix D for the Smog Conversion Table), it could be seen that these two figures indicated the intermediate levels of readability. The levels were appropriate for the participants for a number of reasons. Firstly, the participants were upper-intermediate learners whose reading comprehension and speaking ability was not high enough to be able to understand and to talk easily about the passages containing higher levels of difficulty with relative ease. So in fact the passage needed to be easier than the levels at which the learners were currently working. Secondly, they were learners at private schools and not the universities. Therefore, they had not been exposed to passages with higher degrees of difficulty. Private institutes do not usually use reading comprehension passages for the purpose of retelling or reconstruction. They use them mainly for enhancing the reading comprehension abilities of learners. So, naturally they must conform to the level of students. However, in the case of the present participants, the difficulty level of the passages needed to be relatively below the actual level of the learners to make it easy for them to concentrate more on the content.

For every passage text, there were seven content questions that acted as the organisers for their reconstruction of the text (See Appendix E). More precisely, to enable the learners to have better ideas of what to talk about and how to organise the main points

in the text, a separate seven-item question sheet for each task was given to them prior to their reading the texts. The same questions would be used in the tasks in case, for any reasons, the learner showed reluctance in reconstructing the text. Therefore these questions helped the researcher elicit data from the learner. All the questions were interrogatives, requiring the participants to explain and possibly elaborate on the content of the text when reconstructing. However, the seventh question in both question sheets was more general and motivated the learner to talk about the text themes of the texts more generally.

The participants were instructed as follows:

‘This passage is about an unlucky man/ or diamonds. Would you please read this passage and reconstruct it for me? Try to talk about it the way you like. There is also a question sheet to help you think about the points that you want to talk about.’

#### 3.3.4.2 Tests

Individualized tailor-made tests (See Appendix F.) were constructed based on the errors made by the learners. Every learner had two tailor-made tests, each consisting of a number of test items. The number ranged from 3 to 13 depending on the errors made by the learners in their task reconstructions and also on the researcher’s ability to identify the relevant errors. All test items were multiple questions that included a correct answer and three distractors. The main reasons for choosing multiple item tests were that multiple item tests have the advantages of ease, objectivity and reliability of scoring. Moreover, when the learners were corrected on their errors and were provided with right models for their errors, it was more logical for the researcher to test them through forced choice items (like multiple items) that require the test candidates to choose options which are provided to the candidate (Davies et al., 1999). However, the tailor-made tests had a weakness arising from different weightings on the test items. This situation arose because each item in each tailor-made test was based on one error correction episodes the learner had. So, if a learner had three error correction episodes in the reconstruction task, that learner had three items in his or her tailor-made test. If a learner had five error correction episodes in the reconstruction task, that learner had five items in his or her tailor-made test. A

possibility would have been to increase the number of test items in the tailor-made test (for example, to provide two or more items on each type of error and in this way have the tests contain the same number of items). However, this was not practical. Since the tests were individualised and the items had to be prepared very soon after the error correction sessions there would not have been enough time to produce a large number of tests items. For establishing the reliability and validity of the test items, see Section 3.4.3.2.

The learners were tested by a written multiple choice test for their knowledge of the grammar forms on which they had made errors and been corrected. They were required to choose the correct response from a set of four options. This type of test is to an extent a limitation of the study because it only assesses the learner's ability to recognise a correct written response. It does not assess the ability to spontaneously produce a correct form and it was the learner's problems in producing a correct form spontaneously in oral interaction that the learner was being tested on. It is possible that learners were able to reflect more on the language forms targeted in the tests than they would on their spontaneous spoken production because the tests were in written form and tested recall rather than production. However, the same test type; that is, written multiple choice items was used for all treatment groups and therefore despite this limitation does enable us to compare the differences between the treatment groups. In other words, the test was limited in the same way for all participants in the study.

Each tailor-made test started with written instructions (directions). These instructions were as follows:

Directions: Questions 1-... are incomplete sentences. Beneath each sentence you will see four words or phrases, marked (A), (B), (C), (D). Choose one word or phrase that best completes the sentence. Then, on your Answer Sheet, fill in the space that corresponds to the letter of the answer you have chosen.

The researcher allocated 45 seconds for each test item.



## Construction of Test Items

As mentioned previously, every learner was assigned two comprehension texts: Task A and Task B. Based on the error correction episodes in these two tasks, every learner completed two tailor-made tests, each consisting of a number of test items. Because the test items were based on the error correction episodes and errors varied significantly, the test items needed to be constructed in accordance with the categories to which errors belonged.

Generally, every error made by the learners in their error correction belonged to one of the following categories:

1. phonological errors
2. lexico- semantic errors
3. syntactic errors
4. morphological errors.

Morphological errors and syntactic errors included a wide range of error types. The following examples of test items were constructed on the basis of such error types.

**Table 3.1: Irregular Past Tenses**

Episode: 18B8 (Immed. / Imp.)

Error Correction Episode	Test Item
L: Mostly between 1885 and 1907, one Russian jeweler <u>has made</u> several ( ) R: Easter eggs. Between 1885 and 1917,he <u>made</u> a number of Easter eggs for - L: For the Tsars and their families...	Between 1885 and 1917, a Russian jeweler... a number of Easter eggs for the Tsars and their families. (a) has made (b) makes (c) made (d) making

Options used for such items needed to be of the same class of grammatical features to make sure that the test item would measure one particular aspect of the error corrected by the researcher. For example errors in the use of tenses can often be confused with errors in voice which is represented by active/passive forms of verbs. However, it was also important for the items to include developmental features as distractors, although such features could often be regarded as passive or active. Therefore, the distractors used in these items could include active or passive forms. Further it was decided that other distractors be chosen from the tenses that are generally within the active production of the learners of this stage.

**Table 3.2: Prepositions**

Episode: 36A4 (Delayed/Explicit)

Error Correction Episode	Test Item
<p>L: When he went to casino for gambling, the people became suspicious <u>at</u> him with his money and a lot of cash he had.</p> <p>R: You must realize that when you use 'to become suspicious', you must use the preposition '<u>of</u>' instead of 'at'. So people became suspicious of him with a lot of cash he had with him, then you said....</p>	<p>When Carson went to the casino, people became suspicious....him.</p> <p>(a) to</p> <p>(b) ...</p> <p>(c) at</p> <p>(d) of</p>

In constructing the test items for prepositions, distractors were selected from among these three classes of errors, depending on the nature of the words surrounding the possible source of error. In most cases a zero option was provided to find out whether the learner thought of the omission of error as necessary. Also, the error which was made by the learner in his/her reconstructions was selected as one of the distractors. Two other distractors were chosen from among the errors of those that other learners had made in similar situations.

Table 3.3: Articles

Episode: 3A1 (Immediate Explicit)

Error Correction Episode	Test Item
<p>L: This is about Ø local businessman in (the) England, in (the) one of the town of England. He is really an unlucky businessman.</p> <p>R: Excuse me, this is story is about a local businessman because you should use an indefinite article before a noun or a modifier.</p> <p>L: It....is about <u>a</u> local businessman in one of the town of England. He is really....</p>	<p>This story is about....local businessman called Edward Carson.</p> <p>(a) ...</p> <p>(b) the</p> <p>(c) a</p> <p>(d) an</p>

Every test item that was constructed to measure the correction of article errors, generally consisted of the same four options throughout the study. These four options, as indicated in Table 3.4 are: ‘a’ ‘the’, ‘an’, and zero.

The most problematic area in constructing the test items for article features was the options ‘a’ and ‘the’. In most cases it was difficult for the researcher to conclude whether the learner had used the right choice between a definite and an indefinite article in his or her reconstructions or whether the researcher had made the right decision to correct the learner on the suspected error.

Table 3.4 Word Order

Episode: 51A2 (Delayed Explicit.)

Error Correction Episode	Test Items
<p>L: Then, he thought still gambling is the answer for his problems, so he....</p> <p>R: So, you said he thought still gambling is....is what?</p> <p>L: The answer to his problems.</p> <p>R: The answer to his problem. Ok, but you know you shouldn't say: He thought still gambling, he still thought gambling was the answer to his problem. Still should come before the main verb. Ok?</p> <p>L: Ok, so he went to a horse....</p>	<p>He...that gambling was an answer to his problems. So he went to Doncaster horse races.</p> <p>still thought</p> <p>thought still</p> <p>both</p> <p>none of these</p>

The choice of test items depended on whether some of the errors involved two words or a whole sentence. For example, the following error in word order involved the whole sentence:

The Russian jeweller between 1885 and 1917 decorated some Easter eggs with diamonds.

Nevertheless, correction of adverb misplacement took relatively longer, especially in explicit corrections, because it involved manipulating the whole sentence. Besides, in many instances, it involved more than two or three options. So the researcher had to give the learner more time to answer the test.

**Table 3.5: Errors in the Use of Active and Passive Voice**

Episode: 22A1 (Immediate Explicit)

Error Correction Episode	Test Item
<p>L: Yes, and he put I think \$10000 on horse <u>which called</u> Lucky Seven I think.</p> <p>R: <u>Which was called</u> Lucky Seven. You know you need a passive voice here: which was called.</p> <p>L: Yeah, I am, which was called this, but this horse was not successful in this race ...</p>	<p>He put \$10000 on a horse...the Lucky Seven.</p> <p>(a) calls</p> <p>(b) which called</p> <p>(c) calling</p> <p>(d) which was called</p>

The reason for choosing ‘calls’ as an option was to see if the learner could distinguish the difference between active and passive voices. Also, the reason for choosing ‘calling’ as an option was the possibility that the learner might be in the stage where he might not yet have perceived voice.

**Table 3.6: Third Person Singular ‘s’**

Episode: 40B6 (Delayed/Explicit)

Test Item	Error Correction Episode
<p>L: They used it in the crown and now it <u>belong</u> to (the) Queen(s) of England.</p> <p>R: It belongs to the Queen of England, third person singular, OK?</p>	<p>Now, this diamond ...to the Queen of England.</p> <p>(a) belong</p> <p>(b) belonged</p> <p>(c) belonging</p> <p>(d) belongs</p>

Apart from option one which was the learner's error and option four that was the target feature, the other two distractors were selected because one would test the learner's misunderstanding of the tense of the sentence by inviting them to think that the whole text is about the past events and the other one (belonging) would assume that the learner might be in a stage where he/she has not developed clear concepts of tense and the required suffix for the third person singular's'.

There were three sub-categories for testing plural-s items:

1. Omission of plural morpheme.
2. Redundant use of plural morphemes
3. Wrong use of plural morphemes

Table 3.7: Wrong Use of the Plural Morpheme

Episode: 42A2 (Immediate Explicit)

Error Correction Episode	Test Item
<p>L: He made a series of bad investments and lost all his <u>monies</u>.</p> <p>R: So he made a series of bad investment and lost all his <u>money</u>. You shouldn't use monies. Why? Because money is not pluralized. Ok? Money is not countable.</p> <p>L: So he just stole the monies from one of his customers and escaped to France.</p> <p>R: So he stole money, not monies, from one of his customers and...</p>	<p>He lost all his...</p> <p>a) monies</p> <p>b) the money</p> <p>c) money</p> <p>d) all of these</p>

This was a typical type of error for which selection of options as distractors in the items posed difficulty. Since there were not many options available apart from the right option (money) and the error (monies), there were no distractors which could be selected for this particular item. Therefore, two general distractors, 'both' and 'none' were often used in situations like this. In some occasions, the indefinite article 'the' was used before the noun (money) since the wrong use of article after a determiner

(his) and before a noun (money) would exhibit overgeneralization of morphological features.

Table 3.8: Wrong Use of Parts of Speech

Episode: 56A5 (Immediate/Implicit)

Error Correction Episode	Test Item
<p>L: At the trial, the judge gave (crimed) him one month in prison because of his <u>criminal</u></p> <p>R: The judge gave him one month in prison because of <u>his crime</u>.</p> <p>L: ...because of his crime.</p>	<p>The judge gave him one month in prison because of his ...</p> <p>a) crime</p> <p>b) criminal</p> <p>c) both</p> <p>d) none of these</p>

In choosing options for this type of test item, careful consideration was given to other aspects. For example, in selecting the options, it was important not to place items which tested the learner's knowledge of parts of speech but which were not common or familiar to the learner. In the above test item, 'Crime' and 'Criminal' (as a noun and an adjective respectively) were more likely to have been heard by the learner at their stage of language learning than were the other parts of speech as options. Therefore, the limited choice of options sometimes made the researcher consider placing 'both' and 'none of the above' options as distractors. However, in most cases, it was decided to use these two options to test whether or not the learner thinks that both options (the answer or the distractor) or none of the options are right.

### 3.3.5 Procedures

#### 3.3.5.1 Task Procedures

The recordings of sessions were made from the very beginning, so that the instructions given to the learners, the learners' talk and the researcher's corrections would be recorded for further analysis and testing. For this purpose, a wireless cassette recorder with an in-built microphone was used. As soon as interactions

between the learner and the researcher began, the cassette recorder was switched on by the researcher to record the reconstructions and error correction episodes.

### Immediate Explicit Correction

As soon as learners made an error, the teacher immediately stepped in to correct them by providing the learners with the correct form as well as metalinguistic explanation of the rule related to this form as in this example:

L: Some diamonds *used to* decoration.

R: Please say, ‘Diamonds *are used for* decoration.’ Don’t say, ‘used to’.

You must use a passive form of the present simple tense here.

Learner: OK ...

### Immediate Implicit Correction

Implicit correction refers to the process of providing the learner with indirect forms of feedback. After an error was made by the learners, again the teacher immediately stepped in to correct them implicitly. The implicit feedback provided to the learner in the present research was in the form of recast-the correct reformulation of the learners’ erroneous utterances. The following error correction episode is an example of immediate implicit correction:

Learner: Carson was a man and a local businessman and every body thought he was honest man, but suddenly he *invest* and he fell in difficulty.

R: He *invested* his money in a business.

Learner: Yes, he invested his money in a business.

R: What kind of business was it?

Learner: I don’t know...

## Delayed Explicit Correction

When the learners made an error, the researcher waited till the learners' attempt to reconstruct the text had finished. In fact, the teacher avoided correcting the error while the learners were talking about the content of the passage. He only made rough notes of the errors made by the learners. The correction was carried out explicitly using explicit corrective moves; that is, providing the learner with the correct form together with a metalingual explanation of the rule for the correct form. The error correction in the following episode took place 15 minutes after the error was made.

R: Thank you very much for your talk about the passage. If you allow me, I would like to draw your attention to some of the mistakes you made during our conversation. Is it OK?

L: Yea, ok.

R: For instance you said, 'He *feel* depressed'.

L: Yes.

R: You should say, 'He *feels* depressed.' OK? We need a third person singular's' here.

L: Right.

The study also investigated the element of timing in error correction. Timing, according to Ellis et al., 1999, concerns the point at which the researcher and the learner bring the erroneous form into focus after the production of the trigger (i.e. the error). In this study, corrective feedback was supplied either immediately after the error or late after the learner had finished reconstructing the passage. It usually took some time, between 10 to 20 minutes, from the time when the error occurred, depending on the duration of the reconstructions.

### 3.3.5.2 Testing

Individualised tailor-made test items, based on the corrected errors in the learners' reconstructions of the text passages, were constructed and administered to the learners



individually five to eight days after the time of reconstruction (see Section 3.3.4.2 for construction of tailor-made tests). For the administration of the tests, learners were withdrawn individually to a quiet room where the researcher administered the tailor-made tests (one at a time) to them. They were allowed sufficient time to answer the questions.

### 3.4 ANALYSIS

#### 3.4.1 Tailor-made Tests

Overall, there were 112 tailor-made tests, for both tasks A and B, administered to the learners. They included a total of 764 test items measuring the same number of error correction episodes. On average, every tailor-made test contained 6.8 test items. Of these 112 tailor-made tests, 29 (25.9%) measured the items pertaining to the immediate explicit treatment, 28 (24.6%) measured the items pertaining to the immediate implicit treatment, and 55(49.1%) measured the items pertaining to delayed explicit treatments.

Fifty seven (50.9%) of the tailor-made tests were coded as ‘immediate correction tailor-made tests’ and 55 (49.1%) as ‘delayed correction tailor-made tests’ (delayed and immediate correction tailor-made tests will hereafter be referred to as ‘immediate’ or ‘delayed’ corrections). Normally, the number of immediate and delayed corrections should have been equal, but one of the learners received immediate corrections twice: once immediately and explicitly and once immediate and implicitly. Twenty eight (25%) of the tailor-made tests were coded as ‘implicit correction tailor-made tests’ and 84 of the tailor-made tests were coded as ‘explicit correction tailor-made tests’ (explicit and implicit correction tailor-made tests hereafter referred to as ‘explicit’ or ‘implicit’ corrections). The reason for the higher number of explicit corrections tests was that all learners received delayed explicit treatment (refer to Appendix K).

### 3.4.2 Identification of Error Correction Episodes

The error correction episodes constituted the central focus of this research. Based on these episodes, items in the tailor made tests were constructed and again based on these episodes scores obtained by the tests were analysed. Therefore it was crucial to clearly define “error correction episodes” to be able to identify them in the learners’ reconstructions. Similar to Ellis et al., 2001, error correction episode is defined as an interlude between the learner and the researcher in an interaction. It is triggered by an error made by the learner and corrected by the researcher. The error correction ends when the interaction returns to the topic of discussion. In addition to the criteria mentioned in this definition, the following two points were considered in identification of the episodes:

1. Error correction episodes included only researcher-corrected errors and not self-corrections.
2. Each error correction episode included only one error, addressed by the researcher.

### 3.4.3 Detailed Transcription of Error Correction Episodes

After the reconstruction and error correction episodes, the recorded sessions were copied onto a computer program that enabled the researcher to listen repeatedly to the recordings. Detailed transcriptions of the error correction episodes took place at this time. A relatively simple notational system (see Appendix G) was utilized. The reason for keeping the notational system as simple as possible was that, the focus of the study was not so much on phonological and supra-segmental aspects of the utterances. Nevertheless, length of pauses, interruptions, and a few other notational symbols were utilized in the transcriptions to provide a clearer picture of the learners’ utterances(see Appendix H).

### 3.4.4 Reliability

#### 3.4.4.1 Reliability of Identification of Error Correction Episodes

To determine reliability in the identification of error correction episodes, a sample of 23% of the recorded tasks was evaluated by a second rater. The second rater was asked to check whether:

1. The error was corrected by the researcher and not by the learners themselves
2. An error had actually been committed
3. The error had actually been corrected
4. The episode ended with a topic change
5. Only one error was corrected in each episode.

The absence of any one of the above criteria in the learners' utterances would disqualify them from being considered as error correction episodes. The resulting agreement rate was 88.3%.

#### 3.4.4.2 Reliability and Validity of the Tailor-made Tests

Reliability is the degree to which a test is consistent over different test administrations. It is often established in three different ways: a) the administration of the parallel forms to the same participants, b) test-retest method and c) the measurement of the internal consistency of the test (i.e. by split half method).

In the present study, it was not possible to establish reliability using test-retest method, because it did not seem logical to trial the items of a tailor-made test (belonging to one person) on other individuals or a different sample, since every participant had his/her own specific items arising from his/her own errors.

Therefore, a different approach to the one mentioned above needed to be taken in order to establish the reliability of the tailor-made tests. All potential threats to the

reliability of the tests were addressed. Following Loewen (2002), Brown's (1996) checklist of potential sources of error variance or measurement error was used. The checklist points to different potential sources of errors such as environment, administration procedures, examinees, scoring procedures, and test items. Ways of reducing error variance due to these factors were considered:

(a) Environmental variance: It was difficult to allocate all the learners to a specific and pre-arranged place where they could read and reconstruct the texts, because several schools were involved in the study and the participants in each school preferred to be interviewed and tested in their own school. However, the researcher was given a room by each school to carry out the interviews. The rooms had standard facilities like heating and lighting, as well as being quiet. The learners were interviewed and tested individually in the rooms.

(b) Administration Procedures: The instructions (see 3.3.4.2) for the test items were standardized and written at the beginning of each tailor-made test. However, the learners did not spend much time reading the instructions since they seemed to know what was expected of them in multiple answer tests.

(c) Examinees: Although factors relating to health, fatigue, emotion are beyond the control of the test giver (Brown, 1996), it was decided that learners would only be interviewed and tested if they felt sufficiently confident. As mentioned previously, they could choose any day between five to eight days (three days) after the reconstructions to take the final test. They were usually told that if they were tired or unwell they could postpone the test to the next day. In order to control the influence of testwiseness (Davies, Brown, Elder, Hill, Lumely, and McNamara, 1999) with multiple item tests, the directions were made as explicit as possible. The reliability of the scoring procedures will be discussed in the Analysis Section.

(d) Test items: Each learner had his/her own test items because each one of them had their own error correction episodes. Therefore the best way to find whether an item was suitable or not, was to find out whether the item clearly measured what it was supposed to measure (item validity). The present research required ascertaining to

what extent the test items measured the impact of the error corrections. Since the test items were based on specific errors made by the learners, and these errors were not identified in advance, it was difficult to establish the validity of the items. The best way to establish validity was to assess whether the error correction episodes were truly reflected in the corresponding items. Therefore, in order to determine the validity of the tailor made tests, a panel of 3 English language teachers was asked to help the researcher. They listened to the recorded episodes and read the transcriptions and then compared the error correction episodes with the test items for 38% of the learners. Each tailor-made test included three to nine test items. Each member of the panel had to decide whether each of these items were suitably constructed for their relevant error correction episode. The purpose of such procedures was to remove any potential flaws from the tailor-made tests. That is, malfunctioning items were either modified or removed from the whole tests. Malfunctioning or non-functioning items in a tailor-made test were considered to be the result of one of the two following factors: a) error correction episodes did not target the error adequately, or b) the corresponding test item was not constructed adequately. In both cases the error correction episode and its corresponding test items would be considered invalid and discarded in the analysis. However, the raters agreed on 88% of cases that the items do measure the linguistic items focused in error correction episodes (Appendix H).

### 3.4.5 Characteristics of Error Correction Episodes

The error correction episodes were coded for the following characteristics:

1. Manner: Each error correction episode was coded as either an explicit or implicit type of correction. For definitions of explicit and implicit corrections, see Section 3.3.5.1.
2. Timing: Each error correction episode was coded as either immediate or delayed. For immediate and delayed timing, see the Section 3.3.5.1.
3. Linguistic Focus: Each error correction episode addressed either a syntactic or morphological error. The frequency occurrence of all the errors in the error

correction episodes was noted and the errors were classified into categories (see Appendix K for Frequency Table).

To investigate Research Question Three, certain morphological and syntactic features were selected from the Frequency Table. They were selected on the basis of the following two criteria:

1. Sufficient frequency of errors for the purpose of analysis
2. The ability to clearly classify the features as either morphological or syntactic

Table 3.10 shows the grammatical categories that constitute syntactic and morphological forms and which were selected for the purpose of analysis:

**Table 3.9: Morphological and Syntactic Features**

Morphological Features	Syntactic Structures
<ol style="list-style-type: none"> <li>1. Definite Article (the)</li> <li>2. Indefinite Article (a, an)</li> <li>3. Regular Past Tense(ed)</li> <li>4. Irregular Past Tense</li> <li>5. Plural 'S'</li> <li>6. Third Person Singular 'S'</li> </ol>	<ol style="list-style-type: none"> <li>1. Relative Pronouns</li> <li>2. Use of Active/ Passive</li> <li>3. Wrong Word Order</li> </ol>

Developmental aspects: The target features in the error correction episodes were coded as either early developmental or late developmental. However, due to the absence of sufficient research on the acquisition order, it was difficult to distinguish between these two for many features in the data. Therefore, it was decided that a number of relatively clear features from both types be selected, based on previous empirical studies (Pienemann and Johnston, 1986, Krashen 1977, Larsen-Freeman 1976, Dulay and Burt 1974, 1973). These features are shown in the following table:

Table 3.10: Developmental Early and Late Features

Early Developmental Features	Late Developmental Features
<ol style="list-style-type: none"> <li>1. Definite Article(the)</li> <li>2. Irregular Past Tense</li> <li>3. Plural ‘S’</li> </ol>	<ol style="list-style-type: none"> <li>1. Indefinite Article (a, an)</li> <li>2. Regular Past Tense</li> <li>3. Relative Clauses</li> <li>4. Active &amp; Passive Voice</li> <li>5. Third Person Singular ‘S’</li> </ol>

As can be seen from Table 3.11, there are a number of paired features, namely definite/indefinite articles and regular/irregular past tense. This study also compared the effect of correction on these two different pairs of morphological features.

### 3.4.6 Test Scores

Test scores were coded as follows:

#### A. Timing and type of error correction episodes:

1. Immediate/Implicit
2. Immediate/Explicit
3. Delayed/Explicit

#### B. Characteristics of the target features:

1. The morphological features in Table 3.10
- 2 The syntactic features in Table 3.10
- 3 The early developmental features in Table 3.11
- 4 The late developmental features in Table 3.11

#### 3.4.6.1 Scoring Procedures for Syntactical vs. Morphological Features

The final scores on morphological and syntactic test items given to each learner would be a fraction of the correctly answered morphological and syntactic test items over the total number of the morphological or syntactic test items, which were included in Table 3.10 and were present in their tailor-made tests. This fraction was then multiplied by 100 to obtain the percentage of the learner's score. Since each learner had two tailor-made tests (and therefore, could have two scores on morphological items and two scores on syntactic items), the average mean of the two scores was considered to be his/her score on morphological or syntactic items.

#### 3.4.6.2 Scoring Procedures for Early and Late Developmental Features

The learner's final scores on the early developmental and late developmental features would be a fraction of the correctly answered early and late developmental test items over the total number of the early and late developmental test items, which were included in Table 3.11 and were present in their tailor-made tests. This fraction was then multiplied by 100 to obtain the percentage of the learner's score. Since each learner had two tailor-made tests and therefore, could have two scores on developmental early items and two scores on developmental late items, the average mean of the two scores was considered to be his/her score on the early developmental or late developmental scores.



### 3.4.7 Statistical Analysis

#### 3.4.7.1 Variables for Research Questions One and Two

There were two variables: The dependent variable was the learners' scores on the tailor-made tests and the independent variable was the type of correction. The independent variable included various levels:

1. The three main treatment levels which were relevant to the first two research questions were: immediate explicit treatment level, immediate implicit treatment level, and delayed explicit treatment level.
2. The 4 correction levels which were relevant to Research Questions One and Two were: immediate correction level, delayed correction level, explicit correction level, and implicit correction level.

#### 3.4.7.2 Variables for Research Questions Three and Four

The analysis for the third and fourth research questions were post-hoc. Each learner's tailor-made tests were checked to see if they included any of the test –items pertaining to the linguistic focus (morphological and syntactic features) and the developmental aspects (developmentally early and developmentally late features), mentioned in Tables 3.10 and 3.11. There were two variables: The dependent variable was the learners' scores on the test items in the tailor-made tests and the independent variable was the focus of correction. The independent variable included the following levels:

1. Morphological/syntactic levels
2. Developmental early/late levels

#### 3.4.7.3 Descriptive Statistics

For all groups descriptive statistics were calculated. These included mean, median, low and high range, and standard deviations.

#### 3.4.7.4 Tests for Research Questions One and Two

In order to answer Research Questions One and Two, the following tests were performed:

1. A non-parametric two-related-samples test; namely, the Wilcoxon Signed Rank, Test, to compare the immediate correction and delayed correction components of the treatment groups
2. A parametric test; namely, paired-sample t-test, to compare the scores for the explicit correction and implicit correction components of the three treatment groups.

#### 3.4.7.5 Tests for Research Question Three

In order to answer RQ Three, the following three tests were carried out:

1. A non-parametric, two related sample test; namely, the Wilcoxon Signed Rank Test, to compare the learners' scores on morphological and syntactic items in their tailor-made tests.
- 2 . A 2×3 ANOVA to show the interaction effect between the type of treatment and the scores gained by the type of correction on morphological or syntactic features.
3. A post-hoc analysis(Scheffe).

#### 3.4.7.6 Tests for Research Question Four

In order to answer the fourth RQ, the following four tests were carried out:

1. A non-parametric, two- related- sample test; namely, Wilcoxon Signed Rank Test, to compare developmentally early and late features.
2. A 2×3 ANOVA to show which one of the treatments influenced test scores for early developmental or late developmental features.
3. A t-test to compare the scores for irregular past tense and regular past tense.
4. A T-Test to compare definite and indefinite articles.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### RESEARCH QUESTION ONE

#### 4.1 INTRODUCTION

This chapter addresses research question one (Is there a difference in learning between the learners who are immediately corrected and those who are corrected later?). The participants in this study completed two reconstruction tasks during which they received either immediate correction (stopping the learners on spot and correcting their errors) or delayed correction (correcting the learners' errors after they completed their reconstruction task). It must be noted that the data compared for research question one were the scores of immediate explicit and delayed explicit corrections. The scores of immediate implicit corrections were not considered in this section. Results of Research Questions One are presented in Sections 4.2 and 4.3 respectively. Section 4.2 presents the results of the scores on the tailor-made tests pertaining to the immediate and delayed corrections. Section 4.3 presents the discussion of the results.

#### 4.2 RESULTS OF IMMEDIATE AND DELAYED CORRECTIONS

##### 4.2.1 Scores on Tailor-made Tests

The table in Appendix M1 shows the frequency of the scores (in percentage) on the tailor-made tests related to the immediate and the delayed corrections. The scores (in percentage) range between 33 and 100 for the immediate group and they range between 40 and 100 for the delayed group. Except for a number of scores, the distributions of scores in both types of corrections are more or less similar. In particular, the frequency of scores for immediate and delayed corrections ranges from 1 to 6, and variations between the groups fluctuate within a similar range. However, the frequency of totally correct scores in the immediate and delayed groups is 7 and 17 respectively.

#### 4.2.2 Normality of Distributions

In a normal distribution, 68% of the sample scores are bunched in the middle of the curve, on two sides of the mean line, and only 28% along the tails of the curve. The line on each graph is the same and represents the bell curve of normal distribution.

Figures 4.1 and 4.2 show the distribution of the immediate and delayed scores in relation to a normal distribution. The shape of the graph 4.1 and 4.2 shows that the distribution of scores in the immediate corrections is not normal, because most of the scores are bunched in the right side of the curve. Moreover, the Kolmogorov-Smirnov statistic, that tests the hypothesis that the data are normally distributed, reveals a low significance value ( $p = 0.036$ ,  $p < 0.05$ ) for both the immediate and the delayed groups. This indicates that the distribution of the data differs significantly from a normal distribution. Since the frequency of scores for the immediate and the delayed corrections does not follow a normal distribution, parametric tests for comparing means are not performed. Instead, non-parametric tests, which do not require normally distributed data, are used (Norusis, 1997, 2004).

Fig. 4.1: Frequency Distribution of Scores in Immediate Corrections

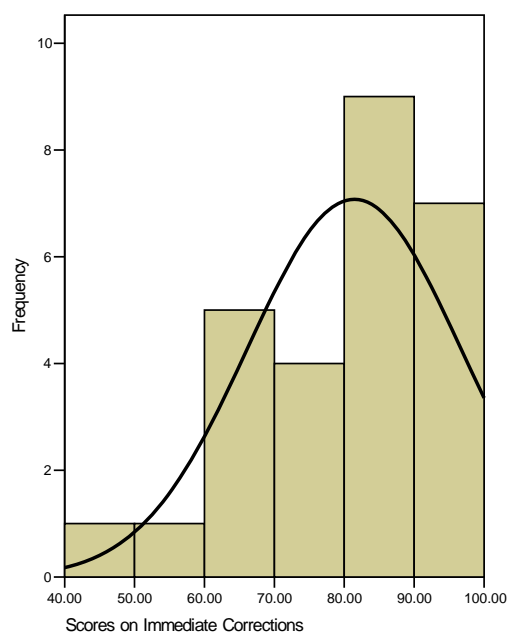
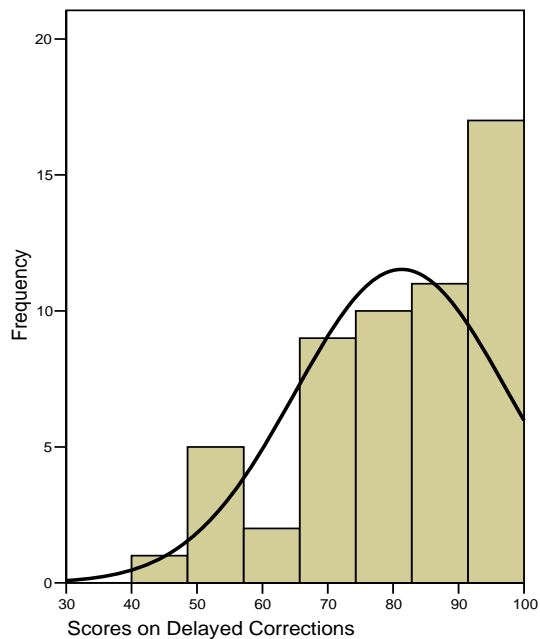


Fig. 4.2: Frequency Distribution of Scores in Delayed Corrections



### 4.2.3 Descriptive Statistics

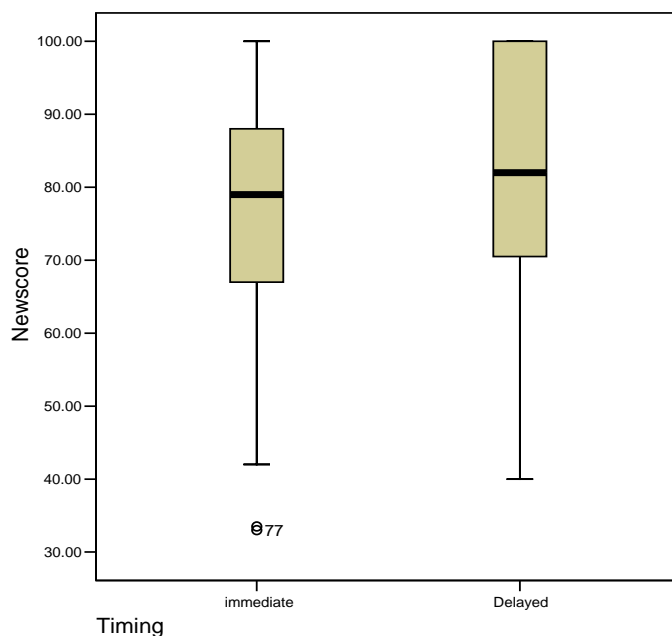
Table 4.1 displays the group statistics for the immediate and the delayed corrections. The means for the immediate corrections and the delayed corrections are 76.82 and 80.59 respectively. The standard deviation is 17.26 for the immediate correction and 16.48 for the delayed corrections.

Table 4.1: Group Statistics for the Scores of Immediate and Delayed Corrections

Corrections	N (Number of the learners)	Mean  Percent. of Correct Answers	Std. Deviation	Median
Immediate	27 (48.9%)	76.82	17.26	79
Delayed	55 (49.1%)	80.59	16.48	82

Fig. 4.3 displays the difference between the medians of the scores for both types of corrections. The median for the immediate corrections is presented by the heavy black line through the box representing the immediate correction scores. Similarly, the median for the delayed corrections is presented by the heavy black line through the box which represents the delayed correction scores. These two lines are approximately on the same level. The line in the delayed correction box is only slightly higher than the one in the immediate correction box. This means that the difference between the two is not great.

Fig. 4.3: Box Plot for Scores of Immediate and Delayed Corrections



The lower and the upper boundary of the boxes mark the 25th and 75th percentiles of each distribution respectively. For the immediate correction group the lower boundary value is 67 and the upper boundary value is 88. For the delayed correction group, the lower boundary value is 70 and the upper one is 100. The smallest and largest scores within the distributions are represented by the horizontal lines at either end of the boxes. For the immediate correction group, the smallest value (other than the outlier) is 42 and the largest value is 100. For the delayed correction group they are 50 and 100 respectively. One outlier (score= 33) can be seen in the immediate correction group designated by a circle and positioned 1.5 box lengths from the lower edge of

the box. The presence of the outlier and the extreme score 100 has caused the median not to be exactly the same as the mean.

#### 4.2.4 Difference in Means of Scores for Immediate and Delayed Corrections

As displayed in Tables 4.2 and 4.3, the results show that mean ranks for the immediate and delayed correction groups are 9.06 and 11.68 respectively. The output indicates that there is a non-significant statistical difference between the scores for the immediate and delayed correction groups ( $z = -879$ ,  $p\text{-value} = .380$ ,  $p > .05$ ).

Table 4.2: Wilcoxon Signed Ranks Test for Immediate and Delayed Corrections

		N	Mean Rank	Sum of Ranks
delayed - Immediate	Negative Ranks	20(a)	11.68	128.50.00
	Positive Ranks	25(b)	9.06	81.50
	Ties	11(c)		
	Total	56		

a. delayed < Immediate

b delayed > Immediate

c delayed = Immediate

Table 4.3: Wilcoxon Test for Immediate and Delayed Corrections

	delayed - Immediate
Z	-.879(a)
Asymp. Sig. (2-tailed)	.380

a. based on negative ranks.



### 4.3 DISCUSSION

One of the purposes of this study was to investigate whether there was a difference in learning between learners who were immediately corrected and those who received delayed correction. This would shed light on whether the timing of the teacher's corrective interventions makes a significant change in learners' development.

In our sample of 56 upper-intermediate learners of English as a foreign language, who reconstructed two different tasks, there was no significant difference between the scores (on the tailor-made tests) of those who received immediate correction and those who received delayed correction. Accordingly, the answer to the first research question is in the negative.

Doughty (2001) has argued that immediate feedback is effective because it enables learners to carry out a cognitive comparison at the time they make the error. She talks about a 'window of opportunity'. Optimal timing, according to Doughty and Williams (1998) for focus on form is when there is simultaneous attention to form, meaning, and function provided that focus on form occurs within an appropriate cognitive window. However, the results of the present research do not support such a position.

The findings show that immediate error correction and delayed error correction are equally effective in drawing the learners' attention to discrepancies between the interlanguage and target language forms. Despite some obvious differences between immediate correction and delayed correction, the effect of these two corrections was very similar. The crucial aspect of correction seems to be that it enables learners to carry out a cognitive comparison leading them to notice-the-gap between their own interlanguage and the target language. Both the immediate and delayed corrections enabled learners to carry out this cognitive comparison so both were effective.

There are several reasons as to why there was no difference between immediate and delayed corrections:

#### 4.3.1 Strong Points in Both Corrective Feedback Moves

One possible reason is the fact that both types of corrections had their strong points: The immediate correction came precisely after the occurrence of error (in Long and Robinson's 1998 term, a brief shift of attention from meaning to form at precisely the time when the learner need arises). This was an optimal time for pedagogical intervention, because the learner could carry out a cognitive comparison. However, the delayed correction too had its own strong point: it included repetition of the learners' utterance to draw attention to the error followed by correction. In some instances (for example, the following episode 32A3), the researcher repeated the learner's utterances containing an error, putting the error into focus by using stress and rising intonation.:

Episode 32 A3:

Then you said: This diamond ARE the hardest. You should say: this type of diamond IS the hardest type of diamond, you need a singular form of the tense here (32 A/3).Also...

#### 4.3.2 Contextualized Corrections

Meaning was present in both types of corrections. In other words, both types of corrections were integrated with meaning. Meaning was not limited to sentential level; it was extended to the context of the reconstruction task. The learners made grammatical errors in the course of conveying particular meanings. It was not as if the errors emerged in an isolated manner without any reference to prior discourse. Also, correction of errors took place within the interactional context. Therefore, because both types of corrections were contextualized and meaningful, it is possible that they were equally effective in enabling learners to adjust their interlanguage.

#### 4.3.3 Negotiation

Because there was negotiation between the researcher and the learners, the learners' attention was drawn to the corrected feature. As Gass (2003, p. 235) argues, "through

focused negotiation work, the learner's attentional resources may be oriented to (i) a particular discrepancy between what she/he knows about the second language and (ii) an area of the second language about which the learner has little or no information". In both immediate and delayed corrections, through negotiation, discrepancies between the learners' interlanguage and the target form were exposed to the learners and their attentional resources were oriented to these discrepancies. Negotiation was a crucial forum for focusing the learners' attention to the corrected feature and for leading the learners to notice the gap and the mismatch between their interlanguage and the target structure. The following two error correction episodes illustrates how learners' attention was drawn to their errors by negotiation:

#### Episode (5A3) Delayed Correction:

R: Another thing you said is 7th Edward.

L: The 7th. Edward?

R: No, Edward the 7th.

L: Edward the 7th.

R: Because here you use a proper noun and a famous person, you should use Edward the 7th. Ordinal number comes after the noun in this case.

L: only in this case?

R: yes, where noun is a proper noun

#### Episode (13 B 6) Immediate Correction

L: He said all the thing to the police officer

R: You can't say all the thing. You can say everything

L: Why not all the thing?

R: You can say 'all the things that had happened to him to the police officer', but not just all the thing. Ok, everything.

L: He said everything and arrested...

The learner asks the researcher about the reasons for the way he wants them to modify their utterances leading the learner's attention to the mismatch.

#### 4.3.4 Saliency of Corrective Feedback

A further explanation for the fact that there was no difference between immediate and delayed correction was salience of both treatments. The feedback in both immediate and delayed correction increased salience of features and salience led to noticing.

#### 4.3.5 Individualized attention

One possible reason for the fact that there was no difference between the effect of immediate and delayed correction is that the learners in both treatments received individualized attention. The study was carried out in a laboratory setting with a relatively small number of subjects. The learners were individually engaged in tasks with the researcher and the treatments were carried out on individual basis; therefore, it was possible for the researcher (in both immediate and delayed correction) to draw the learners' attention to errors and this may have had an impact on their noticing of errors.

#### 4.3.6 Summary

The findings of this study suggest that there is no difference in the test scores of the immediate and delayed groups. Despite a number of differences between these two groups, the effect of the two types of correction on the learners' intake was the same. Some possible reasons for the similar effectiveness of these two corrections are that they both involved meaning- oriented reactive focus on form that took place in an interactive context. Interaction directed the learners' attentional resources to the discrepancies between their interlanguage and the target language. Attention could not be directed without salience in the input. Immediate and delayed correction increased salience of input through individualized attention to the learners.

Although it is hypothesized that immediate correction is optimal for focus on form because it provides an opportunity for learners to compare their interlanguage structure with the target language, the findings in this study did not support this hypothesis. One reason for this, in addition to the above reasons may be the fact that, in the delayed treatment the researcher repeated learners' erroneous utterances, causing them to be noticed by learners.

## CHAPTER FIVE

### RESULTS AND DISCUSSION

#### RESEARCH QUESTION TWO

##### 5.1 INTRODUCTION

This chapter addresses research question two (Is there a difference between the effects of explicit correction and implicit correction in language learning?). The participants in this study completed two reconstruction tasks during which they received either implicit correction (recasts) or explicit correction in response to a number of erroneous utterances that contained a grammatical error. A recast is defined as “the teacher’s reformulation of all or part of a student’s utterance minus the error” (Lyster and Ranta’s 1997: 46). Explicit feedback refers to a type of feedback that includes grammatical explanation or overt error correction (Long, 1996 p. 413). Results of Research Questions Two are presented in Sections 5.2 and 5.3 respectively. Section 5.2 presents the results of the scores on the tailor-made tests pertaining to the explicit and implicit corrections. Section 5.3 presents the discussion of the results.

##### 5.2 RESULTS OF THE EXPLICIT AND THE IMPLICIT CORRECTIONS

###### 5.2.1 Scores on Tailor-made Tests

Overall, the learners who were corrected explicitly scored higher on the tailor-made tests than the learners who were corrected implicitly (refer to Appendix M2).

###### 5.2.2 Normality of Distributions

Figures 5.1 and 5.2 show the distribution of the implicit and the explicit scores in relation to a normal distribution. The shapes of the graph 5.1 and 5.2 show that the distribution of scores in the implicit corrections is relatively normal because most of the scores are bunched in the middle of the curve although they tend to cluster at the right side of the mean line. Skewness of the implicit corrections is -0.662 and the

standard error of skewness is 0.319. The ratio of skewness to its standard error is less than +1 and greater than -1, indicating normality of distribution.

Fig. 5.1: Frequency Distribution of Implicit Corrections

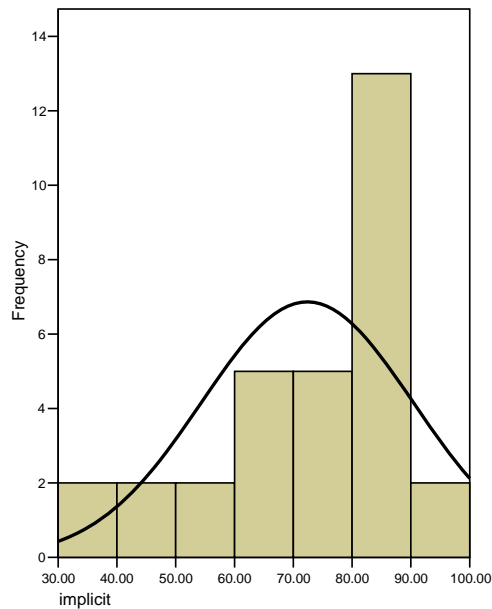


Fig. 5.2: Frequency Distribution of Explicit Corrections

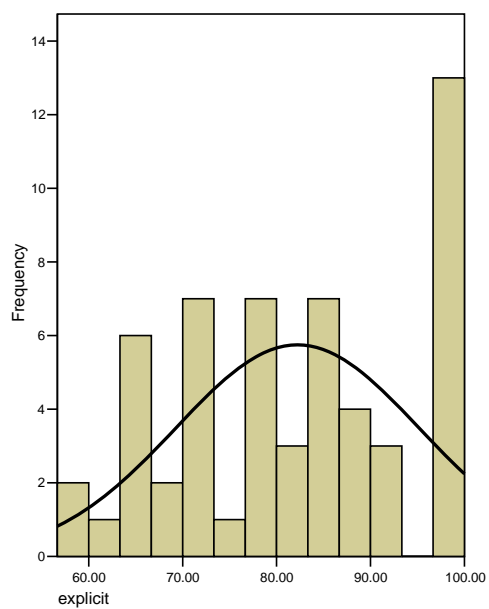


Fig. 5.2 shows the distribution of scores in the explicit correction group. The skewness is -0.044 with a standard error of 0.39. The ratio of skewness to its standard error is less than +1 and greater than -1, indicating normality of distribution. Since the frequency of scores in both variables follow a normal distribution, parametric tests for comparing means are carried out to compare the two groups.

### 5.2.3 Descriptive Statistics

As shown by Table 5.1, the mean scores on the tailor-made tests for the implicit correction group and the explicit correction group are 72.38 and 82.03 respectively. The standard deviation was 18.28 for the implicit correction group and 13.20 for the explicit correction one, indicating that the scores in the explicit correction group were less spread and more homogenous than the scores in the implicit correction group. The medians of the two groups are 77 and 83 for the implicit and explicit groups respectively.

Table 5.1: Group Statistics for Implicit and Explicit Corrections

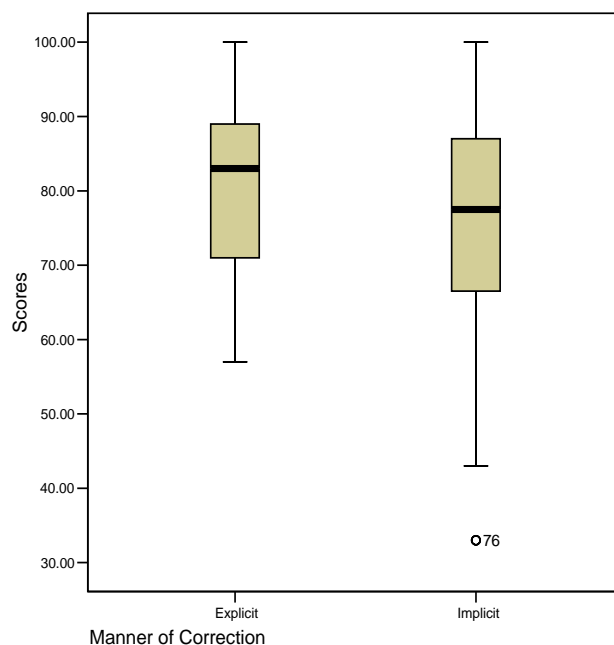
Correction Manner	N (Number of learners)	Mean	Std. Deviation	Median
Implicit	30 (55.40. %)	72.38	18.28	77.00
Explicit	56 (100 %)	82.03	13.20	83.00

Fig. 5.3 displays the difference between the median scores for both groups. The median of the implicit correction group is shown by the black line through the box representing the implicit correction scores; similarly the median of scores for the explicit correction group is shown by the black line through the box representing the explicit correction scores. The median line in the explicit box is positioned higher than the one in the implicit box indicating a clear difference between the two groups. The lower and the upper boundaries of the boxes represent the 25th and the 75th percentiles of each distribution respectively. For the explicit correction group, the



lower boundary score is 71 and the upper boundary score is 89. For the implicit correction group, the lower boundary score is 67 and the upper boundary score is 87. The smallest and the largest scores within the distributions are represented by the horizontal lines at either ends of the boxes. For the implicit correction group, the smallest value is 33 and the largest value is 100. For the explicit corrections they are 57 and 100 respectively. One outlier (score=33) can be seen in the implicit correction group designated by a circle (next to the score number 76) and positioned 1.5 box lengths from the lower edge of the box.

Fig. 5.3: Box Plot for the Explicit and Implicit Corrections



#### 5.2.4 Difference in Means for Implicit and Explicit Corrections

In order to find out whether there is a significant difference between their means, a parametric test; namely, paired-sample t-test was carried out. It was significant ( $t = 2.767$ ,  $df = 30$ ,  $p = .010$ ,  $p < .05$ ). This indicates that the scores pertaining to the explicit corrections are significantly higher than the scores pertaining to the implicit corrections (see Table 5.2).

Table 5.2: Paired Sample Test for Explicit and Implicit corrections

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Lower	Upper								
Pair 1	explicit - implicit	9.64516	19.41056	3.48624	2.52531	16.76501	2.767	30	.010

### 5.3 DISCUSSION

Research Question Two asked whether there was a difference in the effects of explicit correction and implicit correction on language learning. The answer to this question was positive. Such an answer should help to elucidate the debate over the role of grammar instruction and focus on form in general and error correction in particular.

The results of the current study (obtained by the scores on the tailor-made tests) are consistent with those of previous corrective feedback laboratory research studies (Carroll & Swain, 1993; Nagata, 1993; Dekeyser, 1993; Muranoi, 2000; Kim and Mathes, 2001; Havranek & Gesnik, 2003; Leeman, 2003; Sanz, 2003; Lyster 2004; Rosa & Leow, 2004; Ellis et al., 2006). Although there was significant variation in the purposes and designs of these studies, the findings indicate that explicit correction works better than implicit correction where treatment involves production. In Carroll and Swain (1993) and Carroll (2001), direct metalinguistic feedback outperformed all other types of correction. Formal grammatical explanation was more effective than meaning-focussed debriefing in Muranoi's (2000) study. Havranek and Gesnik (2003) found that recasts were the least effective type of correction in their study. Lyster (2004) reported that prompts (which included metalinguistic feedback) were more effective than recasts. Also, there is some evidence (Nagata, 1993; Rosa and Leow, 2004) that detailed metalinguistic feedback works better than less detailed metalinguistic feedback. In addition to the laboratory studies, some classroom

research studies, conducted by Leow (1998), Doughty (1991), and Scott (1989, 1990) have also shown that explicit correction is more beneficial than implicit correction.

### 5.3.1 Attention

One reason why the explicit correction was more effective than the implicit correction was because it was more effective in raising awareness of corrected feature in the learners. Explicit correction involved metalinguistic feedback as well as the provision of the correct forms, but implicit correction involved only provision of the correct form. Considering the crucial role of attention in learning (Doughty 2001, Schmidt 2001), awareness may have been the main cause for the better performance of the explicit correction group over the implicit correction group. Schmidt (1990) believes that subliminal learning is impossible, and that intake is what learners consciously notice (p. 149). He also believes that “attention controls access to conscious knowledge” (Schmidt 1994 p.176), allowing the new features to be learned.

The explicit correction of learners’ errors triggered the learners’ noticing of gaps between the target form and their existing interlanguage forms and this led them to restructure their interlanguage. Moreover, as Rod Ellis (1991) claims, in order for acquisition to take place, learners must notice, compare, and integrate the feedback. Therefore, the explicit correction in this study may not only have pushed the learners to notice the target feature, but also may have created a situation in which they compared the noticed target feature with their own interlanguage rules and thereby were able to incorporate it into their interlanguage. On the other hand, implicit correction probably did not trigger noticing to the same extent as the explicit correction did, and consequently may not have created a situation in which the learners could compare the target forms with their existing interlanguage forms in order to incorporate them into their interlanguage systems.

### 5.3.2 Hypothesis Testing Model

The findings for this research question can also be explained from the perspective of hypothesis testing models of acquisition. In these models, learners are assumed to make a hypothesis about the target language form and test it against their own production of the form. Correction has a crucial role in this model of acquisition (Bley-Vroman, 1986, 1989). It may stimulate hypothesis testing, giving learners the opportunity to restructure their existing interlanguage. Explicit correction may better be able to help learners test hypotheses about target features, because as Chaudron (1988) argues, the information in the feedback helps the learners confirm, disconfirm, and possibly modify transitional rules in their developing grammars. On the other hand, implicit correction is less effective than explicit correction because it may not provide the learners with sufficient information to test a hypothesis. The provision of the correct form in implicit correction may not so effectively enable learners to understand what is wrong with their erroneous utterance and without such understanding, hypothesis revision is not possible.

### 5.3.3 The Corrective Force of the Feedback

Another reason for the better performance of the explicit correction may be related to the obvious nature of explicit feedback. Learners most likely perceive explicit corrections as corrective feedback requiring them to correct their errors. This is because of the nature of the feedback. Explicit feedback involves meta-discourse, whereas implicit feedback may not be perceived as corrective. Accordingly, in this research, the obvious nature of feedback in the explicit correction appeared to have made the learners more attentive to the corrected features and aware of the gaps between their existing knowledge and the target knowledge. This is illustrated in the following error correction episode:

53 A/1 (IE)

L: Yes, this text that I read before was about a summarize about the diamonds and some other sentences that related to this matter. Diamonds, Marilyn Monroe in the film was called Gentleman Prefers Blondes, are the girl's best friends. Diamond

maybe you don't think it that this true, this matter true but we can be discuss about this matter.

R: Not 'we can be discuss about this matter', OK? Good, because ...

L: We can be discuss (!)

R: Not 'we can be discuss' because after 'can' we can't use the verb 'be' and the 'main verb'.

L: Yes we can discuss about this matter. Diamonds as you know and every body knows is one of the hardest matter (SC) (substance) around the world.

The researcher intended to correct the learner explicitly, but the learner reacted to the researcher's comment by interrupting him and repeating the erroneous form. This shows that she had expected to receive corrections from the outset, therefore she was attentive to the feedback, and also her uptake clearly shows that her attention was drawn to the form after the feedback.

Conversely, implicit correction was more likely to have been perceived as the researcher's confirmation of the learners' utterances. This was because implicit corrections were more meaning-based than explicit ones. The learners may have not interpreted the implicit feedback as providing negative evidence; they might have perceived it as the researcher simply helping the flow of communication. The following error correction episode shows that the learner did not recognize the recast (a form of implicit feedback) as corrective feedback.

17 A/4(II)

L: and now it is a part of crown jewels and is kept in London Tower.

R: and it is part of the crown jewels and it is kept...

L: and it is kept right now in the London Tower

R: and it is kept in the Tower of London

► L: London, diamonds are also used for...

#### 5.3.4 Summary

The answer to research question two was that the explicit correction was significantly more effective than the implicit correction. This was discussed in the light of some notable previous research in the area. The explanation for the difference in effectiveness of explicit and implicit corrections offered above is compatible with Schmidt's 'noticing' hypothesis, hypothesis testing models of acquisition. The extent to which learners recognize the corrective force of the feedback may also have influenced the effectiveness of explicit correction.

## CHAPTER SIX

### RESULTS AND DISCUSSION

#### RESEARCH QUESTION THREE

### 6.1 INTRODUCTION

This chapter addresses research question three (Is there a difference in the effects of error correction on the learning of morphological and syntactic features?). Sections 6.1.1 to 6.1.5.2.1 report the results. Sections 6.2 to 6.4 report the discussion of the results.

#### 6.1.1 Learners' Scores on Morphological and Syntactic Test Items

Tables 6.1 and 6.2 show the total number of corrections for all tailor-made tests (TC), the mean score of correct answers (MS) as a fraction, the mean percentage (MP), and the standard deviation (SD) for each of the syntactic and morphological structures investigated.

**Table 6.1: Descriptive Statistics of the Syntactic Scores**

A. Syntactic	Imm./Exp.	Imm./Imp.	Del./Exp.	Total
1. Relative Pronouns	TC= 11 MS= 7/11 MP= 60% SD= 16.3	TC= 8 MS=6/8 MP=75% SD=14.3	TC= 8 MS= 5/8 MP= 62.5% SD=15.3	TC= 27 MS= 18/27 MP= 66% SD= 15.96
2. Active and Passive	TC= 14 MS= 10/14 MP= 70% SD= 14.3	TC= 16 MS= 12/16 MP= 75% SD= 9	Total:23 MS=15/23 MP= 65% SD=10.3	TC= 53 MS= 37/53 MP= 70% SD= 11.22
3. Word Order	TC= 8 MS= 7/8 MP= 87.5% SD= 15	TC= 17 MS= 14/17 MP= 82% SD= 11.9	Total=12 MS= 9/12 MP= 76% SD=10.7	TC= 37 MS= 30 MP= 82% SD= 12.53

Table 6.2: Descriptive Statistics of the Morphological Scores

B. Morphological	Imm./Exp.	Imm./Imp.	Del./Exp.	Total
1.Definite Article (the)	TC= 13 MS= 9/13 MP= 72% SD= 12.6	TC= 21 MS= 15/21 MP= 71% SD= 13.3	TC= 22 MS= 14/22 MP= 77% SD= 10.3	TC=56 MS= 38/56 MP= 73% SD=12.40
2.Indefinite Article (a, an)	TC= 11 MS= 7/11 MP= 63.5% SD= 15.3	TC= 9 MS= 5/9 MP= 57% SD= 16	TC= 24 MS= 12/24 MP= 50% SD= 16.3	TC= 44 MS= 24/44 MP= 57% SD= 15.53
3.Regular Past Tense(ed)	TC= 10 MS= 8/10 MP= 80% SD= 10.3	TC= 11 MS= 9/11 MP= 83% SD= 6	TC= 22 MS= 16/22 MP= 72% SD= 14	TC= 43 MS= 33/43 MP=78% SD= 10.10
4.Irregular Past Tense	TC=8 MS= 7/8 MP= 87% SD= 11.9	TC=9 MS= 7/9 MP= 78% SD= 0	TC=15 MS= 15/15 MP= 100% SD= 0	TC= 32 MS= 29/32 MP= 88% SD= 3.96
5.Plural 'S'	TC=12 MS= 7/12 MP= 58% SD= 13	TC=12 MS= 9/12 MP= 75% SD= 13	TC=15 MS= 15/15 MP= 100% SD= 0	TC= 39 MS= 31/39 MP= 78% SD= 8.67
6.Third Person Singular 'S'	TC =24 MS= 12/24 MP= 50% SD= 9	TC=5 MS= 4/5 MP= 80% SD= 10	TC=10 MS= 8/10 MP= 80% SD= 12.7	TC= 39 MS= 24/39 MP= 70% SD= 10.57

### 6.1.2 Normality of Distribution

Figures 6.1 and 6.2 show the distribution of the scores of the morphological test items and the syntactic test items in relation to a normal distribution. The shapes of the graphs 6.1 and 6.2 show that the distribution of scores in the morphological and syntactic test items is not normal because most of the scores are bunched on the right side of the graph. The frequency of the total correct scores has made the distribution



skewed. The Kolmogorov- Smirnov statistic, that tests the hypothesis that the data are normally distributed, reveals a low significance value ( $p= 0.00$ ,  $p<0.05$ ) for the morphological test items, and also a low significance value ( $p=0.01$ ,  $p<0.05$ ) for the syntactic test items, indicating that the distributions of the data differ significantly from a normal distribution.

Fig. 6.1: Frequency Distribution of Scores on Morphological Test Items

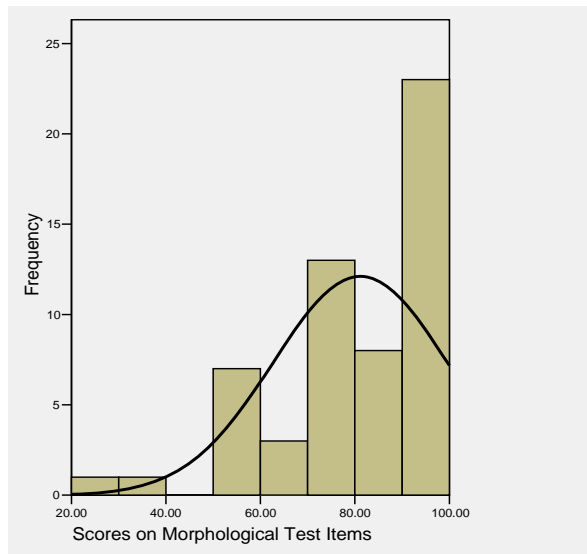
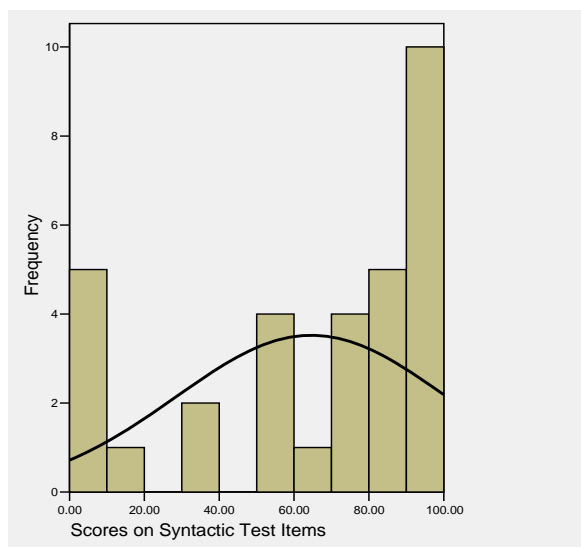


Fig. 6.2: Frequency Distribution of Scores on Syntactic Test Items



Since the frequency of scores for the morphological and the syntactic groups do not follow a normal distribution, parametric tests for comparing means were not performed. Instead, non-parametric tests, which do not require normally distributed data, have been used; Norusis 2004).

### 6.1.3 Descriptive Statistics for the Scores

The mean scores for the morphological test items and the syntactic test items are 81.14 and 64.64 respectively. The 5% trimmed means for both groups are 82.65 and 66.27 respectively. They do not differ greatly from the mean scores, indicating that the mean values were not substantially affected by extreme scores (i.e. the 5% trimmed mean excludes the 5% largest and the 5% smallest values (Norusis, 1997).

Table 6.3: Group Statistics for Scores on Morphological and Syntactic Items

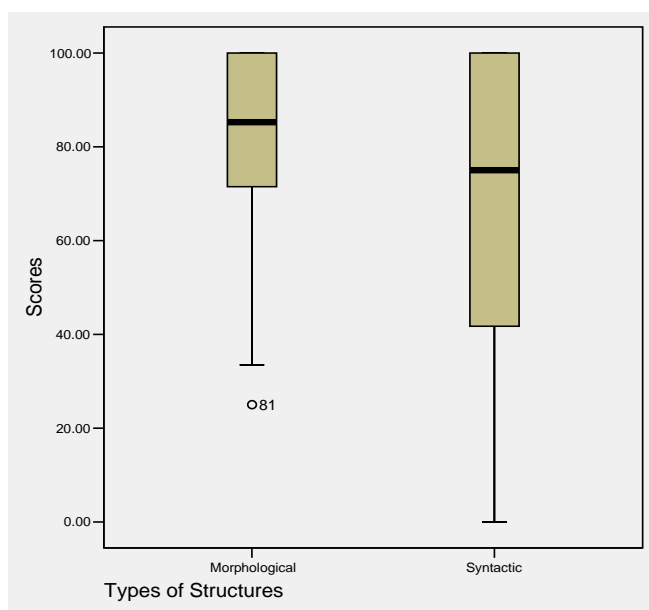
Scores	N (Number of the learners)	Mean	Std. Deviation	Median	Range
Morphological Scores	56 (100%)	81.14	18.45	85	75
Syntactic Scores	56 (100%)	64.64	36.22	75	100

The standard deviation is 18.45 for the morphological test items and 36.22 for the syntactic test items indicating that the scores on the syntactic items are more spread across the range and more heterogeneous than the scores on the morphological tests. The medians are 85.00 and 75.00 for the morphological and syntactic test items respectively. There is also a substantial difference between the ranges of the two groups. Overall, a comparison of the descriptive statistics for both groups of test items suggests that the morphological corrections were more effective than the syntactic corrections (See Table: 6.1).

Fig. 6.3 displays the medians, the inter-quartile range, and the extreme scores in the distribution. The boxes include fifty percent of the scores in each distribution. The

lower boundary of each box represents the 25th percentile. The upper boundary represents the 75th percentile. The 25th percentile for the morphological test items and syntactic test items is 71.5 and 41.75 respectively. The 75th percentile for both types of items is 100.

Fig. 6.3: Box-plot for Scores on Morphological and Syntactic Items



The vertical length of the box represents the interquartile range which is 28.75 and 62.40 for the morphological items and syntactic items respectively, indicating that the scores in the morphological test items are more clustered around the mean. The medians are shown by the black lines inside the boxes. They are 85 and 75 for the morphological and the syntactic items respectively. The median line in the morphological box is positioned higher than the one in the syntactic box indicating a clear difference between the two sets of structures.

#### 6.1.4 Testing the Difference in Means of the Syntactic and Morphological Test Items

The tailor-made tests for each learner included both syntactic test items and morphological test items. Therefore a two related sample test was carried out to compare the means of the scores for both variables. Further, since the data violate at least one stringent assumption (normality) of a paired t-test, a paired t-test was not

performed (Coakes, 1997). Instead, a non-parametric, two related sample test, namely, the Wilcoxon Signed Rank Test, was performed. The level of significance used for the test was 0.05.

As displayed in Table 6.4, the results show that mean ranks for the scores of the morphological and syntactic test items are 16.44 and 11 respectively. The output, as displayed in Table 6.5, indicates that there is a significant statistical difference between the scores for the morphological and syntactic test items ( $z = -2.118$ ,  $p\text{-value} = 0.034$ ). This clearly shows that the learners scored higher on the morphological items than on the syntactic items.

Table 6.4: Wilcoxon Signed Ranks

		N	Mean Rank	Sum of Ranks
Syntactic/Morphological Test Items	Negative Ranks	18(a)	16.44	296.00
	Positive Ranks	10(b)	11.00	110.00
	Ties	4(c)		
	Total	32		

a. Syntactic < Morphological

b. Syntactic > Morphological

c. Syntactic = Morphological

Table 6.5: Wilcoxon Signed Rank Statistics

	Morphological Syntactic
Z	-2.118(a)
Asymp. Sig. (2-tailed)	.034

a. Based on positive ranks.

### 6.1.5 Interactional Analysis

This section deals with two types of interactional analysis:

1. The interaction between the type of structure (i.e. morphological versus syntactic features) and the type of correction (i.e. explicit versus implicit)
2. The interaction between the type of structure (i.e. morphological versus syntactic features) and the time of correction (i.e. immediate versus delayed)

#### 6.1.5.1 Group Statistics and the Test of Interaction between Correction Time (i.e. immediate vs. delayed) and Structural Type

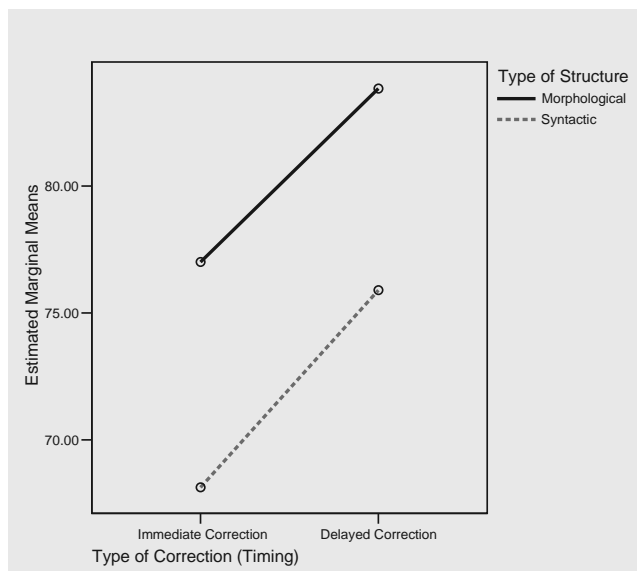
Table 6.6 shows the main statistics for the interaction between the type of correction and the type of structure. It shows that the learners receiving immediate correction of the morphological items scored higher than did the learners receiving immediate correction of the syntactic items. Also, the learners receiving delayed correction of the morphological items scored higher than did the learners in the delayed syntactic group. The standard deviations for the test scores on the morphological items (subject to immediate correction) and for the test scores on the syntactic items (subject to immediate correction) are 26.14 and 28.14 respectively.

This indicates that the scores on syntactic test items are far more spread than the scores on morphological test items. The standard deviations for the scores on the morphological items (subject to delayed correction) and for the scores on the syntactic items (subject to delayed correction) are 21.47 and 28.27 respectively. This shows that the scores on the syntactic items are less homogeneous than the scores on the morphological test items (refer to Table 6.6).

Table 6.6: Group Statistics for the Interaction

Type of Correction	Type of Structure	Mean	Std. Deviation	N
Immediate Correction	Morphological	77.0091	26.14	55
	Syntactic	68.1304	28.14	46
	Total	72.9653	32.30	101
Delayed Correction	Morphological	83.8393	21.47	56
	Syntactic	75.9000	28.27	40
	Total	80.5313	24.87	96
Total	Morphological	80.4550	24.03	111
	Syntactic	71.7442	28.18	86
	Total	76.6523	21.23	197

Fig. 6.4 Interaction Between Correction Type and Structure Type



However, as shown by Fig. 6.4, the two lines representing morphological and syntactic structures do not intersect each other. In fact they are almost parallel. This means that the interaction between the correction type and the structure type (i.e. morphological versus syntactic) is almost none-existent.

The necessary assumption for this test (i.e. the equality of variance assumption) was checked. The null hypothesis for the interaction is that the effect of the time of correction on the scores is the same for the morphological and syntactic items. In order to see whether there is a significant interaction, a 2×3 ANOVA test; (a Univariate Analysis) was performed. The results were:  $p = .916$ ,  $p > .05$ . Therefore, the null hypothesis that there is no interaction between the type of correction and the type of structure was not rejected, indicating that the effect of the time of correction on the scores for morphological and syntactic structures was non significant (see Table 6.7).

Table 6.7: Interaction Effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6262.815(a)	3	2087.605	2.179	.092
Intercept	1122894.814	1	1122894.814	1172.022	.000
Morpho/Synt.	3416.884	1	3416.884	3.566	.060
Imm/Del. Interaction	2574.993	1	2574.993	2.688	.103
Morpho/Synt Imm/Del. Interaction*	10.660	1	10.660	.011	.916
Error	184910.116	193	958.084		
Total	1348660.750	197			
Corrected Total	191172.931	196			

#### 6.1.5.2 Group Statistics and the Test of Interaction between Correction Type (i.e. Explicit vs. Implicit) and Structure Type

Table 6.8 shows the main descriptive statistics for the interaction between the correction type (i.e. explicit vs. implicit) and the structure Type (i.e. morphological vs. syntactic). It shows that the learners receiving explicit correction of the morphological items scored higher than did the learners receiving explicit correction of the syntactic items. Also, the learners receiving implicit correction on morphological items scored higher than did the learners receiving implicit correction

on syntactic items. Overall, the learners receiving explicit correction on morphological items performed the best.

Table 6.8: Group Statistics for the Interaction

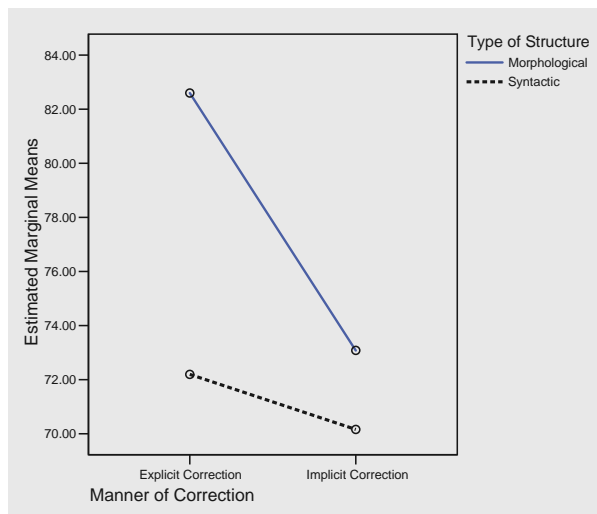
Type of Correction	Type of Structure	Mean	Std. Deviation	N
Explicit Correction	Morphological	82.5988	21.98	86
	Syntactic	72.1940	28.19	67
	Total	78.0425	25.05	153
Implicit Correction	Morphological	73.0800	19.38	25
	Syntactic	70.1579	29.13	19
	Total	71.8182	29.55	44
Total	Morphological	80.4550	24.03	111
	Syntactic	71.7442	38.18	86
	Total	76.6523	31.23	197

The standard deviations for the test scores on the morphological items ( subject to explicit correction) and for the test scores on the syntactic items (subject to explicit correction) are 21.98 and 28.19 respectively, indicating that the scores on syntactic test items are more spread than the scores on morphological test items. The standard deviations for the scores on the morphological test items (subject to implicit correction) and for the scores on syntactic test items (subject to implicit correction) are 19.38 and 29.13 respectively. This shows that the scores on the syntactic items are less homogenous than the scores on the morphological test items (refer to Table 6.8).

However, as shown by Fig. 6.5, the two lines representing morphological and syntactic structures do not intersect each other. This means that the interaction between the correction type and the syntactic type is almost none.



Fig. 6.5 Interaction Between Correction Type and Structure Type



A 2×3 ANOVA test (i.e. a Univariate Analysis) was performed. The results were:  $p = .486$ ,  $p > .05$ . Therefore, the null hypothesis that there is no interaction between the type of correction and the type of structure was not rejected, indicating that the effect of the type of correction on the scores for morphological and syntactic structures was non-significant (see Table 6.9).

Table 6.9: Interaction Effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5493.178(a)	3	1831.059	1.903	.130
Intercept	745248.479	1	745248.479	774.629	.000
interaction	1120.255	1	1120.255	1.164	.282
MS2	1490.178	1	1490.178	1.549	.215
interaction * MS2	469.781	1	469.781	.488	.486
Error	185679.754	193	962.071		
Total	1348660.750	197			
Corrected Total	191172.931	196			

## 6.2 DISCUSSION

The first objective of the analysis for research question three was to investigate whether there was a difference in the effects of error correction on the learning of morphological and syntactic features. The second objective was to find out whether there was any interaction between the type of treatment (immediate explicit, immediate implicit, and delayed explicit) and morphological vs. syntactical features. To fulfill these objectives, a number of morphological and syntactic features were examined.

The main findings of the study of the third research question were:

- (a) Correction of the morphological errors was significantly more effective than correction of the syntactic errors ( $p = .034$ ).
- (b) The interactions between the correction times and manner (immediate versus delayed and explicit versus implicit) with the structure type (syntactic versus morphological) were shown to be non-significant. This indicates that the timing and manner of correction did not have a significant effect on the test scores of the morphological and syntactic items.

There is no research, to the best of my knowledge that has directly compared the effectiveness of syntactic and morphological corrections. However, the current literature on second language acquisition research reports a number of experimental and classroom studies that have indirectly compared the effect of feedback on different features without distinguishing between morphological and syntactical features. A number of these studies investigated syntax: Dekeyser, 1995 (categorical rules); Doughty and Varela, 1998 (passives and participles); Rosa and O'Neil, 1999 (conditional sentences); Robinson, 1996, 1997 (pseudo cleft of locations and subject inversion, dative alternation); Van Patten and Oikenon, 1996 (Spanish object pronoun); and Shook, 1994 (present perfect and relative clauses in Spanish), and some others investigated morphemes: Carroll & Swain, 1992, 1993 (suffixes 'ment' and 'age', dative alternation); Leow, 1998 (morphological irregularities); Alanen, 1995 (locative suffixes).

The study that is closest to the present research is Gass et al. (2003), a comparative investigation of the effect of instruction on some morphosyntactic, syntactic, and lexical features of Italian. Unlike the present study in which the syntactic and morphological features were studied by post hoc analysis of the tailor-made items, in Gass et al. (2003), the learners were placed into one of the two conditions (+ focused attention and – focused attention) for each of the three linguistic areas (syntax, morphosyntax and lexicon).

The findings of their study showed that the instruction directed at syntactic forms was more effective than that directed at morphosyntactic forms. Results of the Wilcoxon matched-pairs signed ranks test showed that, when attention was involved (+attention), the greatest gain was on syntax, morphosyntax ranked second, and lexicon third. When attention was not involved (-attention), the ordering was the reverse and in the direction originally predicted. However, as Gass et al. themselves state, the fact that the morphological structure they examined had a syntactic component to it made the morphosyntactic results very close to the syntactic results, more than might have been the case if they had used a purely morphological form (Gass, et al., 2003: 528). Based on their results, Gass et al. (2003) conclude that focused attention was better utilized in more complex areas (like, syntax). Because learners could not use their own internal resources for learning in areas that are highly complex and abstract, they needed increased attention to compensate for their lack of internal sources. They do not clarify the nature of internal resources and how they operate in learning. However, internal resources (internal factors) refer to “the mental processes that learners utilize to convert input into knowledge. They include processes involved in making use of existing knowledge (of the mother tongue, of general learning strategies, or of the universal properties of language) to internalize knowledge” (Ellis, 1994a p. 16).

The results of Gass’ et al., study can be compared with the present research despite the fact that former involved a non-ESL/ EFL situation. Both studies investigated the extent to which focused attention affects the learning of some parts of language as opposed to other parts.

Researchers in second language acquisition concur that, in order for the learners to select the right linguistic information from input, attention is crucial (Gass, et al. 2003; Alanen, 1995; Doughty and Williams, 1998; Long, 1991; Robinson, 1996; Schmidt & Frota, 1986; VanPatten & Cadierno, 1993).

Attention causes noticing and through noticing, learners can isolate relevant parts of the input to create and test hypotheses. Noticing arises because of (1) learner's existing interlanguage which creates a 'readiness' to notice, and (2) salience of a form in the input. Accordingly, if there is a difference in the outcome of correction for morphological and syntactic features, and if attention is the major factor in learning, then it is logical that the learners' attention (and consequently learners' noticing) is different for the two types of features.

One way to find out whether morphological or syntactic items are better noticed as a result of correction is by counting the number of successful uptake moves learners produce following morphological and syntactic corrections, because successful uptake is evidence that learners have noticed and paid attention to corrective feedback and are able to modify their output. Uptake can be defined as an attempt, by learners, to produce the correct utterance that has been modelled for them. According to Swain (1985, cited in Ellis, et al., 2001), uptake is, of course, not the same as acquisition. The fact that a learner responds to a focus on form by producing the form correctly does not mean that the learner has acquired the form. However, it does indicate that the form has been noticed. However, the results of this study suggest that there is no difference in the extent to which morphological corrections and syntactic corrections are noticed. This can be demonstrated by looking at the number of successful uptake moves. As shown in Table 6.10, successful uptake following morphological corrections and syntactic corrections is 83% and 88% of total uptake respectively indicating that the difference between them is negligible. Moreover, the chi squared analysis was non-significant:  $X^2 = 1.7526$ ,  $0.5 < p < .05$  (i.e. did not reach the .05 level) this means that successful uptake did not differ according to whether it followed feedback of morphological or structural features. In other words, the type of structure was not influencing uptake. This indicates that both types of corrections may have been equally noticed by the learners and that noticing cannot explain why correction

of morphological features was more effective than correction of syntactic features. Therefore, noticing is not an apparent factor in explaining the differences between the morphological and syntactic test scores.

Table 6.10: Uptake in Morphological and Syntactic Corrections

	Frequency	Percent
Total Error Correction Episodes (N)	764	100%
Total Uptake	185	24%
Morphological Uptake	104	56 %
Successful	93	88 %
Unsuccessful	11	12 %
Syntactic Uptake	81	44 %
Successful	67	83%
Unsuccessful	14	17%
<i>df</i>	1	
<i>p</i>	171	
$\chi^2$	1.7526	

### 6.2.1 Learning Difficulty

The main explanation for the difference between the morphological feature and syntactic features lies in learning difficulty. Learning difficulty can be explained in two different ways; it can be understood both in terms of: (1) understanding a grammatical structure and (2) acquisition of a grammatical structure, in the sense of internalising and incorporating it into one's interlanguage. This relates to the distinction between explicit and implicit types of knowledge. Understanding relates to explicit knowledge which refers to knowledge that is available to the learner as a conscious representation. Learners may be able to understand and memorise the rules pertaining to the grammatical structures of a language, but this does not necessarily mean that they have acquired them. Acquisition relates to implicit knowledge.

Therefore, there are two questions that need to be answered: First, which structures, morphological or syntactic, are easier to understand, and second, which structures are easier to acquire?

#### 6.2.1.1 Understanding

Learners may have been able to understand the morphological features better than syntactic features, because the degree of complexity (difficulty level) of some morphological features was less difficult than the syntactic features. In other words, morphological features are, for variety of reasons, easier than syntactic features to understand. The difficulty level is defined according to the degree of difficulty in explaining the form metalingually, and the number of criteria required to reach a correct production of a form.

The most important factor involved in linguistic complexity, as stated by Ellis (1997a: 69), is the difficulty of representing a rule in a declarative, propositional form. It is much easier to explain some features (like, plural- s) than some others (like, relative clause structure). Also, as Hulstijn and De Graaff (1994 p. 103) argue, the degree of complexity is determined by the number of criteria to be applied in order to arrive at the correct form. For example, if we consider the relative clause structure, there are a number of criteria that learners need to know before being able to produce this structure. They should normally have a knowledge of basic word order, tense sequence, passive/ active, tense aspect, relative word etc. However, for plural-s, the number of criteria needed to arrive at the correct form is less. Learners probably need to know only the concept of a noun before being able to produce plural forms.

#### 6.2.1.2 Acquisition

A number of the morphological features that were examined were developmentally early acquired features (i.e. plural-s, irregular past form, definite article). Conversely all of the syntactic features were probably beyond the learners' existing interlanguage. This made it hard for learners to learn them. Thus, a possible reason for the easier learning of morphological features in this study may be the learner's cognitive

readiness. It has been claimed by researchers (e.g. Pienemann, 1987, 1989, Pienemann and Johnston, 1986) that the features that involve little manipulation of elements or little demand on short-term memory tend to be acquired early. According to Pienemann, there is self-regulating cognitive basis for the speech processing plan that constrains learner production. These plans or strategies are entrenched in cognitive factors, such as perceptual salience and continuity of elements. Each stage is a prerequisite for the next stage as learners shed these constraints one by one. They develop readiness to learn the forms within the constraints of a particular stage and earlier stages. They are not likely to learn features beyond their existing stages.

### 6.2.2 Item versus System Learning

Another possible reason for the fact that the morphological features proved easier to learn than the syntactic features may lie in the distinction between item learning and system learning. In item learning, the learning entails learning individual exemplars, essentially what occurs when learners learn lexical items. In system learning, learners generalize their knowledge beyond the words they are given as examples to form rules. As has been hypothesized by Hulstijn and De Graaff (1994) and Ellis (1997b, Fotos and Ellis (1991), exemplar based item learning is less likely to occur in syntax because syntactic features have to be processed beyond the item level, whereas learners are likely to store individual, inflected word forms. A number of the morphemes in the study were more likely to have been more amenable to item learning than to system learning. Features such as articles and singular-s probably involve system learning but some features such as irregular past and plural-s entail item learning (Ellis 1997b). In the syntactic list, however, all the structures entail system learning.

Item learning may have made it easier for the learners to obtain higher scores on a number of morphological items (such as irregular past tense form) in the tailor-made tests. One reason for this may be related to the role of short term memory in learning. As mentioned previously, the features and structures that involve little manipulation of elements or little demand on short term memory tend to be learned earlier. Morphological features put less demand on short term memory than syntactic

features, because there is less manipulation of elements involved; also they act as concrete chunks, just like lexical items. However, syntactic structures place a heavy demand on short term memory. They include complex, abstract, and non- isolatable rules that can only be learned as a system in the course of time.

### 6.3 INTERACTION

The results of the interactions between the time and types of correction and the type of structure indicate that there was an equal effect for both timing (immediate and delayed) and manner (explicit and implicit) on the scores pertaining to the correction of morphological and syntactic structures. It indicates that the timing (immediate and delayed) of the corrections did not affect the learning of the morphological and syntactic items. In other words, the non- significant difference between immediate and delayed correction applies equally to both morphological and syntactic features. It does not matter so much whether we correct the morphological and syntactic structures in an immediate or delayed manner. Therefore, timing cannot be considered a distinguishing factor for the difference between the scores on the morphological and syntactic corrections. This is perhaps due to the fact that learners received correction on both morphological and syntactic structures through individualized attention and negotiation, also the fact that feedback increased salience in two types of structures.

It also shows that the effect of the manner of corrective feedback (explicit and implicit) was equally effective for both syntactic and morphological structures. In other words, the significant difference between explicit and implicit corrections applies equally to both the morphological and syntactic structures. Therefore, the manner of correction can not be considered a distinguishing factor for the difference between the scores on the morphological and syntactic corrections.

### 6.4 SUMMARY

Although this study could not show that there was an interaction between the types of correction and the type of structures (i.e. morphological/ syntactic), it did find that the correction of morphological errors is more effective than syntactic errors.



The underlying reason for the greater effect of the morphological corrections is the learning difficulty of different structures. Learning difficulty can be explained in two different ways: (1) understanding a grammatical structure and (2) acquisition of a grammatical structure. In terms of understanding, the lower difficulty level of some morphological features contributed to the difference of scores. In terms of acquisition, cognitive readiness could be an explanation for the learning difficulty that led to the difference of scores. Moreover, the higher test scores for the morphological features were also explicable in terms of item learning versus system learning. There were a number of features among the morphemes that may have entailed item learning. Conversely, syntactic features were more likely to have entailed system learning, which is more difficult for learners.

## CHAPTER SEVEN

### RESULTS AND DISCUSSION

#### RESEARCH QUESTION FOUR

### 7.1 INTRODUCTION

This chapter looks at the results for research question four which investigates whether there is any difference between the effects of the correction of the early and late developmental errors. Sections 7.1.1 to 7.2.3.4 report the results. Sections 7.3 to 7.3.2 report the discussion of the results. A summary is presented in section 7.4.

#### 7.1.1 Learners' Scores on Early and Late Developmental Test Items

The descriptive statistics show the total number of corrections for all tailor-made tests (TC), the mean score of correct answers (MS) in fraction, the mean percentage (MP), standard deviation (SD), and the total scores (see Tables 7.1 and 7.2).

**Table 7.1: Descriptive Statistics for the Early Developmental Features**

A. Early Features	Imm./Exp.	Imm./Imp.	Del./Exp.	Total
1.Plural 'S'	TC=12 MS= 7/12 MP= 58% SD= 13	TC=12 MS= 9/12 MP= 75% SD= 13	TC=15 MS= 15/15 MP= 100% SD= 0	TC= 39 MS= 31/39 MP= 78% SD= 8.67
2.Irregular Past Tense	TC=8 MS= 7/8 MP= 87% SD= 11.9	TC=9 MS= 7/9 MP= 78% SD= 0	TC=15 MS= 15/15 MP= 100% SD= 0	TC= 32 MS= 29/32 MP= 88% SD= 3.96
3. Word Order	TC= 8 MS= 7/8 MP= 87.5% SD= 15	TC= 17 MS= 14/17 MP= 82% SD= 11.9	Total=12 MS= 9/12 MP= 76% SD=10.7	TC= 37 MS= 30 MP= 82% SD= 12.53
4.Definite Article (the)	TC= 13 MS= 9/13 MP= 69% SD= 12.6	TC= 21 MS= 15/21 MP= 71% SD= 13.3	TC= 22 MS= 14/22 MP= 77% SD= 10.3	TC=56 MS= 38/56 MP= 72% SD=12.40

Table 7.2: Descriptive Statistics for the Late Developmental Features

B. Late Features	Imm./Exp.	Imm./Imp.	Del./Exp.	Total
1.Third Person Singular 'S'	TC =24 MS= 12/24 MP= 50% SD= 9	TC=5 MS= 4/5 MP= 80% SD= 10	TC=10 MS= 8/10 MP= 80% SD= 12.7	TC= 39 MS= 24/39 MP= 70% SD= 10.57
2.Indefinite Article (a, an)	TC= 21 MS= 13/21 MP= 61.9 SD= 15.3	TC= 19 MS= 11/19 MP= 57.9% SD= 16	TC= 34 MS= 17/34 MP= 50% SD= 16.3	TC= 74 MS= 41/74 MP= 56.6% SD= 15.53
3.Regular Past Tense(ed)	TC= 10 MS= 8/10 MP= 80% SD= 10.3	TC= 11 MS= 9/11 MP= 83% SD= 6	TC= 22 MS= 16/22 MP= 72% SD= 14	TC= 43 MS= 33/43 MP=78% SD= 10.10
4. Relative Pronouns	TC= 11 MS= 7/11 MP= 64% SD= 16.3	TC= 8 MS=6/8 MP=75% SD=14.3	TC= 8 MS= 5/8 MP= 62.5% SD=15.3	TC= 27 MS= 18/27 MP= 67% SD= 15.96
5. Active and Passive	TC= 14 MS= 10/14 MP= 71% SD= 14.3	TC= 16 MS= 12/16 MP= 75% SD= 9	Total:23 MS=15/23 MP= 65% SD=10.3	TC= 53 MS= 37/53 MP= 70% SD= 11.22

### 7.1.2 Normality of Distributions

Figures 7.1 and 7.2 both show the distribution of the learners' scores on the early and late developmental items. The graphs show that the distribution of scores on both early and late developmental items is not normal because most of the scores are bunched on the right side of the graph. The frequency of the total correct scores has made the distribution of early scores skewed. The skewness of the distribution is  $-0.395$ , and the standard error of skewness is  $0.319$ . The ratio of skewness to its standard error is less than  $-1$  ( $p=-1.24$ ).

The skewness of the distribution of the late scores is  $-0.564$ , and its standard error of skewness is  $0.319$ . The ratio of skewness to its standard error is less than  $-1$  ( $p=$

1.77). This indicates that the normality of distributions for both early and late scores is rejected.

Fig. 7.1: Frequency Distribution of Scores on Early Developmental Test Items

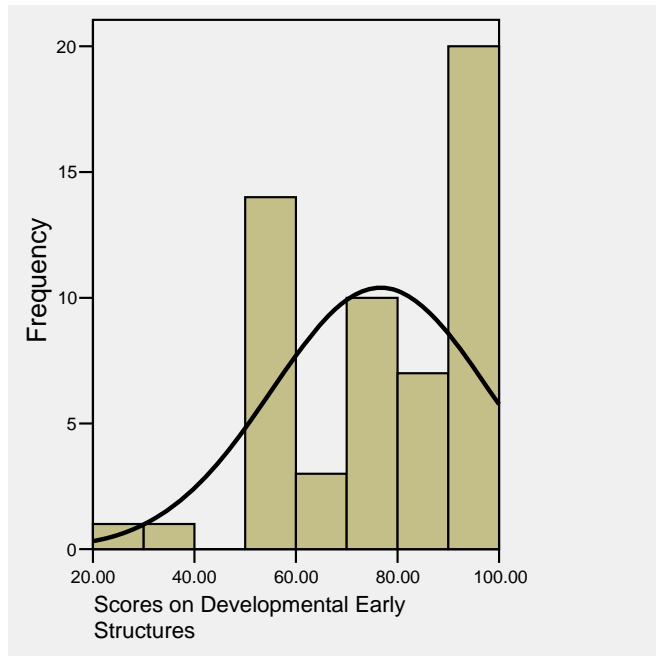
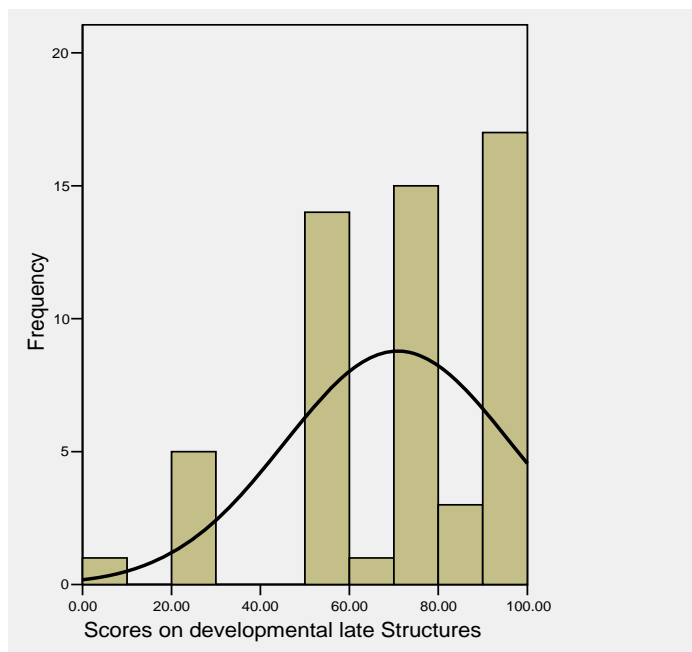


Fig. 7.2: Frequency Distribution of Scores on Late Developmental Test Items



### 7.1.3 Descriptive Statistics for Scores on Early and Late Items

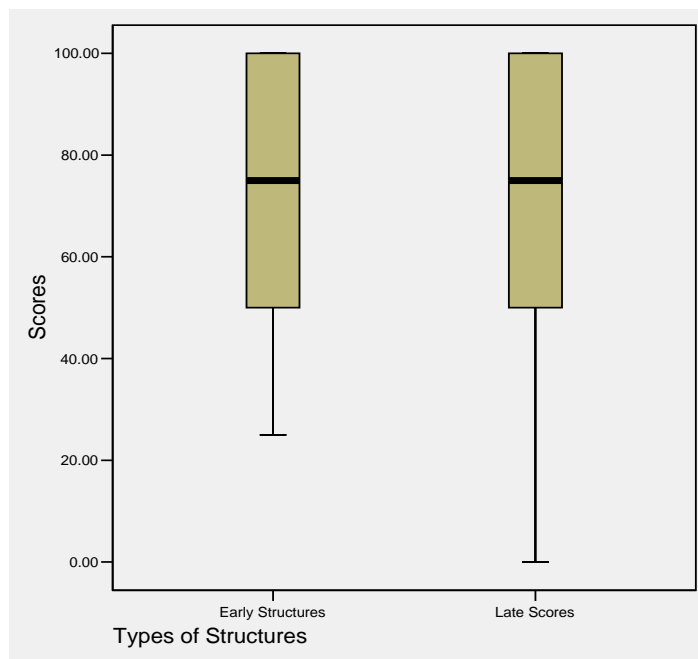
The mean scores for the developmental early items and the developmental late items are 78.21 and 69.64 respectively. The standard deviation of the scores for the developmental early items is 20.21 and for the scores of the developmental late items 25.01, indicating that the scores for the former are more homogenous than the scores for the latter. There is also a substantial difference between the ranges of the two groups (75 and 100 for early and late respectively). The medians for the ‘early’ and ‘late’ structures are 75 for both (see Table 7.3).

Table 7.3: Group Statistics for Scores on Developmental Early and Late Items

Scores	N (Number of the learners)	Mean	Std. Deviation	Median	Range
Developmental Early	56	78.21	20.21	75	75
Developmental Late	56	69.64	25.01	75	100

Fig. 7.3 displays the medians, the inter-quartile range, and the extreme scores of the early and late structures. The boxes include fifty percent of the scores in each distribution. The lower boundary of each box represents the 25th percentile. The upper boundary represents the 75th Percentile. The 25th percentiles, represented by the lower boundaries of the boxes, for both groups are 50. The 75th percentiles, represented by the upper boundaries, for both types of structures are 100. The interquartile range, represented by the vertical length of the box, is 50 for both the early and late developmental items, indicating that the scores in the early developmental items are clustered around the mean. The medians, shown by the black lines inside the boxes, are 75 for both types of structures.

Fig. 7.3: Box-plot for Scores on Developmental Early and Late Items



#### 7.1.4 Tests for the Difference in Means of Scores (Early Developmental versus Late Developmental Items)

A non-parametric, two related sample test, namely the Wilcoxon Signed Rank Test, was performed with the alpha level set at .05. As displayed in Table 7.4, the results show that mean ranks for the scores of the early and late test items are 29.52 and 22.05 respectively. The output indicated that the difference in mean scores for the developmental early and late structures was significant at  $z = -2.07$   $p = .038$  (see Tables 7.4 and 7.5). This clearly shows that the learners scored higher on the early developmental items than on the late items.

Table 7.4: Wilcoxon Signed Ranks

		N	Mean Rank	Sum of Ranks
Early and Late Developmental Features	Negative Ranks	31(a)	29.52	915.00
	Positive Ranks	21(b)	22.05	463.00
	Ties	4(c)		
	Total	56		

a. Early < Late

b. Early > Late

c. Early = Late

Table 7.5: Wilcoxon Signed Ranks Statistics

	Early/Late
Z	-2.07
Asymp. Sig. (2-tailed)	.038

## 7.2 RESULTS OF THE SCORES ON TWO PAIRS OF EXAMPLES

The following two sections describe the results of the comparison of two pairs of features (definite article versus indefinite article and regular past tense versus irregular past tense). The reasons for choosing to look at these two pairs are that they are examples of early and late developmental features, thus the results of the comparison may elucidate the main findings obtained by the comparison of early and late developmental features. Also, there is a literature which has investigated the acquisition of these pairs of features and which can be compared with the present study.

### 7.2.1 Results of the Scores on Definite and Indefinite Articles

#### 7.2.1.1 Descriptive Statistics

The total valid cases for the definite article test items and indefinite article test items are 56 and 74 respectively. The mean score is 70.53 for the definite article items and 53.57 for the indefinite items. The standard deviations for the definite article items and the indefinite article items are 17.99 and 16.80 respectively. Scores of both groups of items range from 25 to 100 (see Table 7.6).

Table 7.6: Group Statistics for Definite and Indefinite Items

	N	Mean	Std. Deviation	Minimum	Maximum
Definite	56	70.53	17.99	25	100
Indefinite	74	53.57	16.80	25	100

### 7.2.1.2 Tests of Difference in Mean Scores on Items

The distribution of scores meets the normality assumption and, therefore, a paired sample t-test was performed. The mean of the scores on the definite article test items was significantly higher than the mean of the indefinite article test items ( $t = 4.97$ ,  $df = 55$ ,  $p = .010$ ,  $p < .050$ ). The learners performed more accurately on definite than indefinite articles.

Table 7.7: Paired Samples Test for Definite and Indefinite Scores

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	def - indef	16.96	25.50	3.40	10.13	23.79	4.97	55	.010

This indicates that the correction of the definite article was more effective than the correction of the indefinite article (refer to Table 7.7).

## 7.2.2 Results of the Scores on Regular and Irregular past Tense Items

### 7.2.2.1 Descriptive Statistics

As shown in table 7.8, the mean score is 78.93 for the scores on regular test items and 85.73 for the scores on irregular test items. The standard deviations for the regular tense and the irregular tense items are 19.64 and 17.04 respectively. Both sets of scores range from 25 to 100.

Table 7.8: Group Statistics for Scores on Regular and Irregular Tense Items

	N	Minimum	Maximum	Mean	Std. Deviation
Regular Past	43	25	100.00	78.93	19.64
Irregular Past	32	25	100.00	85.73	17.04



### 7.2.2.2 Tests for Difference in Means

A paired sample t-test was performed to compare the scores on the regular tense items and the scores on the irregular tense items (see Table 7.9). The output indicated that there was a significant difference in the score means of the regular and irregular test items ( $t = -2.038$ ,  $df = 55$ ,  $p = .046$ ,  $p < 0.05$ ). The learners performed more accurately on the irregular past items.

Table 7.9: Paired- Sample t-Test for Regular and Irregular Tense Items

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Regular and Irregular	3.12500	21.87906	2.92371	11.5118	.09529	.038	55	.046

### 7.2.3 Interactional Analysis

This section deals with two types of interactional analysis:

1. The interaction between the time of correction (i.e. immediate versus delayed) and the type of structure (i.e. early versus late features)
2. The interaction between the type of correction (i.e. explicit versus implicit) and the type of structure (i.e. early vs. late features)

#### 7.2.3.1 Descriptive Statistics for Interaction between Correction Time (i.e. Immediate vs. Delayed) and Structure Type (i.e. Early Structures vs. Late Structures)

Table 7.10 shows the main statistics for the interaction between the time of correction and the development type of structure. It shows that the learners receiving immediate correction achieved higher means than did the learners receiving delayed correction of the 'early' test items. Also, the learners receiving immediate correction of the late test

items scored higher than did the learners receiving delayed correction of the late items.

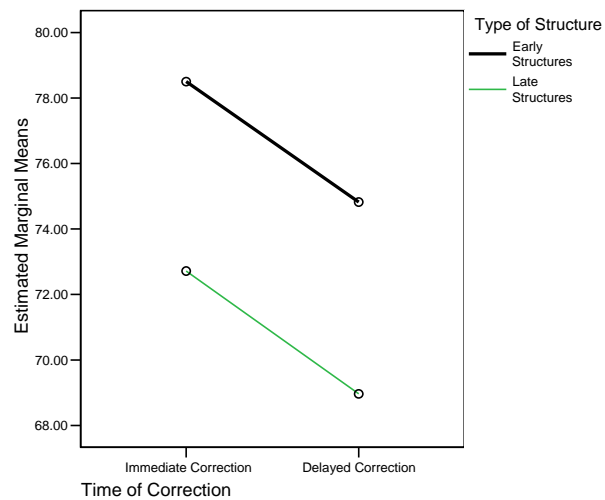
The standard deviations for the test scores on the ‘early’ items (subject to immediate correction) and for test items on the early items (subject to delayed correction) are 22.23 and 20.93 respectively, indicating that they are similarly spread (homogeneous). The standard deviations for the scores on the ‘late’ items (subject to immediate correction) and the scores on late items (subject to delayed correction) are 28.46 and 22.39 respectively, showing that that the scores on the late items are less homogeneous than the scores on the early test items (refer to Table 7.10).

**Table 7.10: Group Statistics for the Interaction**

Early/Late	Immediate/ Delayed	Mean	Std. Deviation	N
Early Developmental Features	Immediate Correction	78.5000	22.23	28
	Delayed Correction	74.8214	20.93	28
	Total	76.6607	21.47	56
Late developmental Features	Immediate Correction	72.7143	28.46	28
	Delayed Correction	68.9643	22.39	28
	Total	70.8393	25.44	56
Total	Immediate Correction	75.6071	25.47	56
	Delayed Correction	71.8929	21.68	56
	Total	73.7500	23.62	112

However, as shown by Fig. 7.4, the two lines representing the developmental early and late structures do not intersect. In fact they are almost parallel. This means that the interaction between the correction time (i.e. immediate versus delayed) and the structure type (i.e. early versus late) is almost non-existent.

Fig. 7.4 Interaction Between Correction Time and Structure Type



### 7.2.3.2 Test of Interaction between Correction Time and Structure Type

The necessary assumption for this test (i.e. the equality of variance assumption) was checked. In order to see whether there is a significant interaction, a  $2 \times 3$  ANOVA test; (i.e. a univariate analysis) was performed. The results were:  $p = .994$ ,  $p > .05$ . Therefore, the null hypothesis that there is no interaction between the type of correction and the type of structure was not rejected, indicating that the effect of the time of correction on the scores for the developmental early and late structures was non-significant (see Table 7.11).

Table 7.11: Interaction Effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1335.214(a)	3	445.07	.793	.500
Intercept	609175.000	1	609175.00	1085.66	.000
Early/Late	948.893	1	948.89	1.69	.196
Immediate/Delayed	386.286	1	386.28	.688	.409
Early/Late * Immediate/delayed	.036	1	.036	.000	.994
Error	60599.786	108	561.10		
Total	671110.000	112			
Corrected Total	61935.000	111			

### 7.2.3.3 Descriptive Statistics for Interaction between Correction Type (i.e. Explicit vs. Implicit) and Structure Type (Early vs. Late)

Table 7.12 shows the descriptive statistics for the interaction between the type of correction (i.e. explicit vs. implicit) and the type of structure (i.e. early vs. late). It shows that the learners receiving explicit corrections scored higher than did the learners receiving implicit corrections on early structures. However, the learners receiving implicit corrections on the late structures scored higher than did the learners receiving explicit correction on the late structures.

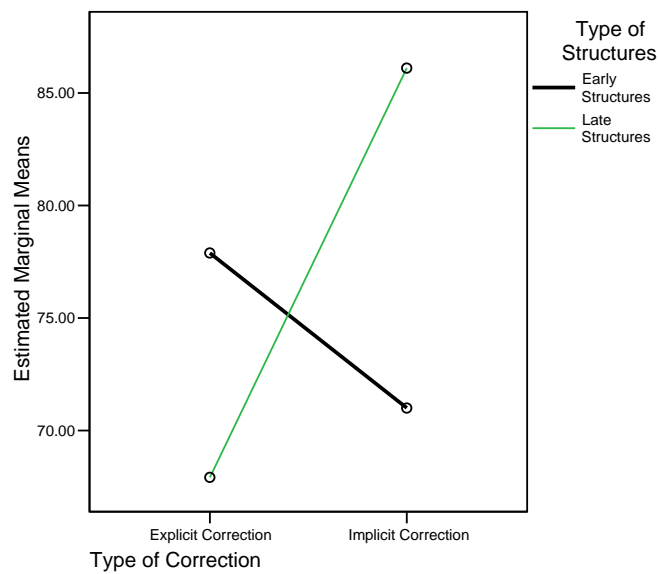
Table 7.12: Group Statistics for the Interaction

Early/Late	Explicit/ Implicit	Mean	Std. Deviation	N
Early Structures	Explicit Correction	77.8913	21.59859	46
	Implicit Correction	71.0000	21.03965	10
	Total	76.6607	21.47580	56
Late Scores	Explicit Correction	67.9149	24.66280	47
	Implicit Correction	86.1111	25.34484	9
	Total	70.8393	25.44854	56
Total	Explicit Correction	72.8495	23.61049	93
	Implicit Correction	78.1579	23.81004	19
	Total	73.7500	23.62145	112

The standard deviations for the scores on the ‘early’ test items (subject to explicit correction) and the scores on the ‘late’ test items (subject to explicit correction) are 21.59 and 21.03 respectively, indicating that the scores on both items are spread equally. The standard deviations for the scores on the ‘early’ and ‘late’ items (both receiving implicit correction) are 24.66 and 25.34 respectively, showing that the scores on both structures are spread almost equally (refer to Table 7.12).

Moreover, as shown by Fig. 7.5, the two lines representing early and late structures intersect each other. This means that there is an interaction effect between correction type and structure type.

Fig. 7.5 Interaction Between Correction Type and Structure Type.



#### 7.2.3.4 Test of Interaction between Correction Type (explicit vs. Implicit) and Correction Type (Early Structure vs. Late Structures)

A 2×3 ANOVA test; (i.e. a Univariate Analysis) was performed. The results were:  $p = .034$ ,  $p < .05$ . Therefore, the null hypothesis that there is no interaction between the type of correction and the type of structure was rejected, indicating that the effect of the type of correction on the scores for the early and late developmental structures was significant (see Table 7.13).

Table 7.13: Interaction Effect

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3839.995(a)	3	1279.998	2.380	.074
Intercept	361075.190	1	361075.190	671.247	.000
EL	103.748	1	103.748	.193	.661
Explicit/Implicit	502.903	1	502.903	.935	.336
EL * Explicit/Implicit	2476.652	1	2476.652	4.604	.034
Error	58095.005	108	537.917		
Total	671110.000	112			
Corrected Total	61935.000	111			

### 7.3 DISCUSSION

To answer research question four, a comparison was made between the learners' scores on the test items that measured early developmental features and the learners' scores on the items that measured late developmental features. The study produced the following findings related to Research Question Four:

1. There was a significant difference between the effect of correcting early developmental errors and late developmental errors. ( $p = .038$ ). The correction of definite article (an early feature) was significantly more effective than the correction of indefinite article (a late feature). Also, the correction of the irregular past tense (an early feature) was more effective than the correction of regular past tense (a late feature).
2. The interaction between correction time and structure type (i.e. early vs. late features) was not significant. However, that between correction type and structure type was statistically significant. In other words, the effect of the timing of correction was the same for both early and late errors, but the effect of type of correction (i.e. explicit vs. implicit) was different for developmental early and late features.

#### 7.3.1 The effects of corrective feedback on early and late developmental features

There has been very little research that has compared the effect of correcting features that are acquired early and late. Nevertheless, research has shown that instruction is not likely to have any significant impact if structures that belong to later stages of language learning are taught to the learners who are at very early stages (Lightbown, 1983; Pienemann, 1986; Ellis, 1989).

One obvious explanation for this finding is Pienemann's (1984; 1989) teachability hypothesis. This hypothesis predicts that learning can only take place if the learner's interlanguage is close to the point when the structure to be taught is acquired in the natural setting. Pienemann (1984) studied the acquisition of German word order among Italian children. He showed that instruction in the word order of structure

requiring subject verb inversion was successful in the case of those learners who had reached the stage immediately preceding the stage where this word order rule could be acquired but not successful in learners who had not reached this stage. Pienemann, argued that teaching should be restricted to the learning of items for which the learner was ready. In other words, form focused instruction will only succeed in teaching learners new developmental structures if learners are ready to acquire them.

Another way of explaining why the corrective feedback was more effective with the early than the late features can be found in Schmidt's (1990) account of the role of consciousness in L2 acquisition. Schmidt identifies two kinds of consciousness: (1) consciousness as noticing and (2) consciousness as understanding. His claim is that consciousness as noticing is a requirement in order for acquisition to take place although in subsequent papers he somehow modified his claim to say that it may be not a requirement but it certainly enhances acquisition. However, he does not claim that consciousness as understanding is necessary for acquisition although again he does argue that understanding makes learning more likely. This can explain why the correction of developmentally early features has a great effect. Correction assists the process of noticing and in the case of the explicit corrective feedback also understanding. Learners may be more likely to notice and understand those features that are acquired early

However, the results of the study showed that correction of some of the late developmental errors was effective. Table 7.14 compares the numbers of learners who scored higher on the early and the late developmental features. This shows that more learners scored higher on the early items than the late items in all three correction conditions. It should be noted, however, that in each condition there were a number of learners who scored higher on the late features. For example, in the case of the immediate explicit corrective feedback there were 12 learners who scored higher on the early features but 7 who scored higher on the late features. This indicates the need for care in assuming that corrective feedback is more effective when it is directed at early than late developmental features. Clearly, in this study, the feedback enables some of the learners to achieve greater success with the late features. One possible explanation for why some learners benefited more on the late features may simply

have been that it was these features that they received feedback on (i.e. they did not receive any feedback on the early features). If this is the case, then, it is possible that corrective feedback works, to some extent at least, irrespective of whether the feature is an early or late one. Thus, at best, we can only say that there is a tendency for learners to benefit more from corrective feedback when it is directed at early features.

**Table 7.14: Early and Late Features for Individuals**

Group	Number of learners whose mean was higher for Early	Number of learners whose mean was higher for Late
Immediate Explicit N= 28	12 (43%)	7 (25%)
Immediate Implicit N=28	13 (46%)	7 (25%)
Delayed Explicit N=56	22 (39%)	17 (30%)

The overall results for the early and the late developmental features was reflected in the results for two pairs of structures; 1) definite versus indefinite articles and 2) irregular and regular past tense. We will now briefly consider each of these.

Research into the acquisition of English articles has produced somewhat mixed results. Early research findings (Huebner, 1983; Master 1997; Parrish, 1987; Thomas 1989) suggest the definite article is acquired before the indefinite article. Liu and Gleason (2002), however, conclude the opposite: in this study learners acquired accurate control of the indefinite article first.

It has generally been hypothesized that children possess an innate tendency to distinguish specificity from non- specificity. Presumably, this tendency emerges from very early age as part of their cognitive development (Brown, 1973; Maratsos, 1976; Cziko, 1986 cited in Butler, 2002). This observation can be extended to acquisition of articles among adult second language learners. The ability to distinguish specificity from non-specificity already exists among adult second language learners. In other



words, the semantic concepts of definiteness and indefiniteness already exist. What learning does is to connect these semantic concepts to the external attributes (article forms, 'the' and 'a').

The learners in this study produced article errors associated with mainly two classes of noun phrase contexts. These are:

1. The context in which the noun phrase is referred to specifically and about which the hearer has some knowledge (e.g. Carson stole sixty thousand Dollars of his clients' money. He lost *the* money in a casino in France.) and
2. The context in which the noun phrase is referred to non-specifically (by a speaker) and about which the hearer has no knowledge (e.g.... and he bought *a* second hand car.).

What the results of the present study show is that the correction of definite article errors was more effective than the correction of indefinite article errors. The corrective feedback was more effective in helping learners use 'the' in noun phrases that had specific reference and were part of the hearer's knowledge than in helping them use 'a' in noun phrases that were non-specific and not part of the hearer's knowledge. Overall, there were 56 corrections directed at definite article errors and 74 directed at indefinite errors. In other words, the learners made more errors with the indefinite article. The overall accuracy score on the tailor-made tests was 72% for the definite articles and 56.6% for the indefinite articles.

A number of possible explanations can be suggested for this finding. It is possible that definite articles are more perceptually salient than indefinite articles (i.e. 'a' may be less salient to learners than 'the'). It is possible that the findings simply reflect the fact that the definite article is learnt at earlier stage of development and thus the intermediate level learners in the present study were not fully ready to acquire this feature even when feedback was given on it. It is also possible L1 transfer compounded the learners' lack of readiness to learn this feature. The indefinite in Farsi has a very different function from its function in English whereas the definite

article in Farsi has a similar function to its function in English (see also Chapter Two section 2.2). Therefore, L1 transfer may help explain why lower scores were obtained for items testing the indefinite article.

Research into the acquisition of irregular and regular past tense has also produced somewhat mixed findings. Some studies found that regular past tense is learned before the irregular (Dulay and Burt, 1975; Larsen-Freeman, 1975; Hakuta 1974). Other studies (e.g. Krashen, 1977) found that irregular past form is learned first. Still other studies (Andersen, 1978) found that group scores (scores obtained by a group of learners) showed that irregular past form is learned before regular, but learners' individual scores showed considerable variation in the order of acquisition. Overall, however, there appears to be more evidence pointing towards irregular being acquired before regular past tense.

Overall there were 32 corrections directed at irregular past tense errors and 43 directed at regular past tense errors. However, the test score for irregular was 88% while for regular it was 78%. It would appear that, as for the definite and indefinite article, it is the inherent difficulty of the two structures that determines learners' relative performance on them in the tests rather than the frequency of the correction. There are a number of reasons for believing that irregular forms may be easier to acquire than the regular form. First, irregular forms occur very frequently in the input because they are among the most commonly used verbs in English (9 out of 12 of the most common verbs, according to the Longman Grammar of Spoken and Written English (Biber, Conrad, and Reppen, 1999, p. 375) are irregular). Also, whereas irregular forms involve item learning, a relatively undemanding cognitive process, the acquisition of regular verbs requires the development of the abstract underlying rule.

### 7.3.2 Interaction between Correction Type and Structure Type

No interaction was found between the time of the corrective feedback (immediate versus delayed) and accuracy in early and late developmental features in the tailor made tests. The most likely explanation for this is that offered earlier for why no overall difference was found in the effect of the timing of the corrective feedback on

acquisition – namely, that the delayed feedback functioned in very much the same way as the immediate feedback because it presented learners with their erroneous utterances before offering corrections of them.

An interaction was found between the type of correction (implicit vs. explicit) and the results for the early and late developmental features. Whereas explicit corrective feedback was more effective than implicit CF in the case of the early structures, the opposite was true in the case of the late structures (i.e. the implicit CF was more effective). This can be explained in terms of Krashen's (1982) comments about which structures are learnable as explicit knowledge. Krashen argues that it is only possible for learners to 'learn' simple and portable rules (e.g. 3rd person –s), not complex rules (e.g. inversion in interrogatives). In the current study, explicit CF proved much more effective in helping learners learn structures that are typically acquired early (and thus can be hypothesized to be 'easy'). It was much less effective in teaching more complex structures. This was probably because the learners found the metalinguistic explanations for these structures difficult to understand. Implicit CF (i.e. feedback that simply provides the learner with the correct form) worked better with the late acquired structures.

#### 7.4 SUMMARY

The correction of early developmental features is more effective than the correction of late developmental features in terms of learning outcome. The explanations for this finding is Pienemann's (1984; 1989) teachability hypothesis and Schmidt's (1990) account of the role of consciousness in L2 acquisition. As two pairs of examples for early and late developmental features, Definite and indefinite articles as well as regular and irregular tense forms were compared. The results of the comparison showed that 'the' is learned more accurately than 'a', and also irregular tense is learned more accurately than regular tense. This further confirms the effectiveness of early features over the late features. Possible explanations for better score on 'the' may be that 'a' is more difficult which may be due to perceptual saliency and language transfer. Some reasons for the easier learning of irregular forms than regular form may be frequency and item learning. However, the results show that

a number of individuals scored better on the late features too. This indicates the need for care in assuming that corrective feedback is more effective when it is directed at early than late developmental features.

There was no interaction between the time of correction and the type of structure. One suggested reason for this is the fact the delayed feedback function in very much the same way as the immediate feedback because it presented learners with their erroneous utterances before offering corrections of them. However, there was an interaction effect between the type of correction and the type of structure suggesting that explicit correction is more effective in the case early developmental features, whereas implicit correction is more effective in the case late developmental features. This was probably because the metalinguistic explanations for these structures were difficult to understand.

## CHAPTER EIGHT

### CONCLUSIONS, IMPLICATIONS, and LIMITATIONS

#### 8.1 INTRODUCTION

This research was a quasi experimental study which investigated extensive error correction as opposed to intensive error correction. Extensive error correction is when correction is directed at a number of features. Intensive error correction is when correction is directed at one particular grammatical structure over time. However, teachers may not have the luxury of looking at one structure for a long time, because learners have to master so many structures in a limited period of time. It is not very practical to design studies which focus on only one particular structure for a long time. From a pedagogical point of view, extensive feedback is of greater value, because it is more practical and conforms to the principles of communicative language teaching. This study, similar to Loewen (2002), looked at extensive corrective feedback. However, whereas Loewen's study was in a classroom context, this study was situated at a laboratory context.

#### 8.2 SUMMARY AND CONCLUSIONS

Research question one investigated whether there is a difference in learning between the learners who are immediately corrected and those who are corrected later. The findings show that immediate error correction and delayed error correction are equally effective in drawing the learners' attention to discrepancies between their interlanguage and target language forms. A number of reasons were suggested (1) in both treatments learners received error correction in meaningful contexts, (2) the negotiation between the learner and the interlocutor made errors salient enough to increase their awareness, (3) feedback increased salience (4) negotiation led to attention (5) individualized attention was effective. Probably the main reason why there was no difference in the immediate and delayed correction was that in both treatments learners had available their erroneous utterances before corrections were

provided. In other words, the researcher in both treatments recalled the erroneous utterance that the learner had made.

Research question two attempted to determine whether there was a difference in the effects of explicit correction and implicit correction on language learning. The answer was 'yes'. Explicit correction was significantly more effective than the implicit correction. A number of reasons for this were suggested: (1) explicit correction created more attention, (2) the fact that learners were explicitly corrected on their errors created a contrast with the form in their interlanguage, (3) the provision of the correct form in implicit correction may not have been effective because it was less clear to learners what was wrong with their erroneous utterance and without such understanding, hypothesis revision was not possible, and (4) learners most likely perceived the explicit corrections as corrective feedback requiring them to correct their errors whereas this was not the case with the implicit feedback.

Research question three examined whether there was a difference in the effects of error correction on the learning of morphological and syntactic features. The results indicated that correction of the morphological errors was significantly more effective than correction of the syntactic errors. It was suggested that morphological features were easier to learn because they were easier to understand metalinguistically and easier to acquire, and also because many of them involved item learning, whereas the syntactic features entailed system learning. The interactions between the correction times and manner (immediate versus delayed and explicit versus implicit) with the structure type (syntactic versus morphological) were shown to be non-significant. In other words, timing and manner of correction cannot be considered a factor in learning for morphological as opposed to syntactic features when individualized attention, interaction and saliency are involved.

Research question four examined whether there was any difference between the effects of the correction on the early and late developmental errors. The results indicated that the correction had a significantly greater effect on the learning of early developmental errors than late developmental errors. This can be explained in terms of learners' readiness to notice and understand early features. There was no

interaction between the time of correction and the type of structure, indicating that the effect of the timing of correction was the same for both early and late errors. Again, the main reason is that the erroneous utterance was repeated in the delayed correction before it was corrected by the researcher. However, there was an interaction effect between the type of correction and the type of structure, indicating that learners learned the early features better when explicitly corrected and the late features better when implicitly corrected. This is probably because learners found the metalinguistic explanations of the late structures difficult to understand.

### 8.3 THEORETICAL IMPLICATIONS

In general, it cannot be argued that the findings of this study are consistent with the findings of previous studies and with theoretical arguments claiming that focus on form is beneficial to learners' second language acquisition. The reason for this is the fact that the absence of a control group in this study does not lead one to be certain about the absolute effectiveness of error correction. As it is the case, it can only be said that one type of corrective feedback had a greater effect than another type- i.e. comment on their relative effectiveness.

The findings of this study in particular support the importance of saliency (Slobin, 1985) in the acquisition of input. It can be argued that saliency played a determining role in the results obtained in the present study. For example, metalinguistic corrective feedback increased salience and thus benefited the learners. Moreover, the interaction between the learner and the interlocutor made errors salient enough to increase learners' awareness. The results of this study are compatible with the view that perceptual saliency plays an important role in second language acquisition. However, this study did not obtain any independent measure of the saliency of the different levels of feedback.

The findings of this research lend support to Long's updated version of Interaction Hypothesis (1996, p.454) in which he proposes that the environmental contributions

(i.e. error correction) to acquisition are mediated by selective attention and the learner's developing L2 processing capacity. He argues that negative feedback (error correction in our case) obtained during negotiation work may facilitate L2 grammar development. In the present study, one possible reason for the fact that some treatments were more effective than the others is that the correction of errors took place within negotiation. Since both immediate and delayed corrections were contextualized and meaningful, it is possible that they were equally effective in enabling learners to adjust their interlanguage. However, contrary to Long's belief in the effectiveness of implicit corrective feedback (recasts), this study indicates that it is explicit feedback that best mediates selected attention and acquisition.

Swain (1985) has proposed that when learners are required to produce pushed output, they are forced to revise the hypotheses in their interlanguage. Considering the previous research on modified output (i.e. uptake with repair), the results are somewhat mixed: Some studies show that there is a relationship between modified output and acquisition and that successful uptake predicted scores on recognition tests (Loewen, 2005) and some others show that there is no relationship (Smith, 2005). Therefore, it is not clearly known under what conditions modified output relates to acquisition. The present study found no evidence that the pushed output that the learners produced in the corrected exchanges actually contributed to learning. In other words, the present study demonstrated that uptake with repair did not seem to have any impact on the participants' actual performance in the tests.

The results also lend indirect support to Schmidt and Frota's (1986) Noticing Hypothesis. It is as a result of noticing that learners are able to process the corrective feedback. Also, it is as a result of understanding their errors that learners are more likely able to restructure their interlanguage. Explicit error correction creates more understanding and thus facilitates learning better than implicit error correction.

There are controversies among researchers on which structures are learnt according to item learning and which structures are learned according to system learning. Learners in the present research gained higher scores on the morphological features than they did on the syntactic structures. Item learning entails the internalisation of specific



exemplars of grammatical features whereas system learning involves constructing an abstract underlying rule from the input. The fact that correction was more successful in the case of the morphological features suggests that corrective feedback may be more effective in promoting item than system learning. However, this is speculative and in need of further study.

#### 8.4 PEDAGOGICAL IMPLICATIONS

The main finding with regard to pedagogical implications is that explicit correction on the whole is more effective than implicit correction with one caveat; that is, explicit correction seems to work very well for morphological and not so well for syntactical features. The main implication of this study is that teachers in the context of communicative activities should not be apprehensive about using explicit correction (i.e. providing metalinguistic information). Whenever the right opportunity arises, teachers are advised to provide learners with metalinguistic feedback on their errors. In order to understand what the right moment for correcting errors explicitly is, I will review the conditions under which the successful explicit error correction took place in the present study. There were four conditions involved in both types of corrections: (1) error correction took place in meaningful interactive contexts, (2) error correction took place in response to the learners' output, (3) error correction took place as briefly as possible, and (4) correction took place on an individualistic basis. However, explicit correction had one additional characteristic not found in implicit correction: It provided metalinguistic feedback. It can be assumed, therefore, that the effectiveness of explicit correction is the result of the interaction of the previous four conditions and the metalinguistic feedback.

Another implication of this study is that language teachers have no reason to neglect immediate error correction in favour of delayed error correction any more than they should neglect delayed error correction in favour of immediate correction. On the basis of these results, teachers are advised to use both types of correction depending on their goals of instruction. Teachers do not need to be frightened of doing

immediate correction when there is a need for such a correction. For example, if they want to emphasise fluency in the context of a communicative activity, it might be better if they correct learners in a delayed fashion. On the other hand, if they are less concerned with fluency and, instead, intend to focus on accuracy in the context of a communicative task, immediate correction would perhaps be the right choice. However, irrespective of timing of the feedback second language teachers should take into consideration the learners' communicative need for feedback to enable them to bridge the gap between their existing knowledge of structures and the target forms. The communicative need of learners can only be established in interaction, and learners are much more likely to test their interlanguage hypotheses against the target language when involved in interaction.

Moreover, teachers should be aware that the type of error that needs correction also plays a crucial role in the effectiveness of explicit and implicit correction. The evidence from this study indicates that explicit metalinguistic feedback works better with easy rules than hard rules. In contrast, implicit feedback is more effective with hard rules (see Tables 6.1 and 6.2). Thus teachers need to be selective in deciding which type of error correction to employ, taking into account the learner's developmental readiness.

Although we found that corrective feedback worked better for morphological features rather than syntactic features, there were exceptions. There were some syntactic features for which the corrective feedback was effective and there were some morphological features for which the corrective feedback was not effective. The best recommendation that can be given to teachers is that they should take into account the learners' readiness to learn the features they have problems with. The choice of structure for correction depends mainly on the learner's developmental readiness. If the learner is a relatively advanced learner, it would probably be better to focus the correction on complex syntactical problems because these are the problems that learners are likely to have.

The implications of the third and fourth research questions are that teachers need to be aware that corrective feedback is more likely to be effective with some linguistic

features than with others. As the result of corrective feedback learners may be able to revise their hypotheses about some of their errors but not others and the teacher should not necessarily expect error correction to be uniformly successful. They must be prepared to recognize that it is sometimes effective and sometimes not effective. It will also be useful if they are aware of the factors that are likely to influence whether the corrective feedback works or does not. One such factor is the linguistic difficulty of the feature. If the feature is beyond the learners' current developmental stage, the corrective feedback is unlikely to work. Therefore teachers should have some sensitivity as to what kind of errors their correction is likely to have an impact on and which kind it will not.

Teachers should know that saliency will assist learning provided that the structures are not too difficult or beyond the learners' developmental level. The fact that there was no interaction evident between the time and type of correction and the type of structure (i.e. morphological vs. syntactic) probably indicates that saliency neutralizes the effect of the timing and type of corrections the learners received on the type of structures which were corrected.

The type of correction that may be optimal for syntactic features appears to be different from that which works for morphological features. This study showed that implicit correction (recasts) was more effective in correcting complex structures, most of which were syntactic items. Teachers can again correct learners while they are talking, but this time they can provide feedback to them by recasting their erroneous utterances.

## 8.5 LIMITATIONS

The study reported in this thesis contributes to our understanding of what errors to correct, how to correct errors, and when to correct errors. However, there are number of limitations of the study.

The main limitation of this study was that there was no control group. That is, there was no group that completed the reconstruction tasks but did not receive any form of corrective feedback. If such a group had been included, it would have been possible to establish whether the corrective feedback the treatment group received enabled them to demonstrate knowledge of the corrected item in the tailor-made tests. Without such a control group it is not possible to claim that the corrective feedback resulted in acquisition, only that one type worked better than another in terms of the tailor-made tests.

This study was cross-sectional in nature, affording only a very static view of second language acquisition. No attempt was made to see the effect of correction on errors made by learners at different stages of development. Error correction in this study does not give us a clear understanding of how error correction helps learners develop knowledge of an L2 structure over time. The issues such as timing of correction, manner of correction, and type of correction are so broad and complex that they can not be explained comprehensively and inclusively by a limited study such as the present one.

Also, we do not really know whether the errors that learners made were in actual sense errors or they were just mistakes. This is related to what we mean by acquisition. There two senses of acquisition. One is the acquisition of new linguistic forms and the other is gaining a greater control over partially acquired forms. We do know whether the error was the product of absence of knowledge or lack of control over partially acquired knowledge. However, in this study any deviation from a target language norm was considered an error.

Moreover, there were other limitations due partly to the intrinsic nature of the study and partly to the lack of previous experience of the researcher. Each learner produced only a limited number of errors which were corrected and tested later by tailor-made tests. In other words, there were a limited number of error correction episodes. This in turn led to a limited number of test items in the tailor-made tests. The greater the number of test items the more reliable the tailor-made tests would have been. Having a limited number of items caused two problems. First, it did not give a precise account

of the learners' competence. Second, intervals between the scores were considerable. However, increasing the number of error correction episodes would have harmed the communicativeness of the reconstruction tasks because of the interruptions they would have got from the researcher. Perhaps we could increase the number of error correction episodes in some other way. For example, we could increase the number of reconstruction tasks in order to increase error correction episodes. This would have the advantage of tailor-made tests with more test items leading to a better evaluation of the learners' knowledge without necessarily increasing the density of the corrections.

Another limitation of this study was the construct validity of the tests. Recognition tests do not measure procedural language use. The tailor-made tests consisted of multiple choice items. They tested recognition under a very controlled fashion. They did not test production. This makes it very difficult to compare the results of this study with other studies where production measures were employed.

Finally, this research was a laboratory study, and as with all laboratory studies, there are issues as to what extent the results obtained would have been obtained in classroom situations. Such studies have limited applicability in comparison with classroom studies. In the present study, corrective feedback was given to learners on an individualized basis, whereas in a normal classroom, the teacher has to cope with a number of students. It is possible that error correction is less salient to learners in a classroom context than in one-to-one situations in a laboratory setting.

## 8.6 SUGGESTIONS FOR FURTHER RESEARCH

What are needed are more systematic and fine-grained analyses, which take into account different levels of time and types of correction as well as a broader range of features. We need to know to what extent the effectiveness of error correction may be dependent on time and manner of correction as well as the type of structure and general proficiency of learners. This would in fact help us to form a clearer picture of the role of the timing of correction and the manner of correction on the learners'

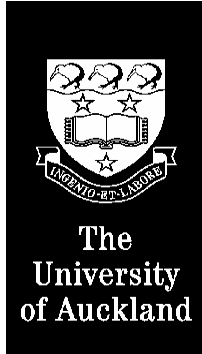
learning across a range of morphological and syntactic features. Ultimately, such research may aid us to build a complete theory of error correction.

Also, the present research included only two levels of manner of correction: explicit and implicit. There can be an expandable range of focus on form possibilities to include various levels of implicitness and explicitness that are found in real classroom situations. A continuum showing various levels of explicitness and implicitness has been presented in Doughty and Williams (1998) that shows focus on form ranges from the more implicit feedback (like clarification requests) to the most explicit (like traditional grammar teaching). A further study of the effect of such variables on learning will provide us with a better understanding of the role of explicit and implicit feedback in second language acquisition. The implicit corrective feedback in the present research was recast and the explicit corrective feedback was metalingual explanation. There could be a range of other alternatives for implicit correction. For example if instead of recast, requests for clarification were used, the results would perhaps been different to what was shown in the findings because learners may have a better chance to self-correct themselves if they received phrases like 'Excuse me?'. Thus further research is needed to investigate the effects on learning of a wider range of types of explicit and implicit corrections.

The present study investigated the effects of different types of error correction on the learning of intermediate proficiency level learners. Thus the results of this study relate to learners of a particular proficiency level. It is possible that the effects might be different for learners of different proficiency levels. For example, the effects of implicit error correction might be more positive for beginner level learners or the effects of explicit error correction might be even more positive with advanced level who it could be hypothesised would be more open to metalinguistic type explanations. Thus further research could investigate whether there is a correlation between the proficiency level of learners and the effectiveness of different types of corrective feedback.

## APPENDICES

### APPENDIX A1



Department of Applied Language  
Studies and Linguistics  
The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

#### PARTICIPANT INFORMATION SHEET

Title: The Effect of Feedback on Language Learning

To: Upper- intermediate students in English

My name is Azizollah Dabaghi. I am a PhD student at the Department of Applied Language Studies and Linguistics, the University of Auckland. I am doing research to find out the effect of feedback on language learning among Iranian adult language learners. I want to do this because it will help future language teachers, researchers, and learners.

You are invited to participate in my research and I would like your help very much. As part of my research, I would like to have 40 minutes of your time for two different sessions. In both sessions, I will ask you to complete an identity form and do some language activities like talking and reading. Your conversation will be audio taped.

You may say yes or no to this study. It is your decision. If you say yes and later do not want to participate, you can tell me to remove your name. You may change your mind until 01 September 2003 without any reason. If you want to help me in this study, please sign a consent form and give it to me. All information will remain confidential to the researcher and your name will not be used in the final report. Your relationship with the school will not be affected by your participation or non-participation.

In return for the help given by you and other participants in this research, two free grammar classes will be offered.

Thank you very much for your time and help in making this study possible. If you have any questions, or if you want to know more, please do not hesitate to contact me at:

Department of International Relations  
Isfahan University

Hezar jerreb Road  
Isfahan  
Iran  
e-mail: azizollahd@hotmail.com

My supervisor is:

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Professor Rod Ellis  
Institute of Language Studies and linguistics  
The University of Auckland  
Private Bag 92019  
Auckland  
Tel: 3737-7999 Ext. 84876

For any queries regarding ethical concerns please contact:  
The Chair, University of Auckland Human Subjects Committee, the university of  
Auckland Research Office-Office of the Vice Chancellor, Private bag 92019,  
Auckland Tel. 373-7999 ext. 7830.

**APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS  
COMMITTEE on 13 August 2003. for a period of 3 years , from 15/Aug/2003 Reference  
2003/242.**



## APPENDIX A2

### Consent Form for Principal



Department of Applied Language  
Studies and Linguistics  
The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

#### ***THIS CONSENT FORM WILL BE HELD FOR A PERIOD OF SIX YEARS***

**Title:** The Effect of Feedback on Language Learning

**Researcher:** Azizollah Dabaghi

I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have them answered.

I understand that I may withdraw my school or any information traceable to my school at any time up to 30 October 2003 without giving a reason. I also understand that all the information I provide is confidential.

- I understand that participation/non participation will not affect the relationship of the students with the school.
- I agree that my school take part in this research **Y** ☐

Signed:

Name:  
(Please print clearly)

Date:

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS  
ETHICS COMMITTEE on 13 August 2003 for a period of 3 years, from  
15/Aug/2003 Reference 2003/242

## APPENDIX B

### **General Information Sheet**

The information in this questionnaire will be kept confidential, and will be used for research evaluation only. Please answer these questions as carefully as possible.

**1) What is your name?**

---

**2) Are you male or female?**

---

**3) How old are you?**

---

**4) Where were you born?**

---

**5) What is your native language?**

---

**6) What is your current education level? (Please circle)**

School      Guidance School      High School      Undergraduate      Postgraduate

---

**7) How long have you been learning English?**

---

**8) Where did you learn to speak English?**

---

**9) Have you been overseas before? If yes, where?**

## APPENDIX C1

### Britain's Unluckiest Criminal

*Everybody in the small town of Thornaby, in the north-east of England, had always thought that local businessman Edward Carson was an honest man. But when Carson lost all his money after a series of bad investments, he decided it was time to do something.*

Carson stole £60,000 of his clients' money and took an aeroplane to Monte Carlo, in the south of France, where he planned to get back the money he had lost by playing roulette. However, the casinos became suspicious of a man with so much cash and did not accept his bets. Carson returned to England.

Still thinking that gambling was the answer to his problems he went to Doncaster races, put £10,000 on a horse called Lucky Seven. Sadly, the horse was certainly not lucky, and finished last in the race!

Carson then invested the rest of his money in a travel company. A few days later the company collapsed. Carson had lost everything.

He used his last £1,000 to buy a second-hand car. He decided to kill himself by driving off the cliffs near his home town. Just before the cliffs, a police officer stopped him for speeding. It was enough to make Carson think that perhaps he wasn't so unlucky after all. He told the police officer everything, and Carson was arrested.

At his trial, the judge gave him just one month in prison: he said Carson had probably suffered enough already.

## APPENDIX C2

### Diamonds are forever

‘Diamonds,’ sang Marilyn Monroe in the film *Gentlemen Prefer Blondes*, ‘are a girl’s best friends.’ You might not agree, but we can be sure of this: diamonds are not only the hardest substance in the world; they are also the most expensive. A single diamond cost \$16.5 million when it was sold in Geneva in 1995!

Diamonds are found in a number of countries including Australia, South Africa, Brazil and The Russian Federation. In fact, there are two types of diamond; colourless diamonds (about 25% of those found) are the hardest and are often made into jewels. Black diamonds – the remaining 75% - are usually used by industry. Industrial diamonds are also produced artificially.

The largest diamond in history is the Cullinan diamond. It weighed 620g and was mined in South Africa in 1905. It was bought by the Transvaal Government for £150,000, and then it was presented to the King of England, Edward VII. The diamond was cut into smaller jewels, which are now part of the British Crown Jewels, which belong to the Queen of England and are kept in the Tower of London.

Diamonds are also used for decoration. Between 1885 and 1917, the Russian jeweller Peter Carl Faberge made a number of decorated Easter eggs for the tsars and their families. The most valuable of them is decorated with more than 3,000 diamonds. It was sold at Christie’s, Geneva, Switzerland for \$5.5 million.

APPENDIX D  
THE SMOG CONVERSION TABLE

Total Polysyllabic Word Counts	Approximate Grade Level
0-2	4
3-6	5
7-12	6
13-20	7
21-30	8
31-42	9
43-56	10
57-72	11
73-90	12
91-110	13
111-132	14
133-156	15
157-182	16
183-210	17
211-240	18

APPENDIX E  
Passage Questions

Seven questions for you to talk about the Britain's Unluckiest Criminal
---

1. What made Edward Carson decide to steal his clients' money?
2. How did he go to Monte Carlo?
3. Why didn't the casino accept his bets?
4. What happened when Carson returned to England?
5. What happened after he invested his money in a travel company?
6. How did he want to kill himself?
7. Do you know any unlucky person like Carson? If so can you tell me about them?

## APPENDIX F1

### Tailor-made Test

Name: -----  
Immediate/Implicit

Treatment:

Date:

Passage: Diamonds...

Directions: Questions 1-6 are incomplete sentences. Beneath each sentence you will see four words or phrases, marked (A), (B), (C), (D). Choose one word or phrase that best completes the sentence. Then, on your Answer Sheet, fill in the space that corresponds to the letter of the answer you have chosen:

(1) We have two kinds of diamonds. One kind is colourless and ...is black.

- (a) another
- (b) the other
- (c) others
- (d) other

(2) The diamond weighted 620 ...

- (a) gram
- (b) grams
- (c) both
- (d) all

(3) It was cut pieces.

- (a) into
- (b) to
- (c) in
- (d) of

(4) It was presented to the king of England, Edward ...

- (a) Seven
- (b) Seventh
- (c) the Seventh
- (d) all

(5) One of my uncles ...a doctor.

- (a) he is
- (b) is
- (c) is he
- (d) both, a and b

(6) Every body ... to be rich.

- (a) liking
- (b) like
- (c) likes
- (d) is liking

## APPENDIX F2

### Tailor-made Test

Name

Immediate/Explicit

Date:

Passage: Diamonds.....

Directions: Questions 1-5 are incomplete sentences. Beneath each sentence you will see four words or phrases, marked (A), (B), (C), (D). Choose one word or phrase that best completes the sentence. Then, on your Answer Sheet, fill in the space that corresponds to the letter of the answer you have chosen:

(1) This passage is about ... English person.

(a) ...

(b) an

(c) the

(d) a

(2) Every body in England had thought Carson was ... honest person.

(a) an

(b) the

(c) a

(3) He put \$10000 on a horse ... 'Lucky Seven'

(a) that's was called

(b) was called

(c) that was called

(d) that's

(4) After that he ... a used car.

(a) buy

(b) is buy

(c) is bought

(d) bought

(5) Before he ... himself, the Police arrested him.

(a) could to kill

(b) could kill

(c) could killing

(d) could kills



APPENDIX G  
TRANSCRIPTION DEVICES

Symbol	Meaning
S or any initial except T	Student
T	Teacher
CAPITALS	Emphasis
(laugh)	Extra information
◊	Inaudible
(1.0)	Elapsed Time
( )	Untimed Pause
(.)	Micropause
=	Linked Speech
?	Rising intonation
.	Falling intonation
-	Interrupted Speech
...	Continuing Discourse
:	Lengthening
[ ]	Phonetic Representation
//	Time Index Marking

## APPENDIX H

### Scores Validity

No.	Learners Tasks	No. of Test Items	Mean Validity Rating
1	1A	6	5/6
2	1B	7	7/7
3	2A	10	9/10
4	2B	6	6/6
5	3A	7	6/7
6	3B	6	6/6
7	4A	6	6/6
8	4B	6	5/6
9	5A	9	9/9
10	5B	6	6/6
11	6A	6	6/6
12	6B	7	6/7
13	7A	7	7/7
14	7B	12	2/2
15	8A	5	4/5
16	8B	6	6/6
17	9B	9	3/3
18	9A	6	6/6
19	10A	9	8/9
20	10B	7	7/7
21	11B	6	6/6
22	11A	10	9/10
23	21A	9	8/9
24	21B	7	7/7
25	22A	6	5/6
26	22B	6	5/6
27	23A	7	6/7
28	23B	7	7/7
29	24A	8	8/8

30	24B	7	6/7
31	25A	7	7/7
32	25B	7	5/7
33	26A	6	5/7
34	26B	6	5/6
35	27A	6	5/6
36	27B	7	6/6
37	28A	5	7/7
38	28B	6	5/5
39	29A	6	6/6
40	29B	3	6/6
41	30A	7	3/3
42	30B	7	6/7
Total		289	Total: 38.25
			Average = 0.887

## APPENDIX K

### LEARNERS' PROFILE

NO	Treatments		
	Immediate Explicit(%)	Immediate Implicit(%)	Delayed Explicit(%)
1		90	100
2	100		85
3		83	70
4		60	80
5	100		62
6		75	75
7	71		71
8		67	80
9	66	100	
10	88		82
11		71	100
12	66		100
13	71		100
14	42		100
15	66		83
16	66		66
17		71	71
18		89	82
19		88	100
20	83		57
21	80		57
22	88		89
23		43	100
24		86	67
25		50	57
26		33.5	57
27		100	85.5
28		87.5	75
29		78	100
30		75	100
31		84.5	66
32	100		75
33	71.5		100
34	100		100
35	83		100

36		67	100
37		71	100
38		80	87.5
39		33	80
40		70	40
41		66	66
42	81		50
43		57	71
44		83	83
45		85	87.5
46		100	100
47		100	100
48	88		100
49	100		60
50	75		75
51	100		75
52	69		75
53	100		71
54	75		50
55	45		86
56	67		83

## APPENDIX M1

### Frequency of Immediate and Delayed Corrections

Scores on Tailor-made Tests(in %)	Timing			
	immediate		Delayed	
	Frequency of Scores	%	Frequency of Scores	%
33.00				
33.50				
40.00			1	1.8
42.00				
43.00	1	1.8		
45.00				
50.00			2	3.6
57.00	1	1.8	4	7.3
60.00			1	1.8
62.00			1	1.8
66.00	4	7.1	3	5.5
67.00			1	1.8
69.00	1	1.8		
70.00			1	1.8
71.00	2	8.9	4	7.3
71.50				
75.00	2	7.1	6	10.9
78.00				
80.00			3	5.5
81.00				
82.00			2	3.6
83.00	1	8.9	3	5.5
84.50				
85.00	4	1.8	1	1.8
85.50			1	1.8
86.00	1	1.8	1	1.8
87.50	2	1.8	2	3.6
88.00				
89.00	1	1.8	1	1.8
90.00				
100.00	7	17.9	17	30.9
Total	27		55	

## APPENDIX M2

### Frequency of Explicit and Implicit Scores

Scores on Tailor-made Tests(in %)	Manner of Correction			
	Implicit		Explicit	
	Frequency of scores	%	Frequency of Scores	%
33.00	2	6.7		
43.00	1	3.3		
50.00	1	3.3	1	1.8
57.00	1	3.3	3	5.4
60.00	1	3.3		
62.50			2	3.6
64.00			1	1.8
66.00	1	3.3	4	7.1
67.00	4	13.3		
71.00	3	10.0	6	10.7
72.00			1	1.8
75.00	1	3.3	3	5.4
78.00	1	3.3		
80.00	2	6.7	3	5.4
82.00			1	1.8
83.00	2	6.7	5	8.9
84.00	1	3.3	1	1.8
85.00			1	1.8
86.00			4	7.1
87.00	2	6.7	3	5.4
87.50	1	3.3	1	1.8
88.00			2	3.6
89.00	2	6.7	2	3.6
92.00			1	1.8
94.00			2	3.6
100.00	4	13.3	9	16.1
Total	30	100.0	56	100.0

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