

THE EFFECT OF EXPLICIT WRITTEN CORRECTIVE
FEEDBACK ON IMPLICIT AND EXPLICIT KNOWLEDGE

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ABSTRACT

The purpose of this study was three-fold: 1) to examine the general efficacy of different types of WCF on the errors of the target structure (past simple tense) in the short and long term, 2) to compare the possible difference in the effect that different degrees of explicitness of WCF might have on improving the target structure in the short and long term, and 3) to investigate the effect of the different degrees of explicitness of WCF on explicit and implicit knowledge of the past simple tense in the short and long term. One hundred and five EFL Iranian learners participated in this quasi-experimental study. They were divided into four experimental groups (20 in each) that received different degrees of explicit WCF, that is, metalinguistic, direct, indirect, reformulation and a control group (n=20) that did not receive any feedback. The effects of the WCF types were measured by Picture Description Test and Error Correction Test as a pre-test, an immediate post-test, and a delayed post-test. It was found that both metalinguistic and direct WCF could affect the participants' explicit knowledge of the past simple tense in the short and long term; the indirect WCF on the other hand, could only affect it in the short term and the reformulation was the only kind of WCF that didn't have any effect on the explicit knowledge of the past simple tense. Moreover, all the experimental groups' implicit knowledge improved in the short term, but this improvement was sustained in the long term for the metalinguistic and indirect group. So, the results suggest that there was a difference in the effect that different degrees of explicit WCF had on the development of the learners' explicit and implicit knowledge of the past simple tense. These findings are discussed from the perspective of both

Skill Acquisition Theory and language pedagogy and suggestions for further research are put forward.

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ABSTRAK

Kajian ini bertujuan untuk mengkaji kesan maklum balas pembedahan bertulis yang berbentuk 'written corrective feedback' (WCF) terhadap struktur sasaran iaitu the past simple tense dalam jangka masa pendek mahupun panjang. Tambahan pula, kajian ini bertujuan untuk membandingkan perbezaan yang mungkin wujud dalam tahap maklum balas pembedahan bertulis yang berbentuk WCF atas pengetahuan 'implicit' dan 'explicit' sasaran (the past simple tense) pada jangkamasa pendek dan panjang. Seramai seratus lima (105) orang pelajar EFL (English as a Foreign Language) Iran telah mengambil bahagian dalam kajian kuasi-eksperimen ini. Mereka telah dibahagikan kepada empat kumpulan eksperimen (20 orang pelajar dalam setiap kumpulan) yang menerima maklum balas pembedahan bertulis yang berbentuk WCF yang berbeza, iaitu metalinguistic, maklum balas secara langsung (direct) serta tidak langsung (indirect), perumusan dan terdapat satu kumpulan kawalan yang tidak menerima sebarang jenis maklum balas. Kesan jenis maklum balas telah diukur melalui dua ujian iaitu ujian Picture Description dan ujian pembedahan ralat. Ujian-ujian ini telah diadakan sebagai pra-ujian, ujian 'immediate' selepas eksperimen dan ujian 'delayed'. Dapatan kajian telah mendapati maklum balas berbentuk metalinguistic dan langsung (direct) boleh mempengaruhi pengetahuan 'explicit' pelajar dalam past simple tense dalam jangka masa pendek dan panjang. Di samping itu, maklum balas secara tidak langsung (indirect) hanya mempengaruhi pengetahuan dalam masa jangka pendek manakala maklum balas perumusan tidak mempunyai sebarang kesan atas pengetahuan 'explicit' untuk simple past tense. Tahap pengetahuan pelajar-pelajar di dalam

kumpulan eksperimen meningkat dalam jangka masa pendek tetapi peningkatan yang mampu dikekalkan pada jangka masa panjang adalah kumpulan-kumpulan yang menerima maklum balas metalinguistic and secara tidak langsung (indirect). Oleh itu hasil kajian ini mencadangkan terdapat perbezaan dalam kesan maklum balas pembetulan bertulis secara WCF atas peningkatan pengetahuan 'implicit' dan 'explicit' pelajar mengenai struktur simple past tense. Penemuan ini dibincangkan dari perspektif teori perolehan kemahiran dan pedagogi bahasa. Selain itu, cadangan-cadangan untuk kajian lanjutan turut dikemukakan.

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LIST OF ABBREVIATIONS

CF: Corrective Feedback

EFL: English as Foreign Language

ESL: English as Second Language

FL: Foreign Language

IT: Interlanguage

L1: First Language

L2: Second Language

LAD: Language Acquisition Device

SLA: Second Language Acquisition

TL: Target Language

WCF: Written Corrective Feedback

ZPD: Zone of Proximal Development

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CHAPTER 1: INTRODUCTION

This initial chapter aims to provide the background and rationale for the study. This chapter also includes the purpose of the study, research questions and the significance of the study.

1.1. Background of the Study

Writing is one of the skills that has an essential significance in foreign language and second language learning. Therefore, teachers and researchers always endeavor to use better ways for instructing writing, including feedback. Research in foreign language (FL) and second language acquisition (SLA) has also shown that writing is one of the most important skills for the language learners. Not only is the efficacy of writing for the development of grammatical accuracy debated, also the best way to teach writing remains a point of discussion. There are many varying arguments suggesting how best to go about the teaching of writing effectively (Ellis, 2006). Giving feedback is one of the most appropriate ways of instruction in foreign language and second language writing. Feedback is thought to be of the essence in teaching for fostering and strengthening learning (Cohen & Bobbins, 1976, Hendrickson, 1978, Hendrickson, 1981, Frantzen & Rissel, 1987, Kepner, 1991, Krashen, 1992, Leki, 1990, Robb et al. 1986, VanPatten, 1986, Truscott, 1996), and the same idea has also been realized in the second language writing area.

Moreover, Ellis (2009) suggests several guidelines that incorporate corrective feedback, such as ascertaining students' attitudes toward corrective feedback (CF), not being afraid to correct students' mistakes because CF really works, using focused CF, ensuring that learners know they are being corrected, and implementing a variety of CF strategies. Ellis also stresses the importance of adapting strategies to the learners being corrected. The instructor should experiment with the timing of CF, attend to the correction and revision of writing, pay attention to the cognitive and affective needs of the individual learner, correct a specific error several times, and monitor the extent to which CF causes anxiety in learners (Ellis, 2009, p. 14).

Ferris (2002) also suggests three implications for EFL teachers, that:

- they should not expect error free written production from the students,
- they should not expect accuracy improvement overnight,
- the EFL students differ from the native ones, need appropriate feedback or corrective feedback and need appropriate instruction.

There are various terms used in identifying errors and providing feedback in the SLA literature—the most common being corrective feedback. Because of the possible confusion arising from the use of this terminology, a brief review of the definitions of terms and of the different types of feedback is presented below.

Ellis (2009) believed that feedback can be positive or negative. Positive feedback affirms that a learner response to an activity is correct. It may signal the

veracity of the content of a learner utterance or the linguistic correctness of the utterance. Positive feedback is pedagogically viewed as important because it provides affective support to the learner and fosters motivation to continue learning. In addition, he expressed that In SLA, however, positive feedback (as opposed to negative feedback) has received little attention, in part because discourse analytical studies of classroom interaction have shown that the teacher's positive feedback move is frequently ambiguous (e.g., "Good" or "Yes" do not always signal the learner is correct, for they may merely preface a subsequent correction or modification of the student's utterance).

However, negative feedback signals, in one way or another, that the learner's utterance lacks veracity or is linguistically deviant (Ellis, 2009). In other words, it is corrective in intent. Corrective feedback constitutes one type of negative feedback. It takes the form of a response to a learner utterance containing a linguistic error. Both second language acquisition researchers and language educators have paid careful attention to corrective feedback (CF), but they have frequently disagreed about whether to correct errors, what errors to correct, how to correct them, and when to correct them (for example, Hendrickson, 1978 and Hyland & Hyland, 2006).

The underlying assumption for giving corrective feedback is that it will help learners to notice their errors and, subsequently, to produce the correct forms (Storch, 2010). Schmidt's Noticing Hypothesis claims that learners should notice the gap between their language productions and the correct forms in the target language in order to learn the target language. Schmidt (1990) believed that

corrective feedback facilitates learners' noticing the difference between their incorrect utterance and the target form, leading to L2 development. Izumi and Bigelow (2000) also stated that "...drawing learners' attention to form facilitates their second language learning" (p. 243). This statement refers to a popular view on language teaching: focus-on-form. Nunan (1991) defined focus-on-form instruction as including any activities that lead learners to concentrate on the targeted forms. After making a very similar definition of focus-on-form instruction, Ellis (2001) talked about some categories of focus-on-form instruction such as focus-on-forms, planned focus-on-form and incidental focus-on-form. One type of incidental focus-on-form category appeared as reactive focus-on-form which was defined as the corrections by instructors when learners produced incorrect language forms.

Furthermore, Swain (1995) and Lyster (1994) claim that focus on form can improve learners' performance. Ellis (1994) also explains that the focus on form is done by providing corrective feedback. Corrective feedback has also traditionally been and continues to be an important component of explicit and form-focused L2 instruction (i.e., instruction that includes grammar rule explanation and metalinguistic analysis) and that this type of instruction was found to be more effective in terms of its contribution to L2 learner knowledge and use of target language forms (Norris & Ortega, 2000; Spada & Tomita, 2010).

Corrective feedback is also a pedagogical technique teachers use to draw attention to students' erroneous utterances, and which may result in learners' modified output (Suzuki, 2005). According to Long (1996), corrective feedback is

connected to further ESL improvement, in that it can offer students opportunities to perceive the differences between output and input by means of a negotiation of meaning.

The aim of corrective feedback is ultimately language learning. It is provided on the assumption that it will lead not only to improved accuracy in the short term (on immediate revisions) but to L2 acquisition in the long term. That is, it is assumed that feedback will ultimately lead learners to greater mastery and control over the use of partially acquired linguistic knowledge (Bitchener, 2009), and specifically correct use of grammatical structures, choice of vocabulary, correct spelling, and punctuation.

Corrective feedback (CF) is an integral part of language class and allows teachers to provide information about the grammaticality of a learner's oral and written production. So, Corrective feedback can take the form of written or oral comments (Ellis, 2009). The table below (1.1) shows the differences between oral and written corrective feedback.

Table 1.1: Oral and Written Corrective Feedback (Ellis, 2009)

Oral	Written
<ul style="list-style-type: none">• Corrective force may or may not be clear.• Immediate.• Students function as addressees but also hearers of the feedback.• Students are exposed to public feedback that was not restricted to their own errors	<ul style="list-style-type: none">• Corrective force is usually clear.• Delayed.• Students mainly function as addressees of the feedback.• Each student is exposed to feedback moves restricted to his or her own errors.

Language teachers can correct the errors of learners either by using oral or written corrective feedback techniques. Sheen (2007) also stated three obvious differences between oral and written corrective feedback. First of these differences is related to the correction time, that is, written corrective feedback are often delayed corrections whereas oral corrections are made just after the learners' errors occur. As a second difference between them, she contended that oral corrections 'demand immediate cognitive comparisons' which overload learners cognitively. Third, she stated that the difference between these two types of corrections is in terms of pedagogical issues. According to her, written corrections on linguistic

items are generally made for the sake of improving content and organization of written works.

Corrective feedback—whether oral or written—is an important part of teaching. It occurs frequently in most classrooms. It is addressed in all the popular handbooks for teachers. It has been the subject of a large number of empirical studies. Yet it is not possible to form clear conclusions that can serve as the basis for informed advice to teachers. It is pertinent to ask why. The answer lies in the complexity of CF as an instructional and interactive phenomenon and as a potential tool for acquisition. This complexity has implications for how CF is handled in teacher education programs (Ellis, 2009).

The studies on corrective feedback in EFL context have mainly focused on oral feedback. With the effect of the interactionist theory, the role of corrective feedback has begun to gain much more importance in EFL and ESL contexts. Accordingly, the effects of various feedback types on the success of foreign or second language learning have been researched by many scholars in recent years. The central questions of these studies can be stated as what kinds of feedback should be given to learners for effective learning. Richards and Lockhart (1994) suggested some techniques which can be used by teachers while giving feedback on form:

- Asking students to repeat what he or she said.
- Pointing out the error and asking the students to self-correct.
- Commenting on errors and explaining why it is wrong, without having students repeat the correct form.

- Asking another student to correct the error.
- Using a gesture to indicate that an error has been made.

(Richards and Lockhart, 1994: p. 190)

Lyster and Ranta (1997) classified oral feedback types more specifically as explicit correction, recasts, clarification requests, repetition, metalinguistic feedback and elicitation. These types of feedback essentially reflect two basic techniques, namely explicit and implicit feedback. Ellis et al. (2006) simply defined explicit feedback as a type of feedback which includes “an indicator that an error has been committed” and implicit feedback as type of feedback in which there is “no overt indicator that an error has been committed”

Since this study investigates the efficacy of different written corrective feedback types, in the next section an explanation of WCF and the different kinds of WCF is provided.

1.2. Rationale of the Study

Although writing ability is one of the important skills in language learning, many learners of English continue to make linguistic errors when writing texts. So, in order to be able to correct the errors, learners need to obtain feedback on their writing.

Although the research on corrective feedback is chiefly concerned with oral corrective feedback and thus it has now become evident that corrective feedback on learners’ oral production improves learners’ interlanguage development, the

possible evidence for the effects of written corrective feedback on learners' written accuracy still seems uncertain. One of the problems in the issue of effect of written corrective feedback on learners' written accuracy can be stated as whether correction improves learners' written accuracy.

Second language (L2) writers especially need written corrective feedback (WCF), because they often have issues not only with native language (L1) interference but also an incomplete understanding of their L2 (Ferris, 2002; Hyland & Hyland, 2001; Matsuda et al., 2006; Thonus, 1999). So, English language learners make errors when writing texts and they may need to receive and give feedback to help them correct their linguistic errors. Van Beuningen (2010) refers to such responses to learners' production as written corrective feedback or error correction. Error correction is a technique used to help learners correct their errors by providing them with feedback about their errors.

Written teacher feedback is a standard method used by most teachers to provide guidance in revising student writing. In fact, for most writing teachers, it is the preferred and most common form of feedback (Ferris, 1997, 2007). Written corrective feedback (WCF) which has received a great deal of attention in the last three decades, tries to improve the writing abilities of the learners (Ferris, 2006). Generally it is regarded as error correction which potentially contributes to the linguistic development of the learners (Coyle & Larios, 2014).

In language writing classes, teachers generally give corrective feedback (CF) on their learners' writing, particularly on errors in grammar and lexis (Van Beuningen, 2010). Actually, when reviewing their students' texts, L2 (writing)

teachers give feedback on a wide range of issues. They might address the text content, the way in which its ideas are presented and organized, the appropriateness of the vocabulary that is used among others. The type of feedback that has received most of researchers' attention, however, is feedback on linguistic errors.

The underlying assumption for giving feedback is to get learners to pay attention to their errors and produce the correct forms (Storch & Wigglesworth, 2010). However, for scholars of second language writing, how to most effectively respond to student writing remains a matter of great interest (McMartin-Miller, 2014) and for writing teachers, it is a critical issue which is usually laden with disappointment and lack of determination. Teachers are confused about what they should look for in the writing, how they can give clear and specific feedback to motivate and encourage the learners, how they can make sure that the learners uptake the feedback and learn from that, and finally how they can manage the energy and time to give feedback. In spite of these self-doubts, only a few of them would state that they should not respond to learner's writing. There is a need to investigate the impact, processes, and aims of the written corrective feedback in order to understand this issue and help the instructors (Ferris, 2014).

In general WCF is the teacher's response to students' writing that aim to help them improve their writing performance. WCF is essential for encouraging learning (Anderson, 1982; Brophy, 1981) and the development of L2 writing (Hyland & Hyland, 2006). It emerged as an important tool of language development in the 1970s that was emphasized by learner-centered approaches to writing instruction in North American L1 writing classes. Before that, the typical method of

responding to students' writing was through assigning a grade on a paper (Grabe & Kaplan, 1996). Yet, according to Grabe and Kaplan (1996), this system of response (assigning a grade on a paper) confused students. Teachers assumed that students need to see their errors, correct themselves and understand why their writings were marked in red. The process approach to writing, however, has changed the way responses to students' writing have been handled as more methods of feedback have been developed. For example, teachers have encouraged their students to re-draft their writing and have also discovered different strategies in giving feedback to students (Ferris, 1997). So, the emergence of the process approach to L2 writing resulted in a shift in focus in feedback methods from product to process, encouraging teachers to provide feedback to writers during the writing process through multiple drafts.

Written corrective feedback can take different forms. In general, Ellis (2008) has identified five basic strategies for giving written corrective feedback: 1) It can be viewed as direct or indirect. The former is defined as providing the correct linguistic structure or form by the teacher for the linguistic error of the learners. The latter, however, does not draw the explicit attention of the learners to the error by only indicating that an error has been made in some way. 2) Another dichotomy is made between unfocused and focused corrective feedback. Unfocused CF corrects all the errors in learners' written work. In contrast, when giving focused CF, the teacher selects certain errors to correct and does not correct all the errors. 3) Metalinguistic CF is the provision of explicit comment about the learner's error. 4) The teacher can also indicate an error by providing a hyperlink which shows the

examples of the correct usage of the learner's error which is called Electronic Feedback. 5) Reformulation is another kind of written corrective feedback which is reworking of the learners' entire text by a native speaker while not changing the content of the original text.

1.3. Significance of the Study

To date, the research on written corrective feedback have uncovered some interesting findings, but since some of the findings are inconsistent it is clear that more research needs to be done. This study is an attempt to fill the gap in the literature on WCF and address the following issues:

The large majority of published feedback research has been conducted in L1 and ESL college contexts (e.g., Fazio, 2001; Chandler, 2003 among others). So, empirical research carried out in other contexts, especially under-represented contexts such as elementary and EFL contexts will be a welcome addition to the field (Lee, 2014). As feedback is an area of work that affects all writing teachers and their students, it is important that the literature be augmented by research studies conducted in different parts of the world.

In the context of the present study, Skill Acquisition Theory is particularly relevant, because, as Dekeyser (2001) asserts declarative (explicit) knowledge is needed for developing the procedural (implicit) knowledge. He also claims that by deliberate and extensive practice the declarative knowledge can be proceduralized. So, following Skill Acquisition Theory, Ellis (2004) and other researchers have differentiated between explicit knowledge and implicit knowledge. However, it is

not known which knowledge (explicit or implicit) learners draw upon while they are writing and whether WCF which is used to edit their text or write a different one over time is stored as unconscious procedural knowledge or explicit declarative knowledge in the students' memory (Sheen 2007; Bitchener 2008). So, this issue has yet to be investigated. Bitchener (2012) was also concerned with whether WCF can affect implicit knowledge. Polio (2012) also argued that studies on the roles of explicit and implicit knowledge in writing needs to be done. There has been only one study (Shintani & Ellis, 2013) that has specifically addressed the effects of WCF on explicit and implicit knowledge. So it calls for further research.

Besides considering the issues of the context and the types of knowledge utilized when WCF is given, another issue is considering the degree of explicitness of feedback. Whether the degree of explicitness of WCF plays a role in the development of writing is a theoretically and pedagogically important issue to be considered. Theoretically, if the more explicit kinds of WCF are more helpful than less explicit ones, theoretical explanations of Skill Acquisition Theory that describe and predict how the learners acquire L2 should consider these differences as empirical evidence and L2 learning conditions. Pedagogically, teachers can then be more confident of the WCF and know how and what can help learners to improve the most. So far research on WCF has not produced consistent and clear findings about the degree of explicitness of feedback and its effectiveness in the short and long terms.

1.4. Purpose of the Study and Research Questions

The purpose of this study was three-fold: 1) to examine the general efficacy of different types of WCF on the errors of the target structure (past simple tense) in the short and long term, 2) to compare the possible difference in the effect that different degrees of explicitness of WCF might have on improving the target structure in the short and long term, and 3) to investigate the effect of the different degrees of explicitness of WCF on explicit and implicit knowledge of the past simple tense in the short and long term.

In fact, the present study adopts the Skill Acquisition Theory to view this WCF study and response to the succeeding research questions:

- 1) What effect does focused metalinguistic WCF have on learners' explicit and implicit knowledge of past simple tense?
- 2) What effect does focused direct WCF have on learners' explicit and implicit knowledge of past simple tense?
- 3) What effect does focused indirect WCF have on learners' explicit and implicit knowledge of past simple tense?
- 4) What effect does reformulation WCF have on learners' explicit and implicit knowledge of past simple tense?
- 5) Is there any difference in the effect that different degrees of explicitness of feedback have on learners' implicit and explicit knowledge of past simple tense?

It is worth mentioning that due to insufficient justification in the literature, it was not possible to develop the hypotheses for the research questions mentioned above.

In conclusion the first chapter of the study provides the background and rationale for the study. In addition, it highlights the significance of conducting this research study on WCF following by the purpose of the study and the research questions. In the next chapter, we will go through an overview of the development of WCF, studies on it, and the theoretical framework of the study.

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CHAPTER 2: REVIEW of LITERATURE

This chapter aims to present the literature that helps shape the framework of the study. It begins with highlighting the history, perspectives and issues on WCF, followed by the theories in studies of WCF, and then it examines the theoretical framework of the study, that is, Skill Acquisition Theory. Finally the related studies on the effect WCF on L2 learning as well as the relative effectiveness of different types of written feedback in this area are reviewed.

2.1. Historical Development of Written Corrective Feedback

Error correction or corrective feedback (CF) is probably the most widely used feedback form in present-day second language (L2) classrooms. The importance of feedback emerged with the development of learner-centered approaches to writing instruction in North American L1 composition classes during the 1970s. The “process approach” gave greater attention to teacher-student encounters around texts and encouraged teachers to support writers through multiple drafts by providing feedback and suggesting revisions during the process of writing itself, rather than at the end of it. Seen as the ideal way to develop learners’ writing skills (Susser, 1993; Zamel, 1983), the model required L2 writers to go through various stages— prewriting, drafting, feedback, revising, and editing—that reflect the recursive, nonlinear cognitive processes involved in arriving at a final written product (Ferris & Hedgcock, 2005). The focus moved from a concern with mechanical accuracy and control of language to a greater emphasis on the development and discovery of meaning through the experience of writing and rewriting. Feedback came to be viewed as having a powerful potential, with the

possibility for “a revision of cognition itself that stems from response” (Freedman, 1985).

Historically, most L2 writing researchers have also adopted a process-oriented model of instruction to investigate the effects of written feedback (e.g., Ferris, 1995, 1999; Hedgcock & Lefkowitz, 1992; Polio et al, 1998; Robb et al, 1986). The process-oriented model, has dominated recent first language (L1) and second language (L2) research (Hedgcock, 2005). A number of experts consider written error correction to belong properly to the domain of grammar teaching, which they regard as unnecessary (e.g., Zamel, 1987). Other experts, although accepting that error correction has a place in writing pedagogy, discuss its effectiveness in terms of the development of overall writing skills (e.g., Ferris, 1997).

As Reichelt (2001) pointed out, there is an alternative way of conceptualizing writing and writing instruction. That is to say, instead of treating writing as an end in itself, ESL writing can be viewed as a means for promoting L2 learning and thereby more accurate production in both oral and written language use. In other words, writing instruction that incorporates written CF can be considered an instructional technique to draw L2 learners’ attention to linguistic forms in their writing products and thus to improve their acquisition of a second language. Similarly, feedback provided orally may have positive effects on learners’ written production.

So, while response to student writing has been a subject of considerable interest to teachers and researchers for more than 30 years, research into response in L2 writing did not really begin until the early 1990s, and many questions remain only

partially answered. Several key questions continue to be hotly debated. For example:

- What kinds of feedback are most appropriate in the different contexts?
- What are the most effective teacher practices?
- How do students perceive and respond to feedback?
- How do cultural factors influence response?
- And does feedback improve student writing in the long term?

L2 writers obviously work within a complex context, where language proficiency, diverse cultural expectations, new teacher-learner experiences, and different writing processes can interact in significant ways with the cognitive demands of interpreting feedback and negotiating revisions. As a result, research has tended to explore some key issues of difference between L1 and L2 writing contexts, such as peer response, teacher-student conferencing, and the effects of teachers' written feedback.

The research investigating possible effects of written corrective feedback has also been inspired from Hendrickson's (1978) implications:

1. It appears that correcting oral and written errors produced by second language learners improves their proficiency in a foreign language more so than if their errors would remain uncorrected.

2. The literature reveals a wide variety of techniques that teachers currently use to correct their students' oral and written errors. It appears that continued research in this new area will contribute to the development of additional practical methods for correcting errors effectively and efficiently. (Hendrickson, 1978; 396)

The research inspired from Hendrickson's studies was criticized by Truscott (1996, 2004, & 2007) and he concluded in his review articles with the evidence against written corrective feedback and stated that learners should not receive written grammar corrections.

"My thesis is that grammar correction has no place in writing courses and should be abandoned" Truscott (1996).

2.2. Perspectives on Efficacy of Written Corrective Feedback

The usefulness of WCF was then, fiercely debated ever since the appearance of Truscott's (1996) article "The case against grammar correction in L2 classes", in which he caused increased concern in the literature on feedback by claiming that error correction, is necessarily ineffective and potentially harmful. In the decade that followed, he repeatedly presented objections with respect to the use of CF in L2 writing classes (Truscott, 1999, 2004, 2007, and elsewhere).

Truscott's (1996) statement that CF is ineffective relies on both practical and theoretical arguments. His practical doubts pertain to teachers' capacities in providing adequate and consistent feedback and to learners' ability and willingness to use the feedback effectively.

Truscott (1996, 2004, & 2007) stated that correcting students' writing might be counterproductive. His first argument was that teachers run the risk of making their students avoid more complex structures when they emphasize learners' errors by providing CF. Truscott reasoned that it is the immediate goal of error correction to make learners aware of the errors they committed and that this awareness creates a motivation for students to avoid the corrected constructions in future writing (Truscott, 2007).

Both Krashen (e.g. 1982) and Truscott (e.g. 1996) suggested that, in making students aware of their errors, CF leads to learner stress and anxiety of committing the same errors in future writing. In their view, this anxiety could make learners avoid the erroneous constructions when writing a new text, resulting in simplified writing. This suggestion that the focus on language form induced by CF might lead to a reduction of the linguistic complexity of learners' output, is in line with predictions from limited capacity models of attention which also expect a trade-off between accuracy and complexity (e.g. Skehan, 1998). Within these models, L2 performance is expected to become more complex when learners are willing and feeling free to experiment with the target language. A focus on accuracy, on the other hand, "is seen to reflect a greater degree of conservatism" in which learners will try "to achieve greater control over more stable [interlanguage] elements" while avoiding extending their L2 repertoire (Skehan & Foster, 2001). From a multiple-resource perspective on attention (e.g. Robinson, 2003; 2005), however, linguistic accuracy and complexity are not presumed to be in competition because these two form-related aspects of learner output are thought to be closely connected.

A few studies have investigated the influence of WCF on linguistic complexity, and studies that did, (Chandler, 2003; Robb et al., 1986; Sheppard, 1992) could not come to any warranted conclusions. Sheppard (1992), for example, reported a negative effect of CF on the structural complexity of learners' writing, but in fact his finding was not significant. Robb et al. (1986) found that CF had a significant positive effect on written complexity, but they did not include a control group. The same holds for Chandler (2003), who did not find any effect of CF on the complexity of students' writing. An additional problem with the latter study is that Chandler based her conclusion on holistic ratings of text quality. However, the fact that holistic ratings did not change does not necessarily prove that the linguistic complexity of learners' writing did not change either (Sheen, 2010).

Second, Truscott (1996, 2004) claimed that CF is a waste of time and suggested that the energy spent on dealing with corrections—both by teachers and students—could be allocated more efficiently to alternative activities, such as additional writing practice.

The only study that has directly tested this claim by comparing the effects of CF to those of writing practice is an investigation by Sheen et al. (2009). Their results opposed Truscott's claim in that learners did not benefit more from writing practice compared to CF.

Truscott's theoretical argument rests on a number of claims. The first claim is that WCF does not take into consideration the gradual and complex nature of interlanguage development, which stands in stark contrast to error correction as a simple transfer of information. He believed that simple transmission of information

(WCF) is unlikely to work, but he did not take into consideration the point that when the learners notice the difference between the target input (WCF) and their output, they are able to change it as target-like output (Ferris 2004; 2006). The second claim is that it is impossible for any single form of CF to be effective across the very differently acquired domains of morphology, syntax, and lexis, particularly with respect to grammatical features that are “integral parts of a complex system” (Truscott, 2007) and that would be impervious to change (even if CF might be proven beneficial for spelling problems and other such simple, discrete errors). So, it is essential that future research investigate the extent to which various types of WCF, can improve the acquisition of different linguistic forms; Another claim is the likelihood that any proven benefits might be at best related to the development of explicit declarative knowledge (e.g., DeKeyser, 2003; Ellis, 2004), but never implicit procedural knowledge, which is all-important for acquisition; thus, CF would promote “pseudo-learning” or at best self-editing and revision skills, without fostering true accuracy development. Whether WCF used to revise text or write a new one over time and whether it is stored in memory as explicit or implicit knowledge has yet to be explored. Truscott’s other claim against WCF was the impracticality of tailoring CF to each learner’s current level of L2 development, in Pienemann’s (1998) sense of learner readiness. However, the findings in this area to date are inconclusive and insufficient to be useful for teaching practice. Although he questions the possibility of giving WCF at a time that matches with their readiness, this does not mean that it is impossible. It is possible, for instance, if WCF is given to one or two target structures that are identified as problematic for the learners (Bitchener & Knoch, 2009). He also proposes that unfocused WCF is

unlikely to be effective, because learners cannot revise a number of errors in a text and improve in new text over time. On the other hand, referring to only one study (Hendrickson, 1981) he also discounts focused approach (correction of one or a few number of errors). This aspect of focused and unfocused WCF needs to be given attention in the future studies (Sheen, 2010).

Based on all of the above reasons, Truscott (1996) called for the abandonment of CF from L2 writing classes, until its usefulness had been proven by empirical research (Truscott, 1999, 2004, 2007). This controversial stance ignited significant responses and initiated interest in WCF research. Ferris (1999) was foremost among those rejecting Truscott's claim. Many have followed since, arguing that WCF helps students improve their language accuracy (Bitchener, 2008; Bruton, 2009, 2010; Chandler, 2003; Ellis et al., 2008; Russell & Spada, 2006; Sheen, 2007). Although Ferris (1999, 2002, and 2004) made a stand for the use of written CF and argued that Truscott's conclusions were premature, she agreed that evidence from well-designed studies was necessary before any firm conclusions could be drawn about the (in) effectiveness of error correction. This call has resulted in an ever-expanding body of studies exploring the effects of CF on L2 learners' writing.

The research in support of WCF is far from conclusive (Ellis et al., 2008; Ferris, 2003; Guenette, 2007; Hyland & Hyland, 2006; Storch, 2010). In an effort to buttress his original claim that corrective feedback was not effective, Truscott (2007) turned to meta-analysis, which combines the results of several studies that address a set of related research hypotheses. This is normally done by identifying a common measure of effect size (Russell & Spada, 2006; Truscott, 2007). Truscott's

meta-analysis was done in response to the studies undertaken since the appearance of his 1996 article as well as a meta-analysis conducted by Russell and Spada (2006) that suggested that WCF was effective. Truscott's (2007) meta-analysis suggested that the practice of error correction is a failure and that the question "How effective is correction?" should perhaps be replaced by "How harmful is correction?". To further complicate the matter, current research on the meta-analytical procedures Truscott used suggests that his procedures may be flawed since he offers little to describe a systematic approach to include criteria in his analysis (Poltavtchenko & Johnson, 2009). Bruton (2010) also indicated that meta-analyses present a flawed view of writing in a second language and tell us little of what actually happens as a result of corrective feedback.

So, several scholars can be credited for creating a meaningful shift from the back-and-forth debate Truscott's work created to a more focused look at research methods and WCF practices. Ferris (2004) was foremost among those who called for more and better research and less debate. She noted that we are essentially "at Square One and need to do well-designed research" (p. 49). In similar fashion, Guenette (2007) argued that most claims about corrective feedback being effective or ineffective are difficult to substantiate since much of the current research is faulty and methodologically inconsistent. Most recently Bruton (2009) has taken up an issue with Truscott's stance that corrective feedback is a waste of time, by stating that it is counter intuitive to think that focused attention would be "detrimental to improving accuracy" (p. 600). He further notes that "Truscott does not explain how L2 writers might effectively improve either their correctness or other language

features of their writing, if any type of language-focused feedback on written tests is excluded” (p. 601).

In general, the demand for research on the value of WCF can be drawn back to the discussion between Truscott and Ferris. Prior to 1996 when Truscott claimed that WCF is not useful, the assumption that WCF is helpful in improving the accuracy of the learners’ writing was not challenged. In fact, as Truscott (1996; 1999) and Ferris (1999) expressed, research evidence was limited in terms of the studies that had tried to address the question of efficacy of WCF. Ferris (1999) believed that “Truscott’s claims were premature because the body of evidence he presented was too limited and because there were too many methodological flaws in the design and analysis of the published studies. She also explained that short-term investigations involving text revision reveal improvement in accuracy as a result of WCF and students believed it helps them improve their writing”.

To date, research on WCF (reviewed below) has shown some interesting findings, but the contradiction of the results makes it clear that more research needs to be done. From the short review of some views on language learning and corrective feedback process, it seemed that corrective feedback was one of the important issues in the language learning process. In the following parts of the section, after a brief definition of different WCF types, some research on this issue will be reviewed.

2.3. Definition of Various Types of Written Corrective Feedback

2.3.1. Metalinguistic Written Corrective Feedback

Metalinguistic written corrective feedback provides learners with some form of explicit comment about the nature of the errors they have made. The explicit comment can take two forms.

- 1) Use of error codes, i.e. abbreviated labels for different kinds of errors placed over the location of the error in the text or in the margin. e.g. art = article, prep = preposition, sp = spelling, ww = wrong word, t = tense, etc.

- 2) Metalinguistic explanations of their errors, e.g. numbering errors and providing metalinguistic comments at the end of the text.

By far the most common is the use of error codes. These consist of abbreviated labels for different kinds of error. The labels can be placed over the location of the error in the text or in the margin. In the latter case, the exact location of the error may or may not be shown. In the former, the student has to work out the correction needed from the clue provided while in the latter the student needs to first locate the error and then work out the correction (Ellis, 2008). Examples of both are provided below (Table 2.1) from Ellis (2008).

Table 2.1: Examples of Metalinguistic Written Corrective Feedback (Ellis, 2008)

Art. x3: WW	A dog stole bone from butcher. He escaped with having bone.	
Prep.: art.	When the dog was going through bridge over the river he	
Art.	found dog in the river.	
art.	art.	WWart.
A dog stole bone from butcher. He escaped with having bone. When the dog was		
prep.	art.	art.
going through bridge over the river he found dog in the river.		

The second type of metalinguistic CF consists of providing students with metalinguistic explanations of their errors. This is far less common, perhaps because it is much more time consuming than using error codes and also because it calls for the teacher to possess sufficient metalinguistic knowledge to be able to write clear and accurate explanations for a variety of errors. This is less common than error codes. The table below (2.2) shows the example.

Table 2.2: Example of Metalinguistic Written Corrective Feedback (Ellis, 2008)

(1)	(2)	(3)
A dog stole bone from butcher. He escaped with having bone. When the dog was		
(4)	(5)	(6)
Going through bridge over the river he found dog in the river.		
(1), (2), (5), and (6)___you need ‘a’ before the noun when a person or thing is mentioned for the first time.		
(3)___you need ‘the’ before the noun when the person or thing has been mentioned previously.		
(4)___you need ‘over’ when you go across the surface of something: you use ‘through’ when you go inside something (e.g. ‘go through the forest’).		

Ellis et al. (2008) speculated that metalinguistic written corrective feedback forces learners to formulate some kind of rule about the particular grammatical feature and then they use this rule but it takes time for them to be able to use this rule effectively. He believed that metalinguistic feedback involves providing some kind of metalinguistic clue as to the nature of the error that has been committed and the correction needed. Metalinguistic feedback, then, appeals to learners’ explicit knowledge by helping them to understand the nature of the error they have committed. Direct feedback might have an immediate effect but learners soon forget the correction, whereas if they’ve learned the rule, maybe it is going to have a longer term effect on learners’ ability to avoid the errors (Ellis et al., 2008). More explanation on this issue is provided in the next chapter.

According to Shintani et al. (2014), Metalinguistic and direct WCF are likely to involve different types of processing by learners. In the case of direct WCF,

learners are provided with input (positive evidence) and can carry out a cognitive comparison of the incorrect and correct forms. However, they may or may not attempt to develop an understanding of the underlying rule that the corrections illustrate. In the case of metalinguistic, learners need to identify the specific errors they have made themselves and also work out how to correct them. In this respect, it requires a similar kind of guided problem solving to indirect WCF but differs from it in that specific errors in the learners' writing have not been identified. Arguably, therefore, it requires a deeper level of processing.

2.3.2. Direct Written Corrective Feedback

Giving direct WCF, teachers provide the students with correct form which can take a number of different forms i.e. crossing out an unnecessary word (when the teacher omits any wrong addition from students' original texts, phrase or morpheme), inserting a missing word, phrase or morpheme (when the teacher adds any missing items on students' original texts) and writing the correct form above or near to the erroneous form (when the teacher rewrites a word, phrase or a sentence, providing the correct spelling, structure or form on students' original texts) (Ferris 2006). Table below (2.3) shows the three forms of direct correction:

Table 2.3: Examples of Direct Written Corrective Feedback (Ellis, 2008)

a	a	the
A dog stole bone from butcher. He escaped with having bone. When the dog was		
over	a	a saw a
going through bridge over the river he found dog in the river.		
wake	in	at a shower eat
I woke-up^ morning^ 6 o'clock. First I have^ shower then I eating my breakfast.		
that		at
After^ I dress and leave home to catch the bus. I arrive^ school at 7:30.		
At 8:00 the class will start. The class starts at 8:00		

The table shows that direct corrective feedback can cover a variety of issues in students' texts. It also has the advantage that provides learners with explicit guidance about how to correct their errors. This is clearly desirable if learners do not know what the correct form is (i.e. are not capable of self-correcting the error). Direct corrective feedback aims to help students edit their writing and improve their performance in future tasks (Bitchener & Ferris, 2012). Ferris (2002) argues that it is useful in treating errors of prepositions and other issues of idiomatic lexis. She also claims that it is useful in the final stages of the writing process to help students focus on the remaining errors in their texts and refer to them in future tasks. Ferris and Roberts (2001) suggest direct written corrective feedback is probably better than indirect written corrective feedback with writers of low levels of language

proficiency. Shintani and Ellis (2013) expressed that Direct CF is more likely to facilitate learning when learners have no or ill-formed explicit or implicit knowledge of a grammatical feature. Chandler (2003) argued that direct CF enables learners to internalize the correct form immediately whereas indirect CF does not inform learners about the accuracy of their hypothesized corrections. This is especially the case if learners have limited L2 proficiency and poorly developed writing abilities. However, it requires minimal processing on the part of the learner. Although, it might help them to produce the correct form when they revise their writing, it may not contribute to long-term learning.

Those more in favor of direct feedback suggest that it is more helpful to writers because it (1) reduces the type of confusion that they may experience if they fail to understand or remember the feedback they have been given (for example, the meaning of error codes used by teachers); (2) provides them with information to help them resolve more complex errors (for example, syntactic structure and idiomatic usage); (3) offers more explicit feedback on hypotheses that may have been made; and (4) is more immediate. It may be the case that what is most effective is determined by the goals and proficiency levels of the L2 writers (Bitchener & Knoch, 2010).

2.3.3. Indirect Written Corrective Feedback

Indirect feedback involves indicating that the learner has made an error but without actually correcting it and leaving the student to solve the problem that has been called to his or her attention. This can be done by underlining the errors or using cursors to show omissions in the learners' text or by placing a cross in the

margin next to the line containing the error. The table below (2.4) shows example of indirect written corrective feedback. In effect, this involves deciding whether or not to show the precise location of the error, i.e. just indicate which line of text the error is on. Indirect corrective feedback emphasizes the role of students in understanding and correcting their errors rather than being provided with the corrections (Ellis, 2008). As Ferris (2010) reminds us, the goals of the L2 writer in composition classes may be different from those in language learning classes and this difference may be a factor in determining which type of feedback is more appropriate and effective. In composition classes where L2 writers are encouraged to edit and revise their texts, indirect feedback tends to be preferred because it invites writers to draw on their linguistic knowledge when attempting to correct the errors that have been identified.

Table 2.4: Example of Indirect Written Corrective Feedback (Ellis, 2008)

<p>A dog stole X bone from X butcher. He escaped with X<u>having</u>XX bone. When the dog was going X<u>through</u>X X_<u>bridge</u> over X<u>the</u>X river he found X dog in the river.</p> <p>X= missing word</p> <p>X__X= wrong word</p>

Indirect feedback is often preferred to direct feedback on the grounds that it caters to ‘guided learning and problem solving’ (Lalande, 1982) and encourages students to reflect about linguistic forms. For these reasons, it is considered more likely to lead to long-term learning (Ferris & Roberts, 2001). Moreover, those

supporting indirect feedback suggest that this approach is best because it invites L2 writers to engage in guided learning and problem solving and, as a result, promotes the type of reflection on existing knowledge that is more likely to foster long-term acquisition and written accuracy (Bitchener & Knoch, 2010)

However, Learners cannot correct if they do not know the correct form. They may be able to correct but will not be certain that they are correct.

The distinction between direct and indirect CF makes sense in terms of language pedagogy but it is somewhat problematic when viewed from the perspective of second language acquisition theory. It is important to distinguish between two senses of acquisition (Ellis, 1994): (1) the internalisation of a new linguistic form and (2) the increase in control of a linguistic form that has already been partially internalised. Indirect CF has the potential to assist (2) but it is not clear how it can address (1). Direct CF, because it supplies learners with the correct target form, can assist with (1). It follows that the effectiveness of direct and indirect CF is likely to depend on the current state of the learners' grammatical knowledge. From a practical standpoint, however, it is unlikely that teachers will be sufficiently familiar with individual learners' interlanguages to be able to make principled decisions regarding whether to correct directly or indirectly (Ellis et al, 2008).

Whereas direct CF consists of an indication of the error and provision of the corresponding correct L2 form, indirect CF only indicates that an error has been made. Various alternative hypotheses concerning the relative effectiveness of direct and indirect CF have been put forward. In support of indirect CF, it has been

suggested that learners will benefit more from it because it engages students in a more profound form of language processing while they self-edit their writing (e.g., Ferris, 1995; Lalande, 1982). In this view, the indirect approach “requires pupils to engage in guided learning and problem solving and, as a result, promotes the type of reflection that is more likely to foster long-term acquisition” (Bitchener & Knoch, 2008, p. 415). In support of direct CF, on the other hand, it has been claimed that the indirect approach might fail because it provides learners with insufficient information to resolve complex linguistic errors (e.g., syntactic errors). Chandler (2003) furthermore argued that whereas direct CF enables learners to instantly internalize the correct form, learners whose errors are corrected indirectly do not know if their own hypothesized corrections are indeed accurate. This delay in access to the target form might level out the potential advantage of the additional cognitive effort associated with indirect CF. Moreover, it may be that learners need a certain level of metalinguistic competence to be able to self-correct their errors using indirect CF (e.g., Ferris, 2004; Hyland & Hyland, 2006; Sheen, 2007).

For writing development, indirect WCF may be more valuable for the long term than direct CF (Ferris, 2006; Hendrickson, 1980; Lalande, 1982). “Direct” WCF, as defined by Hendrickson (1980), occurs when the teacher or researcher not only marks the error but also provides the correct form. With “indirect” WCF, the error is called to the writer’s attention, but the correct form is not given.

2.3.4. Reformulation

Reformulation involves rewriting a learner’s text, preserving all its ideas but removing lexical inadequacies, grammatical errors, and ambiguities, so that it

appears as native-like as possible (Levenston, 1978), It is claimed that reformulation provides learners with a wide range of lexical, syntactic, and discursive alternatives that, when learners contrast them with their own writing, can lead learners to engage in deeper processing than with more traditional CF strategies such as those explained above (Hanaoka, 2007; Hanaoka & Izumi, 2012 ; Qi & Lapkin, 2001). The writers then revise their writing by deciding which of the native-speakers’ reconstructions to accept. In essence then, reformulation involves two options ‘direct correction’ + ‘revision’ but it differs from how these options are typically executed in the whole of the learners’ texts are reformulated thus laying the burden on learners to identify the specific changes that have been made (Ellis, 2008). The table below (2.5) shows an example of reformulation.

Table 2.5: Example of Reformulation (Ellis, 2008)

Original version:	As he was jogging, his tammy was shaken.
Reformulation:	As he was jogging, his tummy was shaking.
	tummy
shaking	
Error Correction:	As he was jogging his tammy was shaken .

Hedge (2000) describes reformulation as a useful procedure, especially for students who have produced a first draft and are looking for local possibilities for improvement. Students can compare the target model on their own to notice the

differences. This strategy also provides a wide range of useful discussions on the development of ideas and the use of structure, vocabulary and conjunctions.

The technique of reformulation has attracted the attention of some L2 writing teachers and researchers for its potential to overcome some drawbacks of traditional feedback methods, which often target non-target like forms in isolation. Adams (2003) points out that, unlike traditional written feedback, reformulation can circumvent such problems as overwhelming learners with too many corrections, presenting them with ambiguous written comments, providing negative evidence without sufficient positive evidence, and permitting learners to receive feedback passively without engaging their active cognitive processing. One possible drawback of reformulations may be that learners have to find a number of changes made in the reformulated text on their own, which may not be easy especially for lower proficiency learners unless enhancement of some kind is provided to the reformulated parts to help draw their attention. It is also possible that some L2 learners may feel a sense of resistance to the native speaker norm imposed on them in the form of reformulations.

Reformulation has also been criticized for being time-consuming, as it requires a whole text to be rewritten (Hairston, 1986). Some critics argue that it provides students with a model to imitate, thus limiting their creativity (Luchini & Roldan, 2007). Jimena et al. (2005) argue that students of a low proficiency level may not be able to benefit from reformulation as it is primarily appropriate for intermediate and advanced L2 learners. In addition, the task of a reformulator is not easy as he is not supposed to twist or change the meaning but to improve the text while

preserving the ideas of the original writer. Non-native teachers who cannot find a native reformulator should have a sufficient L2 level to be able to reformulate students' texts.

2.4. Issues in Written Corrective Feedback Research

The controversy concerning WCF centers on a number of issues. In this section, the main research issues regarding WCF are addressed, that is: efficacy of different types of written corrective feedback, degree of explicitness of written corrective feedback, explicit and implicit knowledge, focus of written corrective feedback, and the selection of error to be corrected.

2.4.1. Efficacy of Different Types of Written Corrective Feedback

Assuming that WCF is effective in helping learners improve the accuracy of their writing and in facilitating the acquisition process, a range of studies have investigated whether certain types of WCF or combinations of different types are more effective than others. These studies are grouped in the next part according to their relevance to the present study.

2.4.1.1. Studies Comparing Metalinguistic and Direct Feedback

As earlier mentioned in the previous section, metalinguistic feedback involves providing some kind of metalinguistic clue as to the nature of the error that has been committed and the correction needed. Metalinguistic feedback, then, appeals to learners' explicit knowledge by helping them to understand the nature of the error they have committed. This type of feedback that can be provided in either oral or written form has been little investigated (Ellis et al., 2008).

Early studies on metalinguistic feedback like Fotos and Ellis (1991) considered oral metalinguistic feedback. They compared metalinguistic with indirect consciousness-raising involving a grammar discovery task. They reported that both types of consciousness-raising resulted in significant gains in learners' understanding of the target structure (dative alternation) as measured by a grammaticality judgment test. However, the metalinguistic feedback led to more durable gains. In a follow-up study that investigated four different grammatical structures, Fotos (1994) also found metalinguistic feedback to be effective. In both of these studies the explicit metalinguistic explanation was provided orally by a teacher.

Bitchener et al. (2005) also considered oral metalinguistic feedback. They compared the effect of different feedback combinations typically practiced in advanced proficiency classroom settings: (1) direct error correction (placed above each error) plus oral meta-linguistic explanation in the form of 5 minute one-on-one conferences; (2) direct error correction; and (3) no corrective feedback. They found that those in group one who received direct error correction and oral meta-linguistic explanation outperformed both groups two and three for the past simple tense and the definite article but found no such effect for prepositions. They suggested that the addition of oral meta-linguistic explanation may have been the crucial factor in facilitating increased accuracy.

Answering the call for more research on the effect of corrective feedback, Bitchener et al. (2005) compared the effect of three types of feedback (direct written feedback plus teacher-student conference, only direct written feedback, and no

feedback) on how well the students corrected the errors pertaining to the use of three grammatical categories, i.e., prepositions, the past simple tense, and the definite article. They used 53 learners who were divided into three groups. The first group included 19 students, who received direct written feedback along with a five-minute conference with the researcher after completing each new composition. The second group included 17 students, who only received direct written feedback. The third group included 17 students, who were only given feedback on the quality of their content and organization, rather than feedback on the linguistic accuracy of their writing. After a twelve week period, learners were asked to produce a novel piece of writing. Three kinds of errors were analyzed including the definite article, prepositions, and the simple past tense. These error types were chosen for analysis based on the fact that they represented the three most frequent error types in the initial composition. The results showed no difference between the three feedback groups when the overall students' errors were considered. However, with respect to the students' errors in any one of the grammatical categories, the study found significant differences among the groups: the feedback groups made more improvement in their writing than the no-feedback group. This study, however, only testifies to the joint effect of written and oral CF on learners' writing.

Sheen (2007) noted that some earlier L2 writing research investigating CF has suffered from a number of methodological limitations (e.g., the lack of a control group as in Lalande, 1982, and Robb et al., 1986). For this reason, research findings to date have failed to provide clear evidence that written CF helps learners improve linguistic accuracy over time. In an attempt to overcome these limitations, Sheen's (2007) research examined the effects of focused WCF using a methodology adopted

from SLA, which avoids the kinds of methodological problems evident in many written CF studies. Sheen (2007) examined 91 participants with different first languages in three different treatments: a direct-only correction group, a direct metalinguistic correction group, and a control group. In comparing the effects of written direct and written metalinguistic correction, Sheen reported that written direct correction with and without metalinguistic comments was effective in improving the grammatical accuracy of English articles. However, written direct correction together with metalinguistic comments proved to be more effective because it assisted learners in understanding the underlying rules behind the two functions of English articles, which, in turn, promoted learning. A significantly positive association between students' gains and their aptitude for language analysis was also found. Moreover, their aptitude for linguistic analysis was more strongly linked to acquisition in the direct metalinguistic group than in the direct-only group. All participants improved their accuracy in the use of articles.

In an interesting 2-month study of the efficacy of written corrective feedback to 75 low intermediate international ESL students in Auckland, New Zealand, Bitchener (2008) compared oral and written metalinguistic feedback and investigated the effectiveness of different direct feedback combinations: (1) direct error correction with written meta-linguistic explanation (of the rule and an example of its use) and oral meta-linguistic explanation (in which discussion and clarification occurred); (2) direct error correction with written meta-linguistic explanation (of the rule and an example of its use); (3) direct error correction; and (4) no corrective feedback. Feedback was provided on only two functional uses of

the English article system (the indefinite article “a” for first mention and the definite article “the” for subsequent or anaphoric mentions). Groups one and three outperformed the control group while group two failed to do so.

When the study was extended (Bitchener & Knoch, 2008, 2009) to include an additional 69 learners, no difference was observed between the same three treatment combinations. In a two-month study (with 144 international and migrant ESL students in Auckland, New Zealand), Bitchner and Knoch (2008) investigated the extent to which different WCF options (direct corrective feedback, written and oral meta-linguistic explanation; direct corrective feedback and written metalinguistic explanation; direct corrective feedback only; no corrective feedback) help students improve their accuracy in the use of two functional uses of the English article system (referential indefinite ‘a’ and referential definite ‘the’). The study found (1) that students who received all three WCF options outperformed those who did not receive WCF, (2) that their level of accuracy was retained over seven weeks and (3) that there was no difference in the extent to which migrant and international students improved the accuracy of their writing as a result of WCF. Thus, it is possible that the larger sample size eliminated the difference in effect between group two and the other two treatment groups in the first study (Bitchener, 2008).

The results of the research study conducted by Bitchener and Knoch (2009) show similar results. They conducted a study in the English Language Department in Auckland, New Zealand. There were two structures chosen for the study: the referential indefinite article and the referential definite article, and there were four

different groups. Group one received direct error correction as well as written and oral meta-linguistic explanation. Group two received direct error correction and written meta-linguistic explanation. Group three received only direct error correction, and group four did not receive corrective feedback at all. The groups that received written corrective feedback were more successful than the group that did not receive any feedback at all, even when writing a new text seven weeks after the treatment session and the immediate post-test. They bettered their performance in accuracy using the targeted functions of the English article system (the referential indefinite article 'a' for referring to something the first time and the referential article 'the' for referring to something that has been mentioned before), and they retained the same level of accuracy when writing a new text. The authors also noted that the differences in the three different written corrective options in the post-tests were not found to be statistically significant.

In another study, Bitchener & Knoch (2010) investigated (1) the extent to which written corrective feedback (WCF) could help advanced L2 learners, who already demonstrated a high level of accuracy in two functional uses of the English article system (the use of 'a' for first mention and 'the' for subsequent or anaphoric mentions), further increase that level of accuracy; and (2) the extent to which there might be a differential effect for different types of feedback on any observed improvement. In over a 10 month period they examined the relative effectiveness of: direct error correction with written metalinguistic explanation; direct error correction with oral metalinguistic explanation; and direct feedback and no corrective feedback. Sixty-three advanced L2 learners at a university in the USA

formed a control group and three treatment groups: (1) those who received written metalinguistic explanation; (2) indirect circling of errors; and (3) written metalinguistic feedback and oral form-focused instruction. On three occasions (pre-test, immediate post-test, delayed post-test) the participants were asked to describe what was happening in a picture of a different social setting. Researchers found that each of the groups which received one of the treatment options outperformed the control group and that there was no difference in effectiveness between the three treatment groups, suggesting therefore that none of the written CF options was any more effective than any other. The special significance of this finding was its investigation over a 10 month period and therefore its longitudinal measurement of the effectiveness of different types of CF on accuracy retention.

In previous studies, metalinguistic feedback had been provided by giving a brief metalinguistic explanation of each type of error and it was necessary to identify and correct the errors in individual learners' written work. However, the type of metalinguistic explanation, Shintani and Ellis (2013) investigated differed from the type investigated in previous error correction studies. The metalinguistic explanation they investigated took the form of a handout providing an explanation of the target structure (articles), which was given to all the students when they had finished writing. Thus, no correction of individual learners' writing took place. The metalinguistic explanation in their study was a form of direct consciousness-raising (Ellis, 1997). A number of studies have shown that this is effective in developing learners' explicit knowledge. They reported that the learners who received direct WCF in their study failed to develop awareness of the rule whereas those receiving

the explicit grammatical explanation demonstrated a much better understanding, were able to use it when rewriting their original text, and demonstrated greater accuracy in a new piece of writing.

Considering the studies mentioned above, it is clear that WCF was more effective than no feedback in bringing about improvements in the accuracy of ESL learners. However, whether or not there is an advantage for meta-linguistic explanation over error correction alone for some forms/structures has yet to be confirmed. Also, it seems that there may be an advantage for meta-linguistic explanation over direct error correction alone. For example, Bitchener et al. (2005) and Sheen (2007) found an advantage for meta-linguistic explanation but this only became evident two months later in her delayed post-test. On the other hand, Bitchener (2008) and Bitchener and Knoch (2008) found no advantage for those who received meta-linguistic explanation after a similar two month period. It is possible that this difference may have resulted from intervening factors such as type, amount and delivery of meta-linguistic explanation, and other contextual variables. Further research that addresses these factors over a more extensive period of time may enable firmer conclusions to be drawn.

Another group of studies have compared the effect of direct and indirect WCF which are explained in the next session.

2.4.1.2. Studies Comparing Direct and Indirect Written Corrective Feedback

As earlier defined in the previous chapter direct corrective feedback is the provision of the correct linguistic form or structure by the teacher to the student above or near the linguistic error.

On the other hand, indirect corrective feedback is that which indicates that in some way an error has been made, but correction is not supplied. This may be provided in one of four ways: underlining or circling an error; recording in the margin the number of errors in a given line; or using a code to show where an error has occurred and what type of error it is. What they share in common is that instead of the teacher providing the target form, it is left to the learner to correct his/her own errors (Van Beuningen et al., 2012).

Some researchers have found no differences between the two CF types (Frantzen, 1995; Robb et al., 1986), others have reported an advantage for indirect CF (Ferris, 2006; Lalande, 1982), and yet others have found direct correction to be most effective in their comparisons (Bitchener & Knoch, 2010; Chandler, 2003; Van Beuningen et al., 2008).

As well as comparing direct and indirect approaches, several other studies (Robb et al. 1986; Ferris et al. 2000; Ferris & Roberts 2001) have investigated the relative effectiveness of different types of indirect feedback (coded and uncoded), but none has found any difference between the two options. Less attention has been given to a comparison of different types of direct feedback (Bitchener & Knoch, 2009).

Frantzen (1995) did a 15-week study with intermediate Spanish learners in a university setting in the U.S. She included an 'uncoded-correction' group (indirect) and a 'grammar group' (direct) that also had extensive grammar reviews and was expected to correct their errors, with additional feedback from the teacher on these corrections. She found no significant differences between the groups on accuracy

in their essays. Despite the dramatic differences in grammar treatments, she concluded that a content course, without grammar, is sufficient for accuracy in writing, at least in this case. She used two composite measures of grammar. One showed significant gains in the combined scores of the two groups, the other did not. The information presented does not allow any meaningful effect size calculation.

Lalande (1982) compared two treatments over a semester. In group one, all students' errors were corrected by the teacher; and in group 2, the teacher gave error correction using a code and the students noted all the types of errors they made. They rewrote their compositions using that feedback. The study found that students who received indirect feedback reduced their errors over time, whereas those who received direct feedback did not. However, the difference between them was not statistically significant. Lalande argued that indirect WCF is preferable because it requires reflection and problem-solving on the part of the learner, leading to more long-term growth in writing/self-monitoring ability. However, in contexts where language acquisition, not writing development, is the primary focus, SLA researchers have argued that direct WCF is more useful because it efficiently provides clear information about the specific targeted structure(s) (e.g., Bitchener & Knoch, 2010; Manchon, 2011; Van Beuningen et al., 2008; Van Beuningen et al., 2012)..

Robb et al. (1986) in their study compared four different types of corrective feedback over an academic year. Their findings report that the groups which received direct feedback and the three that received indirect corrective feedback in

varying degrees of explicitness showed no statistically significant differences in long-term gains in accuracy though all four groups improved. In a study of 134 Japanese EFL students, they explored whether the salience of indirect feedback influenced students' accuracy, fluency, and syntactic complexity. They classified indirect feedback into three subcategories: coded, non-coded, and marginal feedback. First, coded feedback is a method in which teachers provide a coding scheme that indicates the types of student errors, such as noun ending and tense, etc. Students are supposed to correct the errors themselves. Second, non-coded feedback only marks the location of the errors by underlining or circling them; teachers do not specify the error type or correct forms. Third, marginal feedback signals the number of errors per line by writing in the margin. The students have to both discover and correct their errors. The results indicated that there was no significant difference in the accuracy of students' writing among the two indirect feedback groups or the direct feedback group. The researchers noted that it was not worthwhile to provide full detailed feedback about the students' errors if the less salient feedback had the same effect as full feedback. The central issue addressed in this study was the improvement of accuracy by attending to various types of feedback treatment. This study added more evidence that students' accuracy does not improve much over a short period of time. Truscott (1996) claimed that while this study was not strictly controlled, it was equivalent to a controlled study because the information presented to the third group was so limited that it could not have been helpful, so this group can be treated as a no-correction (control) group.

One study in which the type of error corrected seemed to influence language learning is one by Ferris (2006). She found that error codes (indirect feedback) helped learners to improve their accuracy over time in only two of the four categories of error she investigated, i.e. in total errors and verb errors but not in noun errors, article errors, lexical errors or sentence errors (e.g. word order errors). Ferris (2006) reported that error codes helped students to improve their accuracy over time in only two of the four categories of error she investigated. Longitudinal comparisons between the number of errors in students' first and fourth compositions showed improvement in total errors and verb errors but not in noun errors, article errors, lexical errors, or sentence errors). Ferris (2006) found that the students were able to reduce in their third drafts about 80% of all error categories marked by the teacher on the second drafts (short-term effect), with the exception of errors in idiom and subject/verb agreement categories. However, this study, like that of Ferris (1997), does not involve a control group.

Bitchener and Knoch (2010), reported a statistically significant difference between direct and indirect CF and found the advantage to be in favor of the direct approach. Whereas in this study direct and indirect CF proved to be equally effective in improving learners' accurate use of English articles over a one week period, only the effect of the two direct CF treatments was still present ten weeks later. Bitchener and Knoch (2010) investigated (1) the extent to which written corrective feedback (CF) can help advanced L2 learners, who already demonstrate a high level of accuracy in two functional uses of the English article system (the use of 'a' for first mention and 'the' for subsequent or anaphoric mentions), further

increase that level of accuracy; and (2) the extent to which there may be a differential effect for different types of feedback on any observed improvement. Sixty-three advanced L2 learners at a university in the USA formed a control group and three treatment groups: (1) those who received written metalinguistic explanation; (2) indirect circling of errors; and (3) written meta-linguistic feedback and oral form-focused instruction. On three occasions (pre-test, immediate post-test, delayed post-test) the participants were asked to describe what was happening in a picture of a different social setting. Significant differences were found in the level of accuracy on (1) the immediate post-test piece of writing between the control group and all three treatment groups; and (2) on the delayed post-test piece between the control and indirect groups and the two direct treatment groups.

Similarly, findings of Chandler (2003) suggests that students who received direct feedback could instantly internalize the correct form, whereas students who revised their texts based on indirect error correction were not able to do so, since they did not know whether their own hypothesized corrections were indeed accurate. The study also deduced that direct error correction motivated students because direct feedback improved students' writing accuracy from initial to subsequent drafts while students in indirect corrective treatment committed more errors at Test 3 than Test 1. Chandler (2003) presented three main arguments in support of more direct types of feedback. First, it has been suggested that direct feedback is more helpful to students because it reduces the type of confusion that can occur if learners fail to understand or remember what the feedback is saying. For example, in situations where error codes are provided, it is argued that students

may not always understand or remember what they refer to. The second argument in support of direct feedback is that it provides learners with sufficient information to resolve more complex errors (for example, errors in syntactic structure and idiomatic usage). The third advantage that has been identified concerns the belief that direct feedback provides learners with more immediate feedback on hypotheses that they may have made.

In the same vein, Van Beuningen et al. (2008)'s study investigated the effect of direct and indirect corrective feedback on 62 learners of Dutch in an experiment set up with three phases. Learners were grouped into three major groups that received treatment in the form of direct corrective feedback, indirect corrective feedback, practice writing and self-correction for the control group.

Results revealed that all students who had the opportunity to revise their written products produced fewer errors in their revisions than in the initial texts. However, the study concluded that direct error correction appeared to be a more effective treatment for that study's population and resulted in short and long term accuracy improvement.

In an attempt to investigate the role of direct and indirect written corrective feedback in improving EFL students' writing skill, Hosseiny (2014) conducted in research in Iran. The participants were sixty pre-intermediate students in "Iranians" institute in Ardabil (Iran). Twenty students were in direct-feedback group, twenty students were in indirect-feedback group and twenty students were in no-feedback group. Two direct-feedback and indirect-feedback groups received the treatment in terms of giving feedback about their errors while the no-feedback group did not

receive any kind of feedback. The results of this study reported that the indirect corrective feedback on error helped the learners improve accuracy in their writing.

Moreover, Van Beuningen et al. (2008) cautiously suggested that direct CF might be more beneficial than indirect correction. The difference when the direct and indirect CF treatments were compared against each other did not reach significance, at a p-value of .06, but when each treatment was compared to the two control (no CF) conditions, only the learners receiving direct CF significantly outperformed pupils in the control groups when writing a new text.

In general, the results of studies that have investigated direct vs. indirect written corrective feedback are very mixed. Limitations in the design and execution of these studies and differences in their contexts and in the proficiency level of their participants make it difficult to assess the value of the claims that are made.

Several studies suggest that indirect corrective feedback is generally preferable to direct feedback (for example: Lalande, 1982 and Ferris, 2006). It is often preferred to direct feedback on the grounds that it caters to 'guided learning and problem solving' and encourages students to reflect on the linguistic forms. For these reasons, it is considered more likely to lead to long-term learning (Ferris & Roberts, 2001). Ferris (2006, 2011) concluded that, in the long term, indirect feedback may have greater potential to help students learn to monitor their writing autonomously. Students also tend to favor an indirect approach, with errors labeled by type (Ferris, 2006; Ferris & Roberts, 2001), as long as the code does not lead to confusion. However, this hypothesis has not yet been confirmed since the results from studies exploring the relative effectiveness of direct and indirect feedback

(e.g. Chandler, 2003, Ferris et al., 2000, Frantzen, 1995; Lalande, 1982, Rob et al., 1986) are inconclusive.

Although it has been shown in some studies that indirect CF on L2 writing can be effective, some other studies on the feedback practices of language teachers highlight that many teachers favor direct CF over indirect CF (Furneaux et al., 2007; Guenette & Lyster, 2013). A new emergent pattern evolves in Ferris & Helt's (2000) study which revealed that whereas indirect correction proved to be most effective in improving students' accuracy in subsequent writing, students who received direct feedback made the most accurate revisions.

While not dismissing the value of indirect feedback, those more in favor of a direct approach (for example: Ferris et al., 2000; Ferris & Roberts, 2001; and Komura, 1999) suggest that direct feedback reduces the kind of confusion that can result when students fail to understand or remember the meaning of error codes used by teachers. Ferris and Roberts (2001) explain how this can easily occur with lower proficiency learners.

In a longitudinal study, Ferris et al. (2000) investigated the effects of different treatment conditions on both text revisions and new pieces of writing. They examined both short term and long term effects of written feedback. Discussing the findings of the study, direct feedback seemed to help students more than indirect feedback make correct revisions from one draft to the next (direct = 88%, indirect = 77%). However, as the semester continued, indirect feedback helped students reduce error frequency more than direct feedback. This would suggest that due to the immediate comprehensibility direct feedback is more easily applied to make

revisions. This study would also suggest that in relation to long-term learning, indirect feedback facilitates more student improvement

Ferris and Roberts (2001) examined the effects of three different feedback treatments (errors marked with codes; errors underlined but not otherwise marked or labelled; no error feedback) and found that both error feedback groups significantly outperformed the no feedback control group, but, like Robb et al. (1986), they found that there were no significant differences between the group given coded feedback and the group not given coded feedback. They compared the effect of three kinds of feedback on the way three groups of ESL students edited their writing. The results of the study, supporting grammar error feedback, indicated that the two feedback groups were more successful than the no-feedback group in self-editing their writing. However, no significant difference was found between the two feedback groups. With respect to the grammatical categories, in the first draft of these essays, all the participants of the study made the highest percentage of errors in the verb category followed by the sentence structure category and then the word, noun ending, and article errors, respectively. In the second drafts written by the two feedback groups, the highest percentage of correction happened in the noun ending errors and then in the verb and article categories, followed by word and sentence structure, respectively. These percentages turned out to be significantly lower than the corresponding percentages belonging to the participants who received no feedback. For the no feedback group, however, the highest percentage of correction happened in the word errors and then in the article errors, sentence structure errors, verb category errors, and noun ending

errors, respectively. According to Ferris and Roberts, these errors are classified into treatable (article, verb, and noun ending errors) and untreatable (sentence structure and word category). The treatable errors are the ones that can be corrected by the students when they receive feedback from the teachers. The untreatable errors, however, are those that are not so much sensitive to the teachers' feedback and might be improved even in the absence of it. On the whole, the findings showed that the students in the two feedback groups made more corrections in the treatable errors while those in the no-feedback group made more improvement in the untreatable errors. Ferris and Roberts' investigation found a positive effect for both types of written corrective feedback, but it involved only text revisions.

Leki (1991) and Roberts (1999) have also pointed out that students sometimes feel that indirect feedback does not provide them with sufficient information to resolve more complex errors such as idiosyncratic and syntactic errors.

Although several studies have compared direct and indirect approaches, clear empirical evidence on the differential effects of direct and indirect CF on accuracy development is lacking, as research on the issue has produced conflicting results. Moreover, these studies vary enormously in at least four ways: how these two types of feedback were operationalized, whether the feedback was focused or unfocused, the nature of the writing tasks investigated, and the kinds of learners they investigated. Several of the studies also suffer from various design problems (as discussed by Ferris, 2004, and Truscott, 2007), in particular, the absence of a control group.

From this rather limited research base and its conflicting findings on the relative merits of direct and indirect feedback options, firm conclusions will only become available if further research, incorporating both types within the design of a single study, is carried out. Furthermore, it shows that the effects of the CF are evident not just immediately following the CF treatment but in the long-term. This suggests that it has contributed to change in the learners' implicit L2 knowledge. Further research is therefore required in this area.

Given the inconclusive findings reported with corrective feedback, several researchers have proposed alternative methods of feedback, which, in contrast with the itemized nature of corrective feedback, are markedly textual in orientation. These include the reformulation of students' written texts (e.g., Adams, 2003; Qi & Lapkin, 2001) or the use of model texts against which students compare their original output (e.g., Hanaoka, 2006, 2007; Hanaoka & Izumi, 2012). They are explained in the next section

2.4.1.3. Studies on Reformulation

Reformulation involves rewriting a learner's text, preserving all its ideas but removing lexical inadequacies, grammatical errors, and ambiguities, so that it appears as native like as possible (Qi & Lapkin, 2001), whereas, in the case of modeling, learners are provided with model texts that are tailored to the learners' age and proficiency level as well as to the content and the genre of the writing task at hand.

It is claimed that both reformulations and models provide learners with a wide range of lexical, syntactic, and discursive alternatives that, when learners contrast them with their own writing, can lead learners to engage in deeper processing than with more traditional CF strategies (Hanaoka, 2007 ; Hanaoka & Izumi, 2012 ; Qi & Lapkin, 2001).

Such assertions obviously assume that learners will be able to engage with feedback (Kormos, 2012; Wigglesworth & Storch, 2012), to notice the alternatives to their own writing included in reformulations and models, and to perceive them as attainable. The effects of these alternative feedback approaches have been tested empirically in a variety of studies. However, the use of reformulation as a feedback strategy is mostly explained here, because it is applied in this study.

A number of studies have demonstrated the usefulness of reformulation in promoting learners' noticing (e.g., Adams, 2003; Lapkin et al., 2002; Qi & Lapkin, 2001; Swain & Lapkin, 2002; Tocalli-Beller & Swain, 2005; Yang & Zhang, 2010).

Research carried out to date on reformulation has highlighted its potential benefits for language learners of different ages and proficiency levels, working either individually (Qi & Lapkin, 2001) or on collaborative writing tasks (Adams, 2003 ; Lapkin et al., 2002 ; Swain & Lapkin, 2002 ; Tocalli- Beller & Swain, 2005). In these studies, learners who compared their original writing to reformulated versions of their texts were seen to improve the accuracy of their written output to varying degrees after incorporating lexical and grammatical features they had noticed in the feedback.

Qi and Lapkin (2001) argued that written error correction “does not provide optimal conditions to help learners notice their errors, that is, the gap between their interlanguage (IT) and target language (TL) when they receive and process the feedback” (p. 280). As an alternative, they suggested the use of reformulation. Qi and Lapkin (2001) suggested that a reformulation is rich and “positive modeling of native-like writing may be more helpful to the learner than error correction” (p. 295). It is also possible to speculate, as previous researchers have, that active engagement in attempting to identify and understand errors might be helpful as well. Qi and Lapkin (2001) addressed the relationship between output and noticing and their subsequent effect on the writing process. Using a multistage writing task, these researchers showed that noticing of linguistic problems during the original composing stage influenced what learners noticed in the reformulated writing they received in the subsequent comparison stage. Moreover, it was claimed that the quality of noticing that occurred during the comparison stage affected the revisions made in the final written product. Qi and Lapkin (2001) suggested that reformulation is a valid pedagogical tool to promote learners’ noticing in accordance with their perceived needs.

As mentioned above, while Qi and Lapkin (2001) examined learners’ noticing in the condition of writing individually, subsequent reformulation studies (e.g., Adams, 2003; Lapkin et al., 2002; Swain & Lapkin, 2002; Tocalli-Beller & Swain, 2005) investigated what their participants noticed in collaborative work. These studies also reported the beneficial role of reformulation in promoting language-related noticing and metalinguistic reflection.

Reformulations have also been compared to more traditional methods of CF. Two recent studies (Sachs & Polio, 2007; Santos et al., 2010) compared the effectiveness of reformulation and error correction (i.e., traditional feedback condition where each error is corrected in isolation) and found an advantage of error correction over reformulation in improving learners' linguistic accuracy.

In two separate studies described in Sachs and Polio (2007), Error correction was found to be more beneficial than reformulations in promoting accuracy gains in the revised written output of university students. The authors argue that the saliency of the corrected errors in the original texts led the learners to memorize the linguistic changes in the feedback, rather than to search for differences in the reformulated versions. Sachs and Polio (2007) reported an interesting study that compared reformulation with direct error correction. Sachs and Polio (2007) examined the effectiveness of written error correction versus reformulations of FL learners' writing as two means of improving learners' grammatical accuracy on a three-stage composition-comparison-revision task. Fifteen adults participated in a repeated-measures study with three experimental conditions: error correction, reformulation, and reformulation with think-aloud. All participants had to write a 30-min picture description. The participants in the first experimental condition had to look at written error corrections of the story for 15 minutes on the next day. After that, they revised a clean copy of the original story without access to the corrections. The participants in the second experimental condition had to compare the story to a reformulated version for 15 minutes, and then to revise a clean copy of the original story without access to the reformulation. The participants in the third experimental

condition had to compare the story to a reformulated version while thinking aloud. After that, they had to revise a clean copy of the original story without access to the reformulation. In their study, the students were shown their reformulated/corrected stories and asked to study them for 20 minutes and take notes if they wanted. Then, one day later, they were given a clean sheet of paper and asked to revise their stories but without access to either the reformulated/corrected texts or the notes they had taken. Both the groups that received reformulation and corrections outperformed the control group. However, the corrections group produced more accurate revisions than the reformulation group. As Sachs and Polio (2007) point out, reformulation is a technique that is not restricted to assisting students with their surface level linguistic errors; it is also designed to draw attention to higher order stylistic and organizational errors. Thus, their study should not be used to dismiss the use of reformulation as a technique for teaching written composition. Nevertheless, it would seem from this study that it does not constitute the most effective way of assisting students to eliminate linguistic errors when they revise.

Similar results were found by Santos et al. (2010) with high school students. Their findings confirmed the superiority of EC over reformulations with regard to the uptake of grammar, lexis, and discourse, with reformulations giving rise to mainly lexical revisions.

Both of the above studies have provided evidence of the effectiveness of EC for developing learners' accuracy in essay revisions and offer support, therefore, for the potential of this feedback strategy for developing language learning.

Other studies that have compared the use of reformulation and modeling (e.g., Hanaoka, 2007; Hanaoka & Izumi, 2012 ; Yang & Zhang, 2010) have highlighted the fact that each feedback strategy activates different but complementary attentional processes in learners. Whereas reformulations can help learners identify linguistic inadequacies in their own texts when they compare their writing with a more target-like version, models appear to be useful not only for focusing learners' attention on new vocabulary and expressions but also for helping them to extend their original meanings by providing alternative ideas and content.

In this respect, Yang and Zhang (2010) conclude that reformulations may provide learners with samples of good writing on particular sentences, whereas model texts can offer them “a good sample of native writing for not just the specific sentence but the whole discourse as well” (p. 480).

Thus, while being a potentially useful approach, previous SLA-oriented L2 writing research shows mixed support for the use of reformulation in aiding learner noticing and revising processes in L2 writing. More robust evidence is required before stronger claims can be made in this direction. Without further investigation into the variables—such as age, proficiency level, error types, and learning conditions, among others—that mediate learners' use and retention of feedback, it is still not clear how extensive this potential actually is (Bitchener, 2012).

In a case study, Qi and Lapkin (2001) investigated to what extent noticing affected L2 writing improvement with two students, one with a higher proficiency level and the other with a lower proficiency level. From the findings it is suggested that composing and reformulating promote noticing, but high level proficiency

students are more successful in implementing the reformulated correction, while low level students are not successful in revising their writing if it is reformulated. This may be because low level proficiency students cannot comprehend the reformulated style completely.

Another study of error correction in the form of reformulation was completed by Brooks and Swain (2009). In this study, students participated in four tasks. First, a pair of students wrote a story collaboratively and second, compared it to a reformulated version. This second session was recorded for the third step, which was a variation on a stimulated recall in which the researcher viewed the session with the participants answering questions and scaffolding was provided by an interlocutor. Finally, the students were asked to revise the original essay without seeing the reformulations. Brooks and Swain noted that the participants used different experts to help them revise their work: their peer, the reformulation, and the researcher. The results showed that depending on the difficulty of the language in relation to the developmental level of the students, these sources varied in terms of how successful they were in helping the learners solve a linguistic problem.

In general, in the array of studies synthesized and reviewed above, it could be argued that the nature of text produced by participants does not truly constitute *writing* or *composition*. In fact, it could be mentioned that many (perhaps most) reformulation procedures involve little to no ideational creativity (a fundamental feature of genuine writing); further, reformulation procedures and interventions most often aim to provide L2 learners with opportunities for language practice.

Writing researchers not only investigate the general effectiveness of WCF but they also examine the particular aspects of writing which are expressed below.

2.4.2. Degree of Explicitness of Written Corrective Feedback

One of the aspects which much debate has been centered on is whether more or less explicit WCF is more beneficial in helping students improve their writing. So, classification of the explicitness of WCF is an issue debated in the literature. It also led us to provide a continuum of different degree of explicitness of WCF that will be explained in the chapter four.

The first issue in this section is the definition of explicitly. Polio (2012) considers any explicit attempts to draw a learner's attention to a morph-syntactic or lexical error as error correction. Following Norris and Ortega (2000), Polio (2012) uses DeKeyser's (1995) definition of explicit and says that something is explicit if either a rule is given or if the learner has been directed to pay attention to a specific form. Thus, all methods of WCF are considered explicit including what Ellis (2009) has classified as reformulation. Unlike recasts in oral error correction, which are generally considered implicit, written reformulation can be considered explicit because students, at least in experimental studies (e.g., Qi & Lapkin, 2001; Sachs & Polio, 2007) are told to look at the reformulations and note what has been changed. In other words, they know that they are being corrected and told to pay attention to those corrections.

Although, one of the most frequently investigated question in L2 writing has been the degree of explicitness required for learning and acquisition and the

arguments supporting different types of WCF are presented in the literature, the second issue is the unclarity and inconsistency of research findings on WCF.

Bitchener (2012) believed that intuitively one might expect metalinguistic information to be the most effective type of CF because, if it provides explicit rules, explanations, and examples, learners might be able to increase their understanding and process more deeply the knowledge they have been provided with. However, this may be dependent upon (1) the nature of the information provided, (2) the frequency with which they receive it, (3) the proficiency level of the learner, (4) the ability of the learner to relate it to other linguistic knowledge that s/he may also be processing and consolidating, and (5) the complexity of the linguistic focus). In addition, it is worth to mention that learner differences clearly coincide with how much WCF is noticed and converted to intake by L2 writers.

Similarly, Ferris et al. (2013) assumed that more Explicit WCF (with labels, codes, or other metalinguistic explanation) may be more valuable for some students than unlabeled CF (Bitchener, 2008; Bitchener & Knoch, 2008, 2010; Bitchener et al., 2005; Ellis et al., 2008; Ferris, 2006; Ferris & Roberts, 2001; Sheen, 2007). This finding may especially apply to L2 learners (e.g., those in EFL contexts) who have received a great deal of formal grammar instruction. They may benefit from WCF that includes specific terms or rule reminders, as the codes, corrections, or explanations may elicit their prior knowledge.

Whether the degree of explicitness plays a role in the development of writing is also a theoretically and pedagogically important issue to be considered. Theoretically, if the more explicit kinds of WCF are more helpful than less explicit

ones, theoretical explanations that describe and predict how the learners acquire L2 should consider these differences as empirical evidence and L2 learning conditions. Pedagogically, it helps teachers to know whether more or less explicit WCF can help learners to improve the most.

As mentioned earlier, research on WCF has not produced consistent and clear findings about the degree of explicitness of feedback. Furthermore, it seems that no study has considered this issue and its effect on explicit and implicit knowledge (Bitchener, 2012).

2.4.3. Explicit and Implicit Knowledge

Another aspect that is considered in writing research is whether WCF helps to improve the learners' implicit or explicit knowledge. Krashen (1982, 1985, 1994, 1999) distinguished between acquisition and learning while Ellis (2004) and others have distinguished between implicit unconscious procedural knowledge and explicit declarative knowledge.

Implicit language knowledge refers to knowledge of a language that may be accessed instantaneously during spontaneous comprehension or production. It differs from explicit language knowledge, which is knowledge about language and how the language can be used (Motoko, 2012).

In general, disagreements concern the value of explicit and implicit knowledge in itself and the connection between explicit and implicit knowledge. This debate is important when exploring the effectiveness of error correction, because CF contestants (e.g. Krashen, 1982; Truscott, 1996) have stated that, if CF yields any

L2 knowledge at all, this emerging knowledge could only be explicit in nature. However, Ferris (1999) believed that if the correction was clear and consistent, it would work for acquisition (implicit knowledge). A number of recent studies also (e.g., Sheen, 2007; Ellis et al., 2008) have produced evidence to show that WCF can result in acquisition.

Reviewing literature relating to this controversy, Hyland and Hyland (2006) commented that “it is difficult to draw any clear conclusions and generalizations from the literature as a result of varied populations, treatments and research designs” (p. 84), implying that contextual factors influence the extent to which CF is effective.

Irrespective of the value of explicit and implicit knowledge in itself, it may be the case that explicit knowledge aids the development of implicit knowledge (Van Beuningen, 2010). This idea is supported by the “Skill Acquisition Theory” that will be explained later in this chapter (in section 2.4). Many SLA researchers also seem to converge on the position that there is an interface connecting implicit and explicit knowledge bases (e.g. DeKeyser, 1998; Hulstijn, 1995; McLaughlin, 1990; Schmidt, 1990; Schmidt & Frota, 1986; Swain, 1985). Drawing on Skill Acquisition Theory (e.g. DeKeyser, 1998), they propose that the gap between explicit knowledge and language use can be gradually bridged by output practice (DeKeyser, 2003). By practicing language production, L2 learners are able to consolidate and automatize their linguistic repertoire. CF is believed to further assist this proceduralization of declarative L2 knowledge (Ellis, 2010).

However, those opposing the effectiveness of CF adhere to the position that explicit and implicit knowledge systems are entirely distinct, without an interface connecting them. This view is strongly related to Krashen's (1982; 1985) proposed distinction between learning and acquisition. According to Krashen, acquisition of implicit knowledge unfolds unconsciously, whereas learning always involves conscious effort, and can only result in explicit knowledge gains. Since, in his view, internalizing linguistic knowledge takes place in two fundamentally different ways, resulting in two separate knowledge bases, Krashen stated that explicit knowledge could never be converted into implicit knowledge.

In addition to the issues discussed above, there are some other factors that might mediate the effectiveness of WCF. Two important factors are the focus of WCF and the selection of error that are explained below.

2.4.4. Focus of Written Corrective Feedback

Writing researchers have also been interested in finding out whether focused or unfocused WCF is more effective in improving the accuracy of the learners. Ellis et al. (2008) made a distinction between 'unfocused' and 'focused' CF. The former corresponds to what might be considered normal practice in writing instruction (although not necessarily what L2 writing researchers advocate); teachers correct all (or at least a range of) the errors in learners' written work. This type of CF can be viewed as 'extensive' because it treats multiple errors. In contrast, 'focused' WCF is the correction that is provided for specific error types (either predetermined by the researchers for the study or based on individual writers' needs) and ignores other errors. Highly focused CF will focus on a single error type (e.g. errors in the

use of the past simple tense). Somewhat less focused CF will target more than one error type but will still restrict correction to a limited number of pre-selected types (e.g. simple past tense; articles; prepositions) (Ferris et al. 2013).

Ellis et al. (2008) suggested that there are solid theoretical reasons for believing that focused CF will be more effective than unfocused CF. Learners are more likely to attend to corrections directed at a single (or a limited number of) error type(s) and more likely to develop a clearer understanding of the nature of the error and the correction needed. If attention and understanding are important for acquisition, as cognitive theories of L2 acquisition have claimed (e.g. Schmidt, 1994; Ellis, 2005), then focused CF is clearly better equipped to produce positive results. It has also been suggested (Ellis, 2005; Schmidt, 1994) that focused feedback might be more effective for lower proficiency learners because it places a lighter attentional load on their processing capacity.

Methodologists also generally advise teachers to focus attention on a few error types rather than try to address all the errors learners make (for example, Harmer, 1983, and Ur, 1996). Similarly, SLA researchers see merit in a focused approach. Indeed, such an approach is necessary in experimental studies of CF as researchers need to predetermine which errors to correct in order to design appropriate testing instruments.

Interestingly, recent studies (Bitchener et al., 2005; Sheen 2007; Ellis et al., 2008) have shown that when WCF is “focused” it is effective in promoting acquisition. It is more valuable than unfocused CF (Bitchener & Knoch, 2009, 2010; Ellis et al., 2008; Sheen, 2007; Sheen et al., 2009; Van Beuningen et al.,

2012). SLA studies of oral CF also have increasingly investigated focused as opposed to unfocused correction with plenty of evidence of its efficacy (e.g., Han, 2001; Lyster, 2004; Bitchener et al., 2005). So, recent studies with increasingly consistent design have shown evidence that WCF improves grammatical accuracy in future writings, typically focusing narrowly on a single grammatical feature to track development (Bitchener, 2008; Bitchener & Knoch, 2010; Ellis et al., 2008; Sheen, 2007).

Ellis et al. (2008) pointed out that at least a somewhat focused approach follows cognitive theories of L2 acquisition by helping students focus attention. Such an approach seems most useful if priority areas can be identified based on learners' output or developmental readiness.

While a focused approach has intuitive appeal for improving accuracy on particular grammar features, it may have limited application for L2 writing classrooms, where students need to deal with a range of language features simultaneously to develop overall accuracy and self-editing skills (Bruton, 2009; Evans et al., 2010; Ferris, 2010). In this respect, Evans et al. (2010) and Hartshorn et al. (2010) took a more classroom-oriented approach, outlining guidelines for what they termed dynamic CF, in which they address a wide range of errors simultaneously. They argued for written CF that is comprehensive but manageable, timely, and constant, with short texts and frequent provision of CF that is returned quickly to students. They concluded that course and assignment goals may help instructors determine whether a focused or comprehensive approach to feedback—

or a combination of both depending on the task—is most suitable for their specific context.

Truscott (1996) suggests that WCF is unlikely to be effective if it is provided on too comprehensive a range of error categories. While the comprehensive approach may not prevent learners from accurately revising a number of errors in a single text, it may not enable learners to demonstrate equally positive improvements in their writing of new texts over time. On the other hand, he also discounts a more selective approach (whereby a few error categories are consistently corrected over a period of time). Referring to only one study (Hendrickson, 1981), he claims that there is evidence to suggest its ineffectiveness.

The proponents of focused WCF approach (Bates et al., 1993; Ferris & Hedgcock, 2005; Ellis et al., 2008, etc.) believed that instructors should not mark every grammatical, vocabulary, or mechanical error that occurs throughout the entirety of a student paper; rather, they should identify a limited number of error types and mark only those. This strategy not only saves time for the instructor but also potentially allows students to recognize patterns of error within their writing, avoid being overwhelmed by teacher feedback, and develop independent editing skills in that they – and not the instructor – are then responsible for locating and addressing errors that are unmarked. As a result, selective error treatment is sometimes said to foster second language acquisition.

Despite its advantages, however, a selective approach to error treatment may be challenging – particularly for novice instructors – in that it can require teachers to make decisions regarding which and how many error types to address based

mostly on intuition. In addition, misunderstandings between an instructor and a student may occur when an instructor uses a selective approach, but students believe that errors are being marked comprehensively. In this case, not only do students fail to benefit from the additional editing practice a selective approach affords, but because they are only addressing a portion of the total number of errors as they prepare their final drafts, their grades may suffer, as well. However, according to Bitchener (2012) ‘the jury is still out on whether focused or unfocused CF is more effective’.

Some studies examined the effect of corrective feedback only on unfocused error types (Hartshorn et al., 2010; Storch, 2009; Truscott & Hsu, 2008; Van Beuningen et al., 2008) and some others (Bitchener, 2008; Bitchener & Knoch, 2009; Sheen, 2007) explored only the effect of focused feedback given only on a limited number of errors, though, it is only recently that researchers have started to examine the effect of focused written CF, which is directed at a single linguistic feature. Moreover, there is even less research (e.g., Ellis et al., 2008; Sheen et al., 2009) that has compared focused and unfocused written CF (i.e., CF directed at a wide range of linguistic features). However, these studies reported contradictory results.

Considering the studies that compared focused and unfocused written corrective feedback, Ellis et al. (2008) and Sheen et al. (2009) compared between the effects of writing corrective feedback types.

Ellis et al. (2008) compared the effects of focused and unfocused corrective feedback on two experimental groups’ use of definite and indefinite articles. While

one experimental group received focused corrective feedback, the other received unfocused corrective feedback. However, the control group received no error correction. Results revealed that both experimental groups outperformed the control group in terms of reducing article errors.

Similarly, Sheen et al. (2009) also investigated (1) focused, (2) unfocused written corrective feedback and (3) no feedback. For the focused corrective feedback treatment, feedback was provided on English definite and indefinite articles; whereas, for the unfocused corrective feedback group, feedback was provided on articles, copula 'be' regular past tense, irregular past tense, and prepositions. The results revealed that both corrective feedback groups significantly improved in accuracy but the focused CF group outperformed the unfocused and control treatment groups. Researchers concluded that focused corrective feedback aimed at specific linguistic aspects results in greater grammatical accuracy than unfocused corrective feedback aimed at several linguistic categories.

As mentioned earlier, the most recent line of research has turned to focused WCF, which investigates students' abilities to improve one grammatical element in their writing. So, limited research has focused on the role of written CF for helping learners acquire specific linguistic forms and structures. Those that have been published have tended to investigate the effectiveness of written CF for treating discrete, rule-based items. Bitchener (2008) has been foremost in this research by pursuing a line of inquiry based on sound research design principles (Bitchener, 2008; Bitchener & Knoch, 2010; Bitchener et al., 2005).

Bitchener et al. (2005) found corrective feedback to be effective on certain error types, such as simple present tense and the definite article. Building on these findings, Bitchener has undertaken a number of studies in which corrective feedback has been focused on and shown to improve the use of definite articles in subsequent writing (Bitchener, 2008; Bitchener and Knoch, 2008, 2009, 2010).

While these findings are encouraging and are based on careful research designs that earlier studies lacked, the findings may be too focused to be practical. Despite Bitchener and Knoch's (2010) claim that a focused approach has practical applications, L2 writing teachers and their students must deal with writing that contains many error types, some of which are far more distracting than misused or missing definite articles. As Ellis et al. (2008) suggest, "we need more studies looking at different grammatical features" (p. 368).

Some research does not support focused writing corrective feedback. For example, Sheppard (1992) reported that the participants who received holistic feedback outperformed those who received writing corrective feedback in both grammatical accuracy and linguistic complexity. Storch (2010) lent support to this finding and pointed out that the evidence in support of writing corrective feedback is not very strong. He also demonstrated, 'to accurately measure changes in accuracy in response to WCF [writing corrective feedback], researchers would need to trace each type of error which received feedback.

In general, the bulk of the written CF studies has examined unfocused correction (i.e. a wide variety of learner errors were corrected). The studies that have shown written CF to be effective have all been much more narrowly focused,

addressing the effects of CF directed at specific grammatical features. It remains a possibility that unfocussed written CF is ineffective (or even damaging, as Truscott (2007) suggests while narrowly focused CF is effective. Truscott (1999) himself acknowledged that it might be possible for highly focused written correction to affect acquisition.

We need to know how focused CF needs to be to enable learners to attend to (and perhaps also to understand) the corrections. A mass of corrections directed at a diverse set of linguistic phenomena (and perhaps also at content and organizational issues) is hardly likely to foster the noticing and cognizing that may be needed for CF to work for acquisition. In contrast, correction directed repeatedly at a very specific grammatical problem may well have greater effect, as studies of oral CF have shown. It seems that this distinction may not have been successfully operationalized. So there is an obvious need for further research here.

2.4.5. Selection of the Error (s) to Correct

Another mediating issue in WCF studies is the type or types of target structure. Various proposals have been advanced regarding which errors to correct.

Corder (1967) distinguished “errors” and “mistakes.” An error takes place as a result of lack of knowledge (i.e., it represents a gap in competence). A mistake is a performance phenomenon, reflecting processing failures that arise as a result of competing plans, memory limitations, and lack of automaticity.

Moreover, Burt (1975) made a distinction between “global” and “local” error, suggesting that teachers should focus on “global” rather than “local errors”. Global

errors are errors that affect overall sentence organization. Examples are wrong word order, missing or wrongly placed sentence connectors, and syntactic overgeneralizations. Local errors are errors that affect single elements in a sentence (for example, errors in morphology or grammatical functions).

Ferris (1999) similarly differentiated between “treatable” and “untreatable” errors, suggesting that WCF be directed at treatable errors. Treatable errors are those that can be prevented through the application of systematic grammar rules. These include verb tense and form, subject-verb agreement, article usage, plural and possessive noun endings, and sentence fragments. Untreatable errors are those that result from ignorance of idiosyncratic language rules that must be acquired over time. These would include many word choice and sentence structure errors. Others, including Ellis (1993), have suggested that CF be directed at marked grammatical features or features that learners have shown they have problems with (that was the case in this study).

In fact, none of these proposals are easy to implement in practice. The distinction between an “error” and a “mistake” is nothing like as clear-cut as Corder (1967) made out. The gravity of an error is to a very considerable extent a matter of personal opinion. Vann et al. (1984), for example, found that some teachers were inclined to view all errors as equally serious—“an error is an error.” There is no widely accepted theory of grammatical complexity to help teachers (or researchers) decide which rules are simple and portable or to determine which features are marked. Hard-pressed teachers often do not have the time to ascertain which features are problematic.

In testing the value of the distinction between treatable and untreatable error, Ferris et al. (2000) report a number of mixed but useful results from error correction. For treatable errors, there was a dramatic improvement with verb tense and form along with a slight improvement with noun ending errors and worse performance with article errors. For untreatable errors, there were slight improvements from earlier lexical errors and worse performance with sentence structures. Also, in the analysis of text revisions, Ferris and Roberts (2001) found fewer verb and noun ending errors as well as greater accuracy in the use of articles.

Ferris's (2011) distinction between treatable and untreatable errors has also important implications in deciding the explicitness of CF. A more treatable error category, such as subject-verb agreement, lends itself to an indirect approach because students can reference straightforward rules to self-correct, while untreatable idiosyncratic errors, such as word choice, require students to use acquired knowledge to make corrections.

In his 2007 article, Truscott claimed that syntactic errors in particular might not be amenable to correction, because they are integral parts of a complex system that—in Truscott's view—is impermeable to CF. He furthermore suggested that morphological features are unlikely to benefit from CF because their acquisition not only depends on the understanding of form but also of meaning and use in relation to other words and portions of the language system. Truscott (2001, 2007) concluded that if CF has any value for L2 development, this could only be true for “errors that involve simple problems in relatively discrete items” (Truscott, 2001)—such as spelling errors—and not for errors in grammar.

A number of studies explored the effects of CF on separate error types, and all reported differing levels of improvement for different types of errors (e.g., Bitchener et al., 2005; Ferris, 2006; Ferris & Roberts, 2001; Frantzen, 1995; Lalande, 1982; Sheppard, 1992).

Ferris (2006), for example, differentiated among five major error categories: verb errors, noun errors, article errors, lexical errors, and sentence errors. She found that students receiving CF only experienced a significant reduction from pretest to posttest in verb errors. Lalande (1982) distinguished 12 error types and observed that correction only led to a significant decrease in orthographical errors. Bitchener et al. (2005) investigated how focused CF influenced learners' accuracy development on three target structures and found that CF had a greater effect on the accuracy of past simple tense and articles than on the correct usage of prepositions.

Although many studies have revealed that written corrective feedback has the potential to effect change in written accuracy when certain linguistic forms and structures are targeted (e.g. past simple tense, some functional uses of the English article system) but to date research has not been carried out to examine the extent to which written corrective feedback can treat the error identified as the most problematic for the specified group of learners. Thus, framed within Skill Acquisition Theory, this study sought to investigate whether or not written corrective feedback could also be effective in targeting the problematic error category in the texts of FL writers. In the next section we will shed more light on the theoretical framework of the study.

2.5 Theoretical framework of the Study

2.5.1 Skill Acquisition Theory

Anderson's Skill Acquisition Theory, best represented in L2 acquisition by the work of DeKeyser (2007a, 2007b), is a general theory from cognitive psychology that can be applied to all complex skills, not just language learning. McLaughlin (1987) explains that it is appropriate to view L2 learning in this light because it involves the acquisition of a cognitive skill: learning is a cognitive process, because it is thought to involve internal representations that regulate and guide performance.

Moreover, the theory states that information may be processed in either a controlled (drawing on explicit knowledge) or automatic (drawing on implicit knowledge) manner and that learning involves a shift from controlled toward automatic processing. It explains that intentional learning can play a role in the controlled phase and, through 'practice' or 'repeated activation,' become automatized over time. In other words, it accommodates the view that explicit learning and explicit knowledge from instruction and CF (including written CF) can be converted to implicit knowledge which is considered necessary for acquisition (Van Beuningen et al., 2012).

It is Anderson's ACT (Adaptive Control of Thought) model that specifically refers to the role of explicit knowledge (including that which can be gained from explicit written CF) and implicit knowledge in learning. Anderson refers to explicit knowledge as declarative knowledge and to implicit knowledge as procedural knowledge and claims that declarative knowledge can be converted to procedural knowledge through practice which leads to automatization.

Moreover, Extending Anderson's theory, the relevance of Skill Acquisition Theory to second language acquisition is described by DeKeyser (2001, 2007b). He asserts that declarative (explicit) knowledge (what one knows) is needed for developing the procedural (implicit) knowledge (what one can do). He also claims that by deliberate and extensive practice, the declarative knowledge can be proceduralized which leads the learner toward automatization. Drawing on Anderson's Skill Acquisition Theory, DeKeyser (1998) explains the important role played by practice in proceduralizing the linguistic knowledge of the second language. He believes that once declarative knowledge is developed, learners need to practice and have enough time to start the proceduralization process of the knowledge (Shegar et al., 2013).

Therefore, central to Skill Acquisition Theory is the accumulation of explicit knowledge at its various smaller stages and the speed with which it can be applied. The effects gained from giving learners opportunities to practice applying their developing linguistic knowledge have been commented on by theorists and researchers like DeKeyser (1997) and Ellis (2011). DeKeyser (1997), for example, explains how explicit, declarative knowledge of the L2 grammar rules can be gradually automatized through prolonged systematic practice. DeKeyser (1997) believed that it can help learners to automatize the explicit, declarative knowledge of the second language grammatical rules progressively. Ellis (2011) also argues that retrieving and using explicit knowledge may facilitate L2 development even if it does not have a direct effect.

The theory predicts that accuracy is a function of practice that is an important concept in this study. It also predicts that procedural knowledge does not transfer well. Thus, if students are to learn to produce accurate writing, practice tasks and activities must be authentic. With such a premium on writing practice that is both frequent and authentic, we recognized the need for extensive practice (Hartshon et al., 2010).

Skill Acquisition Theory (e.g., DeKeyser, 1998) sees a role for CF in assisting learners to proceduralize their declarative knowledge of the L2 (Ellis, 2010). During the initial stage, feedback can promote the acquisition of declarative knowledge. In proceduralization, fine-tuning, and automatization, it can indicate the need for greater attention and reliance on declarative knowledge as well as the need to change the scope of a given rule or procedure.

According to DeKeyser (1998, 2003, 2007b), learners need to be given grammar explanations because they must process this knowledge consciously. DeKeyser (2010) notes that learners need ample opportunities to put the gained knowledge about the target forms into practice. In the process of automatization, timely corrective feedback creates additional opportunities for practice and may help prevent automatization of uncorrected errors which may lead to fossilization and to focus on problem areas (Polio, 2012).. The learners need to receive feedback on how well they are doing (Ellis, 2009).

Production practice, a term used by DeKeyser (1998, 2007b), has been an area of contention in SLA, and has gained prominence in recent times. Swain (1995) defines it as output taking the form of practice, where the aim of producing

language is to provide practice in the use of certain target structures through communication. The purpose of practice is to have learners produce the target structure repetitively so that the knowledge of the rule is gradually activated “to the point where it can be used automatically” (Ellis, 1992). Findings of studies on practice, by and large suggest that practice taking the form of mechanical or meaningful drills either leads to increased accuracy in monitored but not spontaneous performance or leads to deleterious effects. By contrast, communicative practice with opportunities for corrective feedback, which is suitable for developing the learner’s implicit knowledge, seemed to have had some positive and lasting effects on spontaneous use of target structures (e.g., Harley, 1989; Henry et al., 2009; Pica, 1983, 1985; White et al., 1991).

Moreover, within this theory, being able to do something faster and with greater accuracy is evidence of learning and there is no reason that the theory should preclude performance on written production tasks. Many studies done within this approach examine not only how accurately something is done, but also how quickly. Most experimental studies of writing do impose time constraints on the writing task, but only crude ones and not the fine-grained timing used in reaction time studies. Nevertheless, greater accuracy would be considered a step toward acquisition. Once declarative knowledge is developed, to start the process of proceduralization, learners need to be given time to proceduralize that knowledge, i.e., no further errors are made without time pressure in simulated communicative activities (Polio, 2012)

WCF is meaningful when learners understand the provided feedback and know how they are expected to utilize it. Based on notions from Skill Acquisition Theory (DeKeyser, 2001, 2007), WCF and new opportunities to practice applying feedback should also be timely and constant if the goal is for the learner to reach a meaningful level of automatization in the production of accurate L2 writing. Feedback is timely when learners receive it soon after writing. Feedback is constant when it is provided to the learners at regular, frequent intervals over an extended period of weeks or months. Finally, writing tasks and feedback need to be manageable. Teachers need enough time to provide feedback and students need enough time to process and apply the feedback they receive. Too much feedback could undermine efforts to keep feedback meaningful, timely, and constant (Evans et al., 2010).

Moreover, it is worth mentioning that Skill Acquisition Theory is in contrast with Krashen's (1985) –Acquisition-learning Hypothesis – that is directly related to the language learning potential of WCF. Krashen (1985) makes a distinction between 'acquisition' and 'learning,' claiming that they are completely separate processes. The Acquisition–Learning Hypothesis proposes that there are significant consequences for learning L2 unconsciously vs. consciously. According to Krashen, only the unconscious processing of L2 leads to "acquisition" and results in fluency. "Learning" a language is a result of consciously processing L2 in a grammar-based curriculum in which students memorize rules and practice them in decontextualized exercises. He claims that 'acquisition' occurs as a result of learners interacting in natural, meaningful communication and that 'learning' occurs as a result of classroom instruction and activities in which the attention of

learners is focused on form, including, for example, that which is provided by written CF. In other words, he equates 'acquisition' with implicit knowledge and 'learning' with explicit knowledge. He adds that CF (both written and oral) plays no role in helping learners develop their acquired knowledge. Krashen does not see a role for CF in developing acquired knowledge, that which learners unconsciously and automatically draw upon as competent L2 users, but he does concede that teaching and CF can play an editing role in 'learning,' that is, in developing explicit knowledge. Because he sees 'learning' and 'acquisition' as completely different processes, he does not see a role for CF in the conversion of explicit knowledge to implicit knowledge.

In general, alternative perspectives are possible. Although, many SLA researchers seem to converge on the position that there is an interface connecting implicit and explicit knowledge bases (e.g. DeKeyser, 1998; Schmidt, 1990; Schmidt & Frota, 1986; Swain, 1985). Drawing on Skill Acquisition Theory (e.g. DeKeyser, 1998), they propose that the gap between explicit knowledge and language use can be gradually bridged by output practice (DeKeyser, 2003). By practicing language production, L2 learners are enabled to consolidate and automatize their linguistic repertoire. CF is believed to further assist this proceduralization of declarative L2 knowledge (Ellis, 2010). Other scholars adhere to an intermediate position (e.g. Doughty & Williams, 1998 and Long & Robinson, 1998). They see implicit and explicit knowledge as being separated, but argue that explicit knowledge may feed into the intake process by helping learners notice the

formal features of the input. From this perspective, CF could be expected to foster interlanguage development because it facilitates the process of noticing (the gap).

However, DeKeyser (2007b) suggests that in order to determine in what way and how much feedback is helpful during the practice, more research should be done on this issue. Additionally, how the principles of the theory can be applied directly to written corrective feedback and writing is open for investigation.

The next section of the study, shed more light on how studies in WCF have applied Skill Acquisition Theory as their framework.

2.5.2 Studies Operationalizing Skill Acquisition Theory

Some studies of written correction have attempted to apply the principles of Skill Acquisition Theory to writing. However applying the principles of the Skill Acquisition Theory directly to writing and written corrective feedback is yet open to interpretation.

Hartshorn et al. (2010) conducted a study of L2 written error correction with ESL learners and found a positive effect for written error correction. Hartshorn et al.'s interpretation of Skill Acquisition Theory was that "proceduralization requires extensive and deliberate practice, which then leads the learner toward greater automatization" (p. 87). They applied this to written error correction saying that the tasks and feedback must be meaningful, timely and constant, and manageable. They developed an instructional strategy referred to as dynamic WCF for improving students' accuracy based on insights gleaned from practice, research, and theory.

To implement these characteristics, students wrote 10-minute essays every day. The essays were coded for grammatical errors and returned the following day. Students had to revise and keep track of the essays and rewrite them until they were error-free. They found that their treatment group did write more accurately (using error-free T-units/ total T-units) than a control group and that fluency, complexity, and rhetorical competence measures did not suffer in comparison to the control group.

This study was replicated by Evans et al. (2011), the study found similar results in a different context. Previously, dynamic WCF was studied in the context of an intensive English program where students' linguistic accuracy was positively affected. Evans et al. (2011) tested the efficacy of dynamic WCF in the context of ESL students who were enrolled in university undergraduate studies. A comparative study was conducted measuring ESL learners who were taught using dynamic WCF against students who received traditional process writing instruction. Results indicated that students who received traditional process writing instruction experienced some declines in linguistic accuracy while those who received dynamic WCF showed significant improvement in the linguistic accuracy of their L2 writing.

In a recent study, Shintani and Ellis (2013) examined whether WCF has an effect on learners' L2 implicit and explicit knowledge of the English indefinite article. The study compared the effect of direct corrective feedback and the provision of metalinguistic explanation. It was found that the direct corrective feedback had no effect on accurate use of the target feature suggesting that it

benefited neither implicit nor explicit knowledge. In contrast, the metalinguistic explanation led to gains in accuracy. These results were interpreted as indicating that the metalinguistic explanation helped to develop learners' L2 explicit knowledge but that the effect was not durable and thus probably had no effect on their implicit knowledge. Learners' self-reports indicate that the learners receiving the direct corrective feedback did not develop awareness of the rule whereas those receiving the metalinguistic explanation did and were able to use it when revising their original text.

In sum, while the need to help students write with greater grammatical accuracy has been a topic of notable interest among teachers and researchers there are conflicting opinions as to whether we should provide feedback; there is no conclusive evidence on the most effective ways to provide feedback. Debates over the value of providing corrective feedback and efficacy of certain feedback options on writing have been prominent in recent years, so it calls for further research. Many studies are conducted about the effect of writing corrective feedback and they show evidence supporting writing corrective feedback on the acquisition of using different target structures (Bitchener, 2008; Bitchener & Knoch, 2009; Ellis et al., 2008; Sheen, 2007; Sheen et al., 2009). On the other hand, some research shows that writing corrective feedback does not improve accuracy (Fazio, 2001; Kepner, 1991; Polio et al., 1998).

Among the studies that concluded that WCF is effective in helping ESL students improve the accuracy of their writing, some of them (Lalande 1982; Ferris 1995, 1997, 2006; Ferris & Helt, 2000; Ferris et al., 2000) were designed without

a control group. So, there is no way of knowing whether or not the reported improvements in accuracy were actually a result of WCF. Further research that includes a control group, that tests the efficacy of WCF in new pieces of writing and that measures the level of retention over more extensive periods of time is needed if conclusions about the acquisition potential of WCF, as opposed to the text revision potential, are to be made (Ellis, 2008).

Therefore, previous WCF studies have not convincingly demonstrated that written CF has a positive effect on learning. So, to address the above mentioned needs and gaps in the literature and the controversy about the role of WCF in second language acquisition, the goal of this study is examining if the different degrees of explicitness of written corrective feedback (different kinds of written corrective feedback) has any impact on implicit and explicit knowledge of the target structure (past simple tense) in the short and long term.

CHAPTER 3: METHOD

This chapter outlines the research design and the instruments used to undertake the quasi-experimental study. First, the subjects of the study are explained, following by the experiment variables, and the target structure employed. Then the instruments used in collecting data are described. The last section is for the procedure followed in the quasi-experimental study and the measures used to analyze students' writing.

3.1. Participants

The present study was conducted in English language department of Payam-e-Noor University in Ardabil (Iran) during the spring semester of 2014. The reason for collecting the data in Iran was because the researcher had a background of working as a teacher in that context, she was familiar with it and it was easy to do the data collection. 124 learners in four classes agreed to take part in this study, but according to the results of a proficiency test and after excluding those who did not take either writing tasks or the pretest and posttest, it reached 105. So, one hundred and five intermediate level learners (46 male, 59 female) participated in the study that ranged in age from 20 to 32 (average age: 23) (table, 3.1). Their first language was Azeri Turkish and second language was Persian, so the sample was hemoogeneous with regard to the language spoken. They were undergraduate students pursuing a bachelor's degree in translation studies. These students were attending a compulsory course entitled "Introduction to translation studies" in their second semester. Participants were not informed about the exact nature of the study. They were asked to sign the consent form approved by the dean of the university

then they assigned to a writing proficiency test (PET) which proved that they were at intermediate level of writing. Then, students completed a background questionnaire which revealed that all of them had received formal instruction in the English language for an average of seven years in high school and some of them had attended some English schools as well. Then, they were divided into five equal groups (20 in each experimental group and 25 in control group) randomly using numbers that is a control group which did not receive any feedback and four experimental groups which received different degrees of explicit feedback on past simple tense which was problematic for them based on the pretest. One of the experimental groups received metalinguistic feedback which is considered the most explicit written corrective feedback. The second one received direct feedback which is less explicit than the metalinguistic explanation; they received the correct form of the error they had made under the erroneous structure. The third experimental group got the indirect feedback which is less explicit than the direct feedback, that is, it only specifies that in some way an error has been done by underlining the erroneous structure. The last group received the reformulation of their writing which was handed to them in a separate paper. Those students, who did not take all the writing tasks were eliminated from the data analysis. But those who took all the tasks received 2 extra marks on their final exam and an honorarium for participating in the study. The teacher was not the researcher. He was an experienced non-native teacher of English as a foreign language who held a Phd degree in English language teaching.

Table 3.1: Participants

Group	Population	Gender		Type of Feedback
		Male	Female	
1) Experimental	20	9	11	Metalinguistic
2) Experimental	20	11	9	Direct
3) Experimental	20	8	12	Indirect
4) Experimental	20	8	12	Reformulation
5) Control	25	10	15	No Feedback
Total	105	46	59	

3.2. Variables

In this study the independent variable is the type of treatment given to the students, while the dependent variable represents the effect of the treatment on students' writing. Figure 3.1 below explains the relationship between these two variables.

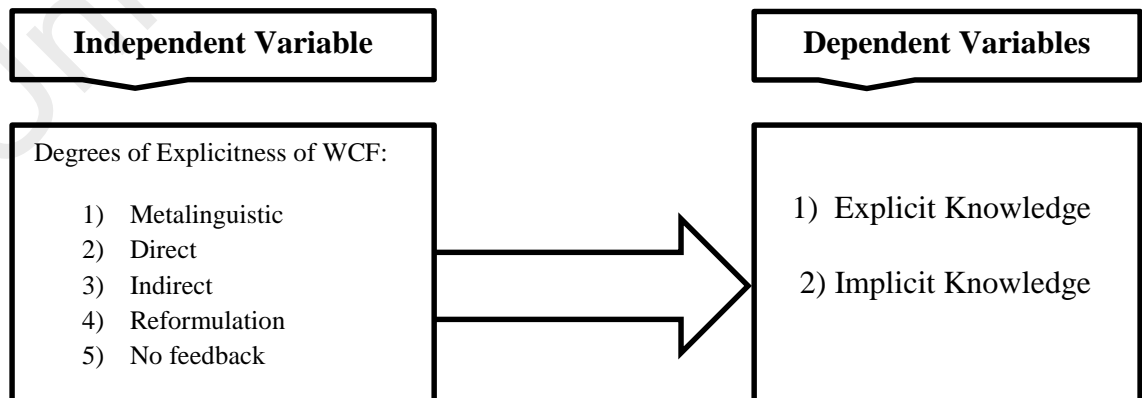


Figure 3.1: Dependent and Independent Variables of the Study

There is one independent variable with five levels, which are treatment types 1, 2, 3, 4 and no feedback. The first treatment is metalinguistic feedback which is the most explicit type of WCF. It provides learners with some form of explicit comment about the nature of the errors they have made. “This type of correction is operationalized as the provision of metalinguistic explanation to justify the correct form when an error is made. The correct form along with metalinguistic information is provided. More specifically, each error is first marked with a number, and notes for each numbered error are given at the bottom of a learner’s sheet. The notes indicate what is wrong (using metalinguistic information) and also provides the correct form” (Sheen, 2010). The table below (3.2) shows an example of metalinguistic written corrective feedback in this study.

Table 3.2: Example of Metalinguistic WCF in This Study

<p>(1)</p> <p>Mary woke up at 9 o’ clock. She washed her hands and face and eated breakfast.</p> <p>(1) “eat” is an irregular verb and its past tense is “ate” not eated.</p>

The second level is direct written corrective feedback that is less explicit than metalinguistic; it is defined as correcting students' errors by providing the correct form or structure on their composition papers. For example, when a student made an error by using the simple past, then direct correction here meant that the researcher wrote the correct form of the verb in red next to or above the original error so that the student knew that he or she had made an error and that the word written in red was the proper form of the verb as in the example in table 3.3 below:

Table 3.3: Example of Direct WCF in This Study

Mary woke up at 9 o' clock. She washed her hands and face and ^{ate} eated breakfast.

Indirect written corrective feedback that is the third level of independent variable in this study includes underlining the erroneous structure by teacher indicating the location of error only, and then the students have to put in more effort outside the classroom by looking up the answer in a grammar book, or consulting a teacher or a classmate. Table 3.4 below shows the example:

Table 3.4: Example of Indirect WCF in This Study

Mary woke up at 9 o' clock. She washed her hands and face and <u>eated</u> breakfast.

The last type of treatment is Reformulation that is reworking of the students' entire text to make the language seem as native-like as possible while keeping the content of the original intact (Table 3.5).

Table 3.5: Example of Reformulation in This Study

Part of an original text	Part of a reformulated text
One day a woman waked up with clock ring and make breakfast and god to the office. She go inside, one cat was there and the woman was scared.	One day a woman woke up with clock ring and made breakfast and went to the office. She went inside, one cat was there and the woman was scared.

The last condition is giving no feedback and not providing correction on students' writing. The dependent variables in the experiment are explicit and implicit knowledge of simple past tense which are described earlier.

3.3. Target Structure

As mentioned before, one of the causes that Truscott expressed WCF concerned the possibility of providing WCF for the learners when they are ready (Piennemann, 1998) to acquire a specific structure, because the acquisition of some forms has been proven to follow a natural order (Clahsen et al., 1983). However, it is possible that teacher provide WCF on one or two targeted forms that are proved to be repeatedly problematic for the learners and they agree that it should be targeted for an agreed period of time (Bitchener & Knoch, 2009).

A variety of criteria have also been used in choosing forms in Focus on Form studies, notably arguments based on linguistic theory (e.g., White, 1991), learnability (e.g., Lightbown & Spada, 1993), and likelihood of (either L1- or L2-induced) error (Herron, 1991; Herron & Tomasello, 1989). Studies that have

examined the effect of the same kind of instruction on a variety of forms have often yielded disparate results (Herron & Tomasello, 1992; Zhou, 1992), suggesting that learners will not respond equally to the same kind of focus on form on all forms. “Harley (1993) has suggested that likely candidates for effective focus on form are those that:

- 1) Differ in nonobvious ways from the learners’ first language, for example, adverb placement for L2 French and English.
- 2) Are not salient because they are irregular or infrequent in the input, for example, conditionals in L2 French.
- 3) Are not important for successful communication, for example, third person singular –s in L2 English.
- 4) Are likely to be misinterpreted or misanalysed by learners, for example, dative alternation in L2 English.”

Moreover, Ferris (2002) stated that “teachers need to distinguish in their own minds and in their marking strategies between errors and stylistic differences, because they are likely to be sensitive not only to morphological, lexical syntactic, and mechanical errors but also to wording that could be improved or wording or phrasing that is not exactly wrong but is not precisely the way a native speaker might say it, either”. About selection of the errors to mark, Ferris set up three stages:

“Stage1) Understand the types of errors that are most common to ESL writers.

Stage2) Understand that different students may make distinct types of errors.

Stage3) Understand the need to priorities error feedback for individual students.

Once teachers know, in general, what types of errors their students might make, they will need to make some decisions about which errors to mark” (Ferris, 2002). So, the choice of form in this study was pedagogically and theoretically motivated and based on some of the criteria above but also on learner-based criteria.

Following the above-mentioned criteria, in this study and based on the findings from the pretest Picture Description Test, past simple tense posed difficulty to learners and corresponded at least two of the criteria suggested by Harley and was actively used in the writing of the learners but was the most problematic structure for the learners (Appendix, A).

“The simple past is not functionally complex; however, it does have numerous forms, so what actually constitutes the simple past needs to be discussed. In general, its function represents a completed action or state in the past. This function can be expressed through the use of the past tense copula (was or were), regular verbs (e.g., walked and talked) and irregular verbs (e.g. went and did). It can be expressed in the active or the passive voice. A decision was made not to give feedback on the passive voice. This decision was made on the basis that the passive voice represents a potentially untreatable sentence structure error (Ferris & Roberts, 2001)”. In sum, the past simple test for this study included the past tense copula verbs, irregular verbs and regular verbs in the active voice.

In addition, Ferris (1999) made a distinction between treatable and untreatable errors. Treatable errors are those that can be prevented through the application of systematic grammar rules. These include verb tense and form, subject-verb agreement, article usage, plural and possessive noun endings, and sentence fragments. Untreatable errors are those that result from ignorance of idiosyncratic language rules that must be acquired over time e. g., word choice, sentence structure errors.”). Ferris (1999) similarly suggested that written CF be directed at “treatable errors” (i.e., errors relating to features that occur in “a patterned, rule-governed way” (p. 6).

We also elected to investigate focused CF, where only one type of error is corrected and the rest ignored, rather than unfocused CF, where all (or most) errors are corrected. This decision was motivated by recent studies (e.g., Bitchener & Knoch, 2008) which have shown that focused CF is effective and by Farrokhi and Sattapour’s (2012) study, which showed that it was more effective than unfocused CF. Despite these arguments, we consider focused CF to be pedagogically sound. Teachers can vary the feature they focus on in different writing tasks and thus achieve a wide coverage of grammar over time. Also, focusing on a single grammatical feature enhances the likelihood that learners will not just memorize the specific corrections but develop an awareness of the underlying rule (i.e., develop explicit knowledge). This is much less likely to occur if many different kinds of errors are corrected. There is also a methodological advantage in examining focused CF. As Van Beunigen et al. (2012) acknowledged, in unfocused CF the specific structures corrected in an initial piece of writing may not occur in

subsequent writing. To demonstrate that CF has an effect on either explicit or implicit knowledge it is necessary to show that the correction of a specific error leads to the elimination of or reduction in occurrences of that error. This is much easier to achieve in focused CF.

3.4. Materials

Four instruments of data collection were used in this study: 1) Proficiency Test, 2) Background Questionnaire, 3) Picture Description Test, 4) Error Correction Test.

3.4.1. Proficiency Test

To get assurance as to the homogeneity of the learners in terms of the writing proficiency, Cambridge Preliminary English Test (PET) was administered and the result was put in ANOVA which revealed that majority of the learners were in the intermediate level of writing proficiency ranging from lower-intermediate to upper-intermediate. There was no statistically significant difference among the groups ($F = .24, p = .62$). The table below (3.6) shows the descriptive statistics for PET.

Table 3.6: Descriptive Statistics for PET

	M	SD
All		
groups	53.54	6.27

3.4.2. Background Questionnaire

In the first week, a structured short questionnaire adapted from Liebman (1992), was distributed to the participants in order to determine the students' background. The questionnaire was in English, not their first or second language. Because, based on the result of the proficiency test the subjects were all in their intermediate level of English and were able to answer the questions in the questionnaire. The learners were asked to provide information about their name, age, phone number, gender, spoken languages, and the time they had spent learning English. The questionnaire was used to check whether the learners were equivalent. (Appendix, B)

3.4.3. Picture Description Test

In this test, students were provided with a picture and were asked to compose a text consisting of not less than five sentences describing what was happening in a given picture. For example, it showed a sequential picture of a woman's trouble in a day. Picture composition tasks from Heaton (1975) were adapted to elicit stories from the students. Each picture sheet consisted of six pictures that described a short story. Following Shintani and Ellis (2013), the participants were given 20 minutes to complete the task which, given their proficiency, posed considerable pressure on their language processing capacity. They were allowed to ask the teacher to assist them with vocabulary as it was anticipated that they would not know some of the vocabulary needed to write the stories. Otherwise they completed the stories without assistance.

The writing test was designed to afford a potential measure of learners' implicit knowledge of the past simple tense. In accordance with Ellis' (2005) criteria for tests of implicit knowledge, the writing test did not require awareness of the target form, the task was pressured, the primary focus was on meaning (i.e., telling the story), and the task instructions did not invite the use of metalinguistic knowledge. The same kind of test, but with different pictures was given to the learners as treatment to receive feedback on during the treatment sessions. (Appendix, C)

3.4.4. Error Correction Test

This was adopted from the testing instrument used in Sheen (2007). It consisted of 16 items, each containing two related statements, one of which was underlined. The underlined sentence contained an error. The students were asked to write out the incorrect sentence correctly. Twelve of the 16 items contained sentences with past simple tense errors (6 involving regular verbs and 6 involving irregular verbs). There were also four distractors, i.e. sentences containing other kinds of errors.

The purpose of the test was to provide a measure of learners' explicit knowledge of the past simple tense. The test required learners to (1) identify the error in each sentence and (2) write out the sentence correcting the error. This test satisfied all the four criteria for a test of explicit knowledge proposed by Ellis (2009). That is, it required a high degree of awareness on the part of the learners, there was no time pressure, it focused attention on form rather than on meaning and it potentially drew on learners' metalinguistic knowledge of the past simple tense. (Appendix, D)

3.5. Procedures

3.5.1 Data Collection Procedure

This study had a quasi-experimental design (a pre-test, immediate post-test, delayed post-test design). The design of the study was similar to Shintani and Ellis (2013)'s study that compared the influence of direct WCF and metalinguistic explanation on explicit and implicit knowledge of the learners. In Shintani and Ellis' study, they had three groups that participated in three sessions: In the first session they completed a background questionnaire, the Error Correction Test (as pretest) and the first writing task (picture description). At second session (time 2) the groups received their respective feedback and were asked to revise and then write the second writing task. At time 3, the third session, they completed their third writing task, following the exit questionnaire and the same Error Correction Test as at time 1 (as posttest).

This study on the other hand, was designed to take 11 weeks. In the first week, a background questionnaire and the first pre-test were administered to find out the problematic target structure. This was followed closely by the second pretest (in the 2nd week) that was an Error Correction Test and first writing assignment (Picture Description Test). Then, the teacher collected the learners' written stories and the researcher provided the considered feedback (for the experimental groups). After that the teacher handed the comments back to the learners in the next session that is week 3. Upon receiving the papers, the learners had time to examine the feedback and were asked to revise their writing. Then after a short break of 10 minutes in the same session, they were asked to write the next story. It should be mentioned that

the topic of their writing task was not chosen by the participants. However, the story was different from the first task. Then, in weeks 4, 5, and 6 the same pattern was followed. One week later (week 7), immediate post-test (same pre-test) was given to find out the effects of the treatment in the short term. Finally, in order to report the possible effects of the treatment over time, a delayed post-test (same pre-test) was given in the 11th week. The table below (3.6) shows the summary of the procedure of the study.

Table 3.7: Procedure of the Study

Group Condition	Week 1:	Week 2:	Weeks 3,4,5,6	Week 7	Week 11
Metalinguistic Feedback	First pre-test (Picture-description test) and background questionnaire	Second pre-test (Error-correction) and first writing task (Picture description)	Receiving the respective feedback and revising the original writing followed by new piece of writing (Picture description)	Post-test (Error-correction and picture-description test)	Delayed post-test(Error-correction and picture-description test)
Direct Feedback					
Indirect Feedback					
Reformulation			*5 writing tasks totally		
Control			No feedback and revising the original writing followed by new piece of writing		

3.5.2 Data Analysis Procedure

The scores of the Picture Description Test were calculated with regard to the percentages of forms correctly supplied in “obligatory occasions”. Pica’s (1994) “target-like use analysis” formula, i.e.,

$$\frac{(n) \text{ number of correct suppliance in contexts}}{(x) \text{ total number of obligatory contexts}} \times 100 = \% \text{percentage of accuracy.}$$

was used to derive the accuracy percentages for all the participating individuals in the current study (e.g., $[5/10] \times 100 = 50$).

In the Error Correction Test, however, one point was awarded for successful correction of the targeted form in each sentence. In consistency with the literature available on this type of test (e.g., Ellis et al., 2008), the distractor items which were not to contain any errors were excluded from consideration in scoring the correction test.

To analyze the data obtained for the picture description task (percentage of accuracy scores) and the Error Correction Test (scores for the successful corrections) across the five groups involved, two separate mixed between-within subjects analysis of variance (SPANOVA) were used. The reason that I chose to go for such an analysis is because each test (error correction and picture description) was repeated three times (as pre-test, post-test, and delayed post-test) for more than one group. Then, pairwise comparisons using Bonferroni adjustment were computed where appropriate (when there was statistically significant difference).

CHAPTER 4: RESULTS and DISCUSSION

This chapter presents and discusses the results of the data collected through administering the Error Correction Test and the Picture Description Test to answer the following research questions:

- 1) What effect does focused metalinguistic WCF have on learners' explicit and implicit knowledge of past simple tense?
- 2) What effect does focused direct WCF have on learners' explicit and implicit knowledge of past simple tense?
- 3) What effect does focused indirect WCF have on learners' explicit and implicit knowledge of past simple tense?
- 4) What effect does reformulation WCF have on learners' explicit and implicit knowledge of past simple tense?
- 5) Is there any difference in the effect that different degrees of explicitness of feedback have on learners' implicit and explicit knowledge of past simple tense?

It was not possible to derive the hypotheses due to insufficient justification in the literature.

This study utilizes the Picture Description Test to measure the learners' implicit knowledge of the past simple tense and the Error Correction Test to measure the explicit knowledge of the past simple tense. In order to answer the research questions, it was necessary to present the results for the descriptive statistics and inferential statistical analyses for the Error Correction Test first followed by descriptive statistics and inferential statistical analyses for the Picture Description Test before attempting to answer each research question.

4.1. Results of the Error Correction Test

As mentioned earlier the Error Correction Test was used to test the learners' explicit knowledge of the simple past tense. It was conducted three times, first as a pre-test in week two, second as an immediate post-test in week seven and last as the delayed post-test in week eleven. According to the table (4.1), the mean scores for all the five groups showed a gain from the first test (pre-test) to the second (immediate post-test) for example, the indirect group's mean score rose from 6 to 7.55. Moreover, all the groups' mean score increased from the pre-test to the delayed post-test, an example is the direct group's mean score which was 5.95 in the pre-test and 6.75 in the delayed post-test. However, only the control group improved slightly from the second test (immediate post-test) to the third (delayed post-test) i.e. from 6.4 to 6.68 while the rest of the groups' mean scores decreased. Table 4.1 gives the descriptive statistics for the Error Correction Test.

Table 4.1: Descriptive Statistics for Error Correction Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Metalinguistic	5.9	1.74	9.55	1.43	7.45	1.53
Direct	5.95	1.63	8.7	1.65	6.75	1.44
Indirect	6	1.83	7.55	1.79	6.5	1.57
Reformulation	6.5	1.9	7.1	1.8	6.85	1.69
Control	5.92	2.01	6.4	1.97	6.68	1.43

Then, as represented in the table 4.2, the scores were subjected to a repeated-measure ANOVA to illustrate the difference across the three times (hereafter, *time* would refer to time frames of the tests), the five groups, and the interaction of time and group.

Table 4.2: Repeated-measure ANOVA Result for Error Correction Test

Effect		Value	F	Error df	Sig.
Time	Wilks' Lambda	0.338	97.037	99.000	0.000*
Time×group	Wilks' Lambda	0.498	10.318	198.000	0.000*

The result revealed that there was both a significant time effect ($F = 97.03$, $p = .00$ ($p < .05$)), and a time-group interaction effect ($F = 10.31$, $p = .00$ ($p < .05$)), but the effect of group was not significant. For more in depth analysis of the significance of time, the post hoc pair-wise within group comparisons using the Bonferroni adjustment was computed for all the groups individually. The results are reported in Section 4.3.

4.2. Results of the Picture Description Test

Like the Error Correction Test, Picture Description Test was administered for three times as: a pre-test in the first week, an immediate post-test in the seventh week and a delayed post-test in the eleventh week. Picture Description Test was used to test the learners' knowledge of the simple past tense. To analyze the data obtained, the descriptive statistics were considered first. According to the table 4.3 and based on the mean scores, it is clear that all the groups' performances, in terms of the accuracy in using simple past tense, improved from the first test (pre-test) to

the second (immediate post-test). For instance, the direct group's mean score increased from 61.44 to 80.05. However, all of the groups' mean scores decreased from the immediate post-test to the delayed post-test. As an example, the metalinguistic group's mean score declined from 79.57 to 73.94. Furthermore, all the groups' performance improved from the pre-test to the delayed post-test. For example, the control group's mean score inclined from 55.73 to 57.94.

Table 4.3: Descriptive Statistics for Picture Description Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Metalinguistic	59.94	15.88	79.57	14.17	73.94	13.90
Direct	61.44	16.25	80.05	11.49	65.83	12.10
Indirect	56.87	15.19	82.46	9.97	65.94	11.58
Reformulation	62.59	21.52	75.76	17.58	66.27	14.16
Control	55.73	10.25	59.46	9.45	57.94	11.40

A repeated-measures ANOVA was conducted to find out the effects of time, group, and time-group interaction. The results are displayed in table 4.4 below.

Table 4.4: Repeated-measures ANOVA Result for Picture Description Test

Effect		Value	F	Error df	Sig.
Time	Wilks' Lambda	0.504	48.660	99.000	0.000*
Time×group	Wilks' Lambda	0.752	3.797	198.000	0.000*

The results showed that there was significant effect for time ($F = 48.66$, $p = .00$) and time-group ($F = 3.79$, $p = .00$) but the group effect did not reach a significant difference ($p < .05$). Therefore, the post hoc pair-wise within group and between group comparisons using Bonferroni adjustment were conducted. The results of the post hoc within group for each group are reported in Section 4.3 below.

4.3. Post-hoc results

In order to answer research questions 1 to 4, the results of post hoc within group for individual groups for the Error Correction Test as well as the Picture Description Test have to be reported together for each type / group of WCF. The first part of all these questions asked for the impact of the type of WCF on explicit knowledge (which is tested by the Error Correction Test) and the second part asked for the same effect on implicit knowledge which is tested by the Picture Description Test.

4.3.1. Metalinguistic Group

RQ1) What effect does focused metalinguistic WCF have on learners' explicit and implicit knowledge of past simple tense?

The first research question addressed the effect of metalinguistic WCF on learners' acquisition of explicit and implicit knowledge of the English simple past tense. Table 4.5 displays the descriptive statistics. It can be seen that the mean score for the metalinguistic group increased from the pre-test to the immediate post-test (5.9 to 9.55) and pre-test to the delayed post-test (5.9 to 7.45), but it declined from the immediate post-test to the delayed post-test (9.55 to 7.45).

Table 4.5: Descriptive Statistics for Metalinguistic Group in Error Correction Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Metalinguistic	5.9	1.74	9.55	1.43	7.45	1.53

To find out if the mean differences were significant, post hoc pair-wise within group comparisons using Bonferroni adjustment was administered. Table 4.6 showed that the metalinguistic group improved significantly from the pre-test to the immediate post-test ($p = .00$) and also from the pre-test to the delayed post-test ($p = .00$) ($p < .05$). However, table 4.6 reveals that this groups' mean score declined from the immediate post-test to the delayed post-test and it was statistically significant ($p = .00$). This result for the effect of time in metalinguistic group provides the answer to the first part of the first research question that is the effect of the focused metalinguistic written corrective feedback on the learners' explicit knowledge of past simple tense.

Table 4.6: The effect of Time for Metalinguistic Group in Error Correction Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-3.650	0.295	0.000*
Time 1	Time 3	-1.550	0.300	0.000*
Time 2	Time 3	2.100	0.337	0.000*

Based on the results of the Error Correction Test for metalinguistic group, it can be claimed that the metalinguistic WCF had a positive effect on learners' explicit knowledge of the past simple tense in the short and long term.

To answer the second part of the first research question which addresses the effect of the *metalinguistic* WCF on learners' implicit knowledge of the past simple tense, the result of the Picture Description Test for the metalinguistic group is considered.

Table 4.7: Descriptive Statistics for Metalinguistic Group in Picture Description Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Metalinguistic	59.94	15.88	79.57	14.17	73.94	13.90

The descriptive statistics in table 4.7 shows that the metalinguistic group's performance on the Picture Description Test improved from the pre-test to immediate post-test and also from pre-test to delayed post-test, but like the result of the Error Correction Test, their mean score declined minimally from the immediate post-test to delayed post-test. Further analysis was conducted and the results of the post hoc pairwise comparison are shown in the table 4.8 below. The mean differences were positively significant as far as the mean scores of the pre-test and immediate post-test and also pre-test and the delayed post-test were concerned. Although this group's performance declined from immediate post-test to delayed post-test, the score was not significant ($p = .185$).

Table 4.8: The effect of Time for Metalinguistic Group in Picture Description Test

Time	Time	Mean Difference (I-J)	Std. Error	Sig.
Factor1	Factor2			
Time 1	Time 2	-19.627	3.797	0.000*
Time 1	Time 3	-13.994	3.206	0.000*
Time 2	Time 3	5.633	2.982	0.185

This means that the metalinguistic WCF led to improved accuracy from the pre-test to immediate post-test, and also from the first to last piece of writing. That is, it had a positive effect in short and long term. In other words, the metalinguistic WCF had a positive effect on immediate learning and its effect was maintained over time in the Picture Description Test.

In summary, the metalinguistic group achieved significantly higher scores in the immediate–and delayed administration of the Error Correction Test. Also according to the table 4.1, the metalinguistic group outperformed the control group in the post-tests. This suggests that the metalinguistic approach towards WCF was successful in improving the learners' explicit knowledge of past simple tense. Additionally, the metalinguistic WCF also led to increased accuracy in the Picture Description Test in short and long- term. The same pattern was followed in this group for both of the tests. However, the only difference was that, there was no statistically significant difference between the second and last pieces of writing in the Picture Description Test, but there was a negative statistical difference between the immediate and delayed Error Correction Test.

This can suggest that the metalinguistic written corrective feedback assisted the development of both explicit and implicit knowledge of the learners in terms of the accuracy in past simple tense in short and long term.

4.3.2. Direct Group

RQ2) What effect does focused direct WCF have on learners' explicit and implicit knowledge of past simple tense?

In this section the second research question that is going to be answered. The first part of the question that is addressing the effect of direct WCF on explicit knowledge will be answered by considering the results of the Error Correction Test and the second part of the question that is asking about the impact of the direct WCF on implicit knowledge will be addressed by considering the results of the Picture Description Test. The table 4.9 below shows the descriptive statistics for the direct group in the Error Correction Test.

Table 4.9: Descriptive Statistics for Direct Group in Error Correction Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Direct	5.95	1.63	8.7	1.65	6.75	1.44

The direct group's performance in terms of accuracy in using past simple tense improved from the pre-test to the immediate post-test and from the pre-test to the delayed post-test, but not from the immediate to the delayed post-test.

Table 4.10: The Effect of Time for Direct Group in Error Correction Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-2.750	0.295	0.000*
Time 1	Time 3	-0.800	0.300	0.027*
Time 2	Time 3	1.950	0.337	0.000*

According to the above table 4.10 the result of the post-hoc computed for the direct group in Error Correction Test reveals that the differences in mean scores on the three tests were all statistically significant, that is the direct group's score increased significantly from the pre-test to immediate post-test ($p = .00$) and pre-test to delayed post-test ($p = .027$) and decreased significantly from the immediate post-test to delayed post-test ($p = .00$).

So, to answer the first part of the second research question, it can be said that the direct WCF affected the learners' explicit knowledge of the past simple tense in the short and long term.

Turning to the second part of the second research question, the next table (4.11) is the report of the descriptive statistics for the direct group in the Picture Description Test.

Table 4.11: Descriptive Statistics for Direct Group in Picture Description Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Direct	61.44	16.25	80.04	11.49	65.83	12.10

As it is clear from the table, the direct group showed gain from the first test to the second and first test to the third (a slight gain). However, the learners in this group could not improve from the second test to the third.

Table 4.12: The Effect of Time for Direct Group in Picture Description Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-18.609	3.797	0.000*
Time 1	Time 3	-4.390	3.206	0.522
Time 2	Time 3	14.220	2.982	0.000*

Further analysis (table 4.12), that is, post hoc result for the effect of time in direct group clarifies that the direct groups' mean score difference was positively significant only when the result of the pre-test and immediate post-test was compared ($p = .00$). Therefore, it can be concluded that the direct WCF could have an impact on the learners' implicit knowledge in the short term but not in the long term. In other words, unlike the metalinguistic WCF, the direct WCF had a positive effect on immediate learning but its effect wore off over time.

In summary, it is seen that the direct WCF only had effect on scores in the Picture Description Test which was administered as an immediate post-test. Thus, the results of this study suggest that direct WCF had no effect on the learners' implicit knowledge of past simple tense. Implicit knowledge once developed is not easily forgotten so if the direct WCF had had an effect on the learners' implicit knowledge, the effect should have been maintained. Furthermore, direct WCF led to improved accuracy in the second and third Error Correction Test. That is, the learners' scores in the direct group increased significantly from the pre-test to

immediate post-test and pre-test to delayed post-test. Therefore we can say that it could affect the learners' explicit knowledge in short and long term.

4.3.3. Indirect Group

RQ3) What effect does focused indirect WCF have on learners' explicit and implicit knowledge of past simple tense?

In this part, the impact of the indirect WCF on the learners' explicit and implicit knowledge are reported and discussed to answer the third research question.

The table 4.13 provides the descriptive statistics for the indirect group's performance on the Error Correction Test. Based on the results shown in table 4.14, it is clear that the indirect group made progress from the pre-test to immediate post-test in terms of the accuracy in past simple tense to reach a statistically significant level of difference ($p = .00$).

Table 4.13: Descriptive Statistics for Indirect Group in Error Correction Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Indirect	6	1.83	7.55	1.79	6.5	1.57

Although their mean score did not go up significantly from the pre-test to delayed post-test, their performance from the immediate post-test to delayed post-test dropped significantly ($p = .00$).

Table 4.14: The Effect of Time for Indirect Group in Error Correction Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-1.550	0.295	0.000*
Time 1	Time 3	-0.500	0.300	0.297
Time 2	Time 3	1.050	0.337	0.007*

Therefore, according to the results obtained, the answer to the first part of the third research question is that, the indirect WCF is effective in improving the learners' explicit knowledge of the past simple tense in the short term, but not in the long term, that is, the learners' performance who received the indirect WCF improved significantly from the pre-test to immediate post-test, but not from the pre-test to the delayed post-test.

Moreover, to find out the possible effect of the indirect WCF on implicit knowledge, the results of the Picture Description Test are considered.

Table 4.15: Descriptive Statistics for Indirect Group in Picture Description Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Indirect	56.87	15.19	82.46	9.97	65.94	11.58

The descriptive statistics for the indirect group on Picture Description Test (table, 4.15) reveals that in this group the learners' performance improved from the pre-test to immediate post-test as well as the delayed post-test. In order to know if the

improvement in terms of accuracy in past simple test was significant, the post-hoc pairwise comparison using Bonferroni adjustment (table 4.16) was administered. The differences in the learners' mean score were positively significant from time 1 (pre-test) to time 2 (immediate post-test) ($p = .00$) and also from time 1 (pre-test) to time 3 (delayed post-test) ($p = .01$).

Table 4.16: The Effect of Time for Indirect Group in Picture Description Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-25.591	3.797	0.000*
Time 1	Time 3	-9.071	3.206	0.017
Time 2	Time 3	-16.520	2.982	0.000*

The results presented in the table above provide the guide to answer the second part of the third research question. Since the learners' performance in this group inclined significantly from the pre-test to the immediate post-test and the improvement in their performance didn't wear off over time i.e. in the delayed post test conducted one month later, it can be concluded that the indirect WCF had both short-term and long-term impact on the learners' implicit knowledge of the past simple test.

4.3.4. Reformulation Group

RQ4) What effect does reformulation WCF have on learners' explicit and implicit knowledge of past simple tense?

Reformulation was the least explicit WCF examined in this study. To realize its effect on the learners' explicit and implicit knowledge the same tests were given, that is the Error Correction Test and the Picture Description Test respectively. The

same analysis was applied with the scores obtained from the tests and the result is reported in the tables below (4.17 to 4.20). The result of the Error Correction Test is interpreted first to give the answer to the first part of the fourth research question, after that the result of the Picture Description Test is explained to answer the second part of the research question.

The table 4.17 displays the descriptive statistics for the reformulation group's performance on the Error Correction Test. According to the table, although the learners in this group outperformed their pre-test performance in the immediate post-test, their scores dropped minimally in the delayed post-test. These results are not similar to any of the groups considered earlier.

Table 4.17: Descriptive Statistics for Reformulation Group in Error Correction Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Reformulation	6.5	1.9	7.1	1.8	6.85	1.69

Table 4.18: The Effect of Time for Reformulation Group in Error Correction Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-0.60	0.295	0.134
Time 1	Time 3	-0.350	0.300	0.739
Time 2	Time 3	0.250	0.337	1.000

In contrast to the results of the three groups reported earlier, the post hoc result clarified that this group didn't show any statistically significant improvement in

terms of the accuracy in past simple tense in the Error Correction Tests administered. So, this makes clear that the reformulation as a WCF doesn't play a role in improving the learners' explicit knowledge of past simple tense in the short and long term.

The analysis of the results of the Picture Description Test for the reformulation group is reported and explained next. Like the other groups, this group took this test three times that is, as a pretest (in the first week of the study), an immediate post-test (in week 7) and a delayed post-test (4 weeks after the immediate post-test).

Table 4.19: Descriptive Statistics for Reformulation Group in Picture Description Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Reformulation	62.59	21.52	75.76	17.58	66.27	14.16

The descriptive statistics for the result of these tests found in table 4.19 reveals that the learners' mean score went up and reached a significant difference from the pre-test to the immediate post- test ($p = .00$) (based on the table 4.20). Although this group's performance improved slightly from the pre-test to delayed post-test, it declined significantly from the immediate post-test to the delayed post-test ($p = .00$).

Table 4.20: The Effect of Time for Reformulation Group in Picture Description Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-13.172	3.797	0.002*
Time 1	Time 3	-3.685	3.206	0.759
Time 2	Time 3	9.487	2.982	0.006*

Consequently, reformulation as the least explicit kind of WCF could not affect the learners' implicit knowledge of the past simple tense. Although it was effective in the short time, its effect decreased as the time passed. As it was expressed before, if the impact of the WCF did not decline over time, we could say that it affected the implicit knowledge. Shintani and Ellis (2013) believed that implicit knowledge once developed is not easily forgotten. So, if the reformulation as WCF had had an effect on the learners' "genuine knowledge of language" the effect should have last in the delayed post-test.

Altogether, the above findings indicate that reformulation may not be as effectual as the other feedback types considered in improving the learners' explicit and implicit knowledge of the past simple tense.

4.3.5. Control Group

Having a control group was necessary in the study, because it provides a baseline to compare the results of the experimental groups to and to see how much of an effect the independent variable had on the subjects. It is a group that has no

variables, and is the group by which all of the other groups are measured or compared.

Table 4.21: Descriptive Statistics for Control Group in Error Correction Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Control	5.92	2.01	6.4	1.97	6.68	1.43

The table above (4.21) displays the descriptive statistics for the control group's performance in the Error Correction Test. It reveals that the subjects' scores in this group increased from the pre-test (5.92) to immediate post-test (6.4), immediate post-test (6.4) to delayed post-test (6.68), and also from the pre-test (5.92) to delayed post-test (6.68).

Table 4.22: The Effect of Time for Control Group in Error Correction Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-0.480	0.264	0.216
Time 1	Time 3	-0.760	0.269	0.017*
Time 2	Time 3	-0.280	0.301	1.000

Moreover, the table 4.22 shows that the control groups' score differences between both the pre-test and immediate post-test and between the immediate post-test and delayed post-test did not reach statistical significance. But, there was a significant difference between the control group's performance from the pre-test to delayed post-test ($p = .01$) (as shown in table 4.22). It is interesting that, similar to

the reformulation group, the control group showed no significant improvement from the pre-test to immediate post. Furthermore, like the metalinguistic and direct group, the control group's performance improved significantly from the pre-test to delayed post-test in Error Correction Test.

Table 4.23: Descriptive Statistics for Control Group in Picture Description Test

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Control	55.73	10.25	59.46	9.45	57.94	11.40

As far as the result of the Picture Description Test is considered for the control group, according to the table 4.23, the subjects' performance in this group improved from the pre-test (55.73) to immediate post-test (59.46) and from the pre-test (55.73) to delayed post-test (57.94) as well. But, the scores of the learners in this group decreased from the immediate post-test (59.46) to delayed post-test (57.94).

Table 4.24: The Effect of Time for Control Group in Picture Description Test

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-3.729	3.397	0.825
Time 1	Time 3	-2.212	2.867	1.000
Time 2	Time 3	1.517	2.667	1.000

Based on the results in table 4.24, unlike the effect of time on experimental groups, the post hoc result of the analysis for the control group did not show any significant difference in short and long term.

With the effect of time considered for all the groups (within group), the time-group interaction effect is presented in the next part.

4.3.6. Groups Comparison

RQ5) Is there any difference in the effect that different degrees of explicitness of feedback have on learners' implicit and explicit knowledge of past simple tense?

Once the effect of the different degrees of explicitness of WCF is analyzed for individual groups, the last research question to find out if there is any difference in the effect that different degrees of explicitness of WCF have on the learners' implicit and explicit knowledge of past simple tense can be answered. To this end, the performances of the groups in the Error Correction Test and Picture Description Test (as pre-test, immediate post-test, and delayed post-test) are compared in this next part.

4.3.6.1. Effects on Explicit Knowledge

As it was earlier mentioned in this chapter, a repeated-measure ANOVA was computed to show the difference across the three times (i.e. pre-test, immediate post-test, delayed post-test), the five groups (four experimental groups and a control group), and the interaction of time and group for the Error Correction Test. Table 4.25 shows the results.

Table 4.25: Repeated-measure ANOVA Result for Error Correction Test

Effect		Value	F	Error df	Sig.
Time	Wilks' Lambda	0.338	97.037	99.000	0.000*
Time×group	Wilks' Lambda	0.498	10.318	198.000	0.000*

The results revealed that there was significance for both the time effect ($F = 97.03$, $p = .00$ ($p < .05$)), and the time-group interaction effect ($F = 10.31$, $p = .00$ ($p < .05$)), but the effect of group was not significant. For a more in-depth analysis of the significance of time, the post hoc pair-wise within group comparisons using the Bonferroni adjustment was conducted for all the groups individually in section 4.3. In this part, the result of the post hoc pair-wise between group comparison using Bonferroni adjustment is reported and interpreted to shed more light on the significance of the time*group interaction.

The preliminary results disclosed that there was no statistically significant difference between the groups in terms of the accuracy in using past simple tense in the pre-test and delayed post-test. Conversely, the groups' performance reached a statistically significant difference in the immediate post-test.

Table 4.26 below represents the descriptive statistics for the immediate post-test. It is revealed that the metalinguistic group outperformed the other groups.

Table 4.26: Descriptive Statistics for the Immediate Post-test (Error Correction)

Group	M	SD
Metalinguistic	9.55	1.43
Direct	8.7	1.65
Indirect	7.55	1.79
Reformulation	7.1	1.8
Control	6.4	1.97

However, based on the results of the post-hoc (table 4.26), the metalinguistic group's mean score difference compared with the indirect, reformulation and control groups' scores was statistically significant. Moreover, the direct group had the second highest score in the immediate post-test and its difference with the reformulation and control group reached the significant level.

Table 4.27: The Effect of Time*Group in Immediate Post-test (Error Correction)

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.
Metalinguistic	Indirect	2.000	0.555	0.005*
Metalinguistic	Reformulation	2.450	0.555	0.000*
Metalinguistic	Control	3.150	0.526	0.000*
Direct	Reformulation	1.600	0.555	0.048*
Direct	Control	2.300	0.526	0.000*

Lastly, the graph below shows all the groups' performance in the three times that the Error Correction Test was administered (as pre-test, immediate post-test, and delayed post-test).

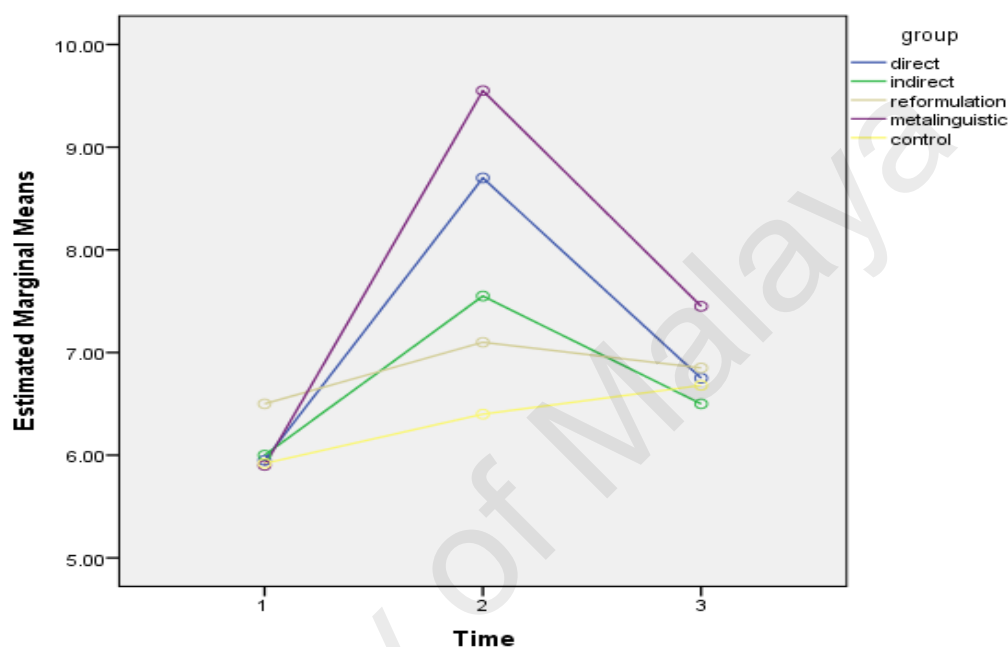


Figure 4.1: Groups' Performance in the Three Times

4.3.6.2. Effects on Implicit Knowledge

As it was already declared, in order to test the learners' implicit knowledge of the past simple tense, the Picture Description Test was given in three different times, as a pre-test, an immediate post-test and a delayed post-test.

Table 4.28: Repeated-measures ANOVA Result for Picture Description Test

Effect		Value	F	Error df	Sig.
Time	Wilks' Lambda	0.504	48.660	99.000	0.000*
Time×group	Wilks' Lambda	0.752	3.797	198.000	0.000*

The scores obtained for the repeated-measures ANOVA clarified that there was significant effect for time ($F = 48.66, p = .00$) and also a significant time-group effect ($F = 3.79, p = .00$) but the group effect did not reach a significant difference ($p < .05$). Therefore, the post hoc pair-wise within group and between group comparisons using Bonferroni adjustment were administered again similar to the Error Correction Test. The result of the post hoc within group for each group was reported above in separate tables in section 4.3. The between group differences are compared below in table 4.29 and 4.31.

Table 4.29: The Effect of Time*Group in Immediate Post-test (Picture Description Test)

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.
Control	Metalinguistic	-20.109	3.823	0.000*
Control	Direct	-20.588	3.823	0.000*
Control	Indirect	-22.997	3.823	0.000*
Control	Reformulation	-16.297	3.823	0.000*

Post hoc pair-wise between group comparisons using Bonferroni adjustment revealed that there was no significant difference between the groups in the pre-test in terms of the accuracy in past simple tense. However, table 4.29 reveals that in the immediate post-test there was statistically significant difference between the control group and all the experimental groups ($p = .00$).

Table 4.30: Descriptive Statistics for Immediate Post-test (Picture Description Test)

Group	M	SD
Metalinguistic	79.57	14.17
Direct	80.05	11.49
Indirect	82.46	9.97
Reformulation	66.27	14.16
Control	59.46	9.45

As the table 4.30 illustrates, the descriptive statistics for the immediate post-test shows that all the experimental groups (metalinguistic, direct, indirect, and reformulation) outperformed the control group in terms of the accurate use of past simple tense.

There was also a statistically significant difference between the control group and the metalinguistic group in the delayed post-test (table 4.31).

Table 4.31: The Effect of Time*Group in Delayed Post-test (Picture Description)

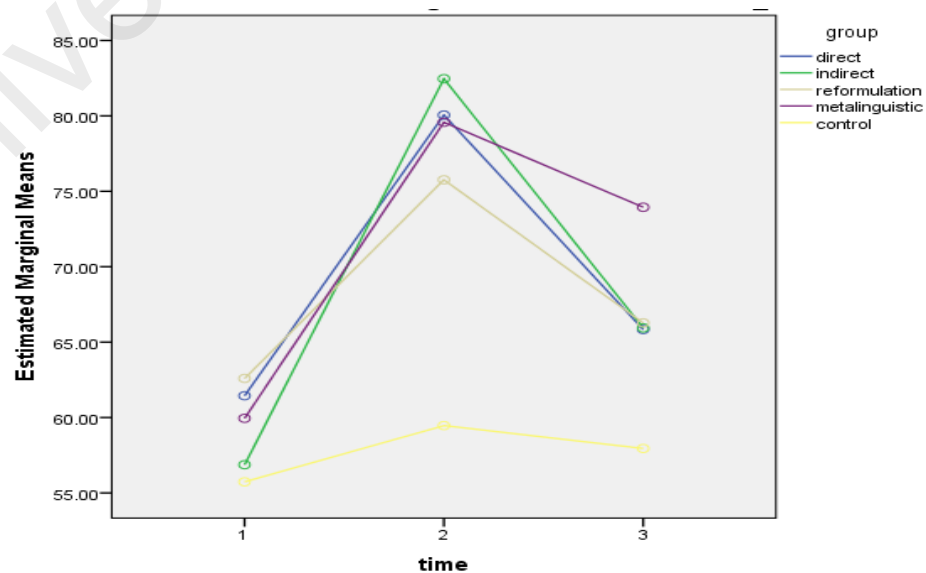
(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.
Control	Metalinguistic	-15.994	3.788	0.001*

Table 4.32: Descriptive Statistics for Delayed Post-test (Picture Description Test)

Group	M	SD
Metalinguistic	73.94	13.90
Direct	65.83	12.10
Indirect	65.94	11.58
Reformulation	66.72	14.16
Control	57.94	11.40


According to the table 4.32, the descriptive statistics for the delayed post-test reveals that similar to the immediate post-test, the control group had the lowest score compare to the experimental groups, though its difference only with the metalinguistic group was statistically significant (table 4.31)

Finally, the graph below shows all the groups' performance during the study at the three different times that the tests were administered (as a pre-test, an immediate post-test, and delayed post-test).

**Figure 4.2:** Groups' Performance in the Three Times

To answer the last research question, the results suggest that there was a difference in the effect that different degrees of explicit WCF had on the development of the learners' explicit and implicit knowledge of the past simple tense. In the first place, both metalinguistic and direct WCF could affect the participants' explicit knowledge of the past simple tense in the short and long term; the indirect WCF on the other hand, could only affect it in the short term and the reformulation was the only kind of WCF that didn't have any effect on the explicit knowledge of the past simple tense (table 4.33).

Table 4.33: Summary of the Results and Answers to the Research Questions

	Feedback Types	Explicit Knowledge	Implicit Knowledge
More explicit 	Metalinguistic WCF	yes (short & long term)	yes (short& long term)
	Direct WCF	yes (short & long term)	no (short term only)
	Indirect WCF	yes (short term)	yes (short & long term)
Less explicit	Reformulation WCF	No	no (short term only)

In the second place, all the experimental groups' implicit knowledge improved in the short term, but this improvement was sustained in the long term for the metalinguistic and indirect group. So, it suggests that the metalinguistic and indirect WCF could be affective in improving the implicit knowledge of the past simple tense.

In conclusion, the findings of the study proposes, then, that if the goal of written error feedback is to develop learners' explicit knowledge, the metalinguistic

and direct WCF may be a more effective means of achieving this than the indirect and reformulation WCF. Furthermore, if it aims to improve the implicit knowledge, the metalinguistic and indirect WCF might be more effectual.

4.4. Result of the Total Scores

Although there was no research question in this study addressing the overall effect of the written corrective feedback on accuracy in using past simple tense, the result of the analysis of total scores are reported in this section to have a rich discussion and shed light on the general impact of the each feedback type considered.

Table 4.34: Descriptive Statistics for the Total Scores

Group	Pre-test		Immediate post-test		Delayed post-test	
	M	SD	M	SD	M	SD
Metalinguistic	65.84	16.22	89.15	14.39	81.44	14.02
Direct	67.86	17.28	88.75	11.96	73.73	13.04
Indirect	63.37	16.95	90.01	9.90	72.59	12.15
Reformulation	72.29	18.37	82.86	18.03	73.12	14.89
Control	61.65	10.51	65.86	9.78	64.62	11.02

The table above (4.34) illustrates the descriptive statistics for the total scores of the subjects. Similar to the analysis of the results of the Error Correction and Picture Description Test, the total scores (the combination of the scores of two tests) were analyzed by repeated-measure ANOVA.

Table 4.35: Repeated-measure ANOVA Result for the Total Scores

Effect		Value	F	Error df	Sig.
Time	Wilks' Lambda	0.483	53.008	99.000	0.000*

According to the table 4.35, considering the total scores, the effect of time was statistically significant ($p = .00$). So, Post-hoc analysis was computed for each group using Bonferroni adjustment that is reported in this section.

Table 4.36: The Effect of Time in Metalinguistic Group's Total Scores

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig
Time 1	Time 2	-23.312	3.916	.000
Time 1	Time 3	-15.594	3.387	.000
Time 2	Time 3	7.718	3.009	.035

The table (4.36) shows that the metalinguistic WCF could affect the learners' performance positively in both short and long term. Because, there was a positive significant difference between the pre-test and immediate post-test ($p = .00$) as well as the pre-test and delayed post-test ($p = .00$). But, the learners total score in this group dropped significantly from the immediate post-test to delayed post-test ($p = .00$).

Table 4.37: The Effect of Time in Direct Group's Total Score

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig
Time 1	Time 2	-20.884	3.916	.000
Time 1	Time 3	-5.865	3.387	.259
Time 2	Time 3	15.02	3.009	.000

The result of the post-hoc for total scores of the direct group (table 4.37) revealed that the learners' performance in this group was positively affected by the direct WCF in terms of the accuracy on using past simple tense in short term, since there was a positive significant difference between the pre-test and immediate post-test ($p = .00$). However, there was no significant difference between the pre-test and delayed post-test ($p = .25$). So, it can be said that direct WCF was not effective in long term.

Table 4.38: The Effect of Time in Indirect Group's Total Scores

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig
Time 1	Time 2	-26.641	3.916	0.000
Time 1	Time 3	-9.221	3.387	0.023
Time 2	Time 3	17.42	3.009	0.000

As far as the effect of the indirect WCF is concerned on the general performance of the learners, the table 4.38 displays that this group's performance was similar to the metalinguistic group. The learners score in this group increased significantly from the pre-test to immediate post-test ($p = .00$) and also from the pre-test to delayed post-test ($p = .02$), though their total score decreased significantly from the immediate post-test to delayed post-test ($p = .00$). Therefore, the indirect WCF was effective in improving the learners' performance in short and long term.

Table 4.39: The Effect of Time in Reformulation Group's Total Scores

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-10.576	3.916	0.024
Time 1	Time 3	-0.835	3.387	1.000
Time 2	Time 3	9.741	3.009	0.005

The last experimental group showed a significant gain in short term only ($p = .02$). Although the learners' scores in this group inclined from the pre-test to immediate post-test significantly ($p = .02$), it declined significantly from the immediate post-test to delayed post-test ($p = .00$). Moreover, there was no statistically significant difference between the pre-test and delayed post-test ($p = 1.0$). It is interesting to note that this groups' performance was similar to the direct group.

Table 4.40: The Effect of Time in Control Group's Total Scores

(I) Factor1	(J) Factor1	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	-4.212	3.502	0.696
Time 1	Time 3	-2.972	3.029	0.987
Time 2	Time 3	1.240	2.692	1.000

Finally, the post- hoc analysis of the total scores in control group didn't show any significant difference in short and long term.

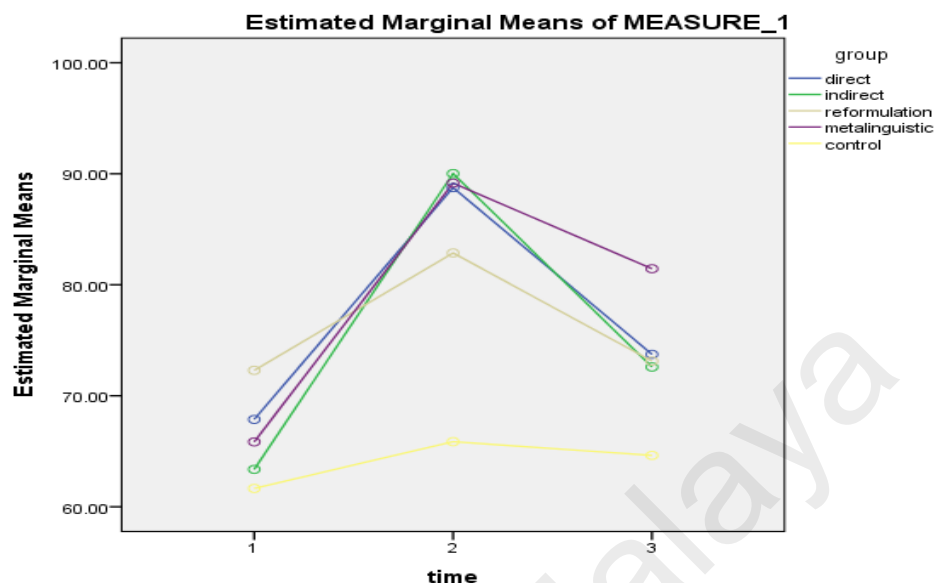


Figure 4.3: Groups Overall Performance

4.5. Discussion

In this section the results of the study are discussed in terms of the overall efficacy of WCF, degree of explicitness of WCF, and the improvement of the explicit and implicit knowledge. Some findings are in agreement with previous empirical findings, while some others are in disagreement.

4.5.1. The Overall Efficacy of Written Corrective Feedback

Taken as a whole, the experimental groups' performance improved and they outperformed the control group, although some kinds of WCF differed in effect in the short and long term. Based on these results, the outcome of the study contributes to the ongoing debate on WCF in favor of advocates of WCF on learners' performance. In other words, highlighting the positive effect of WCF the results suggested that EFL teachers should supply learners with WCF. These results corroborate some recent studies (e.g., Sheen, 2007; Bitchener, 2008; Bitchener &

Knoch, 2008) that examined the effect of WCF over a period. The enduring effect on accuracy is a clear evidence of the potential for focused WCF to help learners acquire a feature of a foreign language that is a pleasing result for researchers and teachers. For example, Sheen (2007) answered her research question “Does written corrective feedback help L2 learners’ written accuracy?” with a “definite yes”. Similarly, Chandler (2003 & 2004) stood for providing WCF for EFL and ESL learners. Agreeing with these scholars, Ferris (1996) and Ferris and Roberts (2001) were also advocates of correcting learners’ errors. They claimed that corrective feedback should be inserted into the learning context for several reasons. To illustrate, learners considered correction as indispensable elements of the learning situation and expected to be corrected. In other words, they believed in corrections and felt secure when corrected.

This study also found that the accuracy of the participants (in using past simple tense) in some cases varied significantly across the different times of the tests. In other words, there was not a linear and upward pattern of improvement from one test to another. This was not surprising as earlier research has shown that learners, in the process of learning linguistic forms, may perform them with accuracy on one occasion but fail to do so on another similar occasion (Ellis, 1994; Lightbown & Spada, 1999; Pienemann, 1998). These variations could also have been the result of other variables such as the nature of the tasks, the scheduling of the tasks, and individual performance factors that can cause the non-consistent learning curve. For example, the personal circumstances and daily experiences of individual learners can often have an effect on their motivation and attention-span. It might also be due to the fact that they have been at the unstable stage of learning a feature

that has not been implicit and internalized yet. Every effort was made to write task rubrics that would provide participants with opportunities to use the targeted linguistic feature. Inevitably, minor differences in subject focus may have made the use of some forms obligatory and others optional, thereby enabling learners to avoid using targeted feature they were not confident in using correctly. It is also possible that the timing of a task may influence the quality of performance, but it is unlikely that this was a factor in this study because the time of day and the days of the week during which the tasks were performed did not differ.

Therefore, despite Truscott's (1996, 1999, and 2004) claims that WCF should be abolished because it is ineffective, the current study and all previous studies above confirmed the necessity and effectiveness of WCF and showed that it is facilitative of improved written accuracy and is worth the time and effort. More discussion on this issue is provided in the next sections.

4.5.2. Degree of Explicitness of WCF

We now examine the results from the perspective of the degree of explicitness of WCF. The degree of explicitness of the feedback provided to learners has been claimed to constitute the "pivotal factor" in making feedback beneficial for learners (Sheen, 2010). According to Schmidt's (1990) "noticing hypothesis", in order to learn anything, including grammatical forms of a language, noticing is essential. For this reason, the degree of explicitness of CF is necessary to promote noticing (Russell & Spada, 2006). While the stronger version of the hypothesis states that noticing is a necessary condition for learning, the weaker version claims that noticing is helpful but not necessary. The proponents of the Noticing Hypothesis

advocate the benefits of corrective feedback in stimulating noticing, or rather, in drawing learners' attention to form (Ellis, 1994; Robinson, 1995).

DeKeyser's (1995) definition of explicit is that something is explicit if either a rule is given or if the learner has been directed to pay attention to a specific form. Thus, all methods of WCF are considered explicit here including reformulation, indirect, direct, and metalinguistic WCF. However, based on the information provided by the teacher about the error, each type of WCF is placed in a continuum ranging from more explicit to less explicit: 1) metalinguistic 2) direct 3) indirect 4) reformulation as the figure (4.4) below shows:



Figure 4.4: Continuum for the Degree of Explicitness of WCF

Although, there are studies that found no difference between the different types of WCF (e.g. Lalande, 1982; Semke, 1984; Robb et al., 1986), different research findings in the literature suggest various implications on the superiority of WCF techniques (e.g. Bitchener et al., 2005; Chandler, 2003; Ellis, 2008). As far as can be determined, there is no single study which investigated the continuum of written corrective feedback from the perspective of the degree of explicitness specifically, although the degree of explicitness of oral corrective feedback has already been investigated in the literature (for example: Carroll and Swain, 1993).

In Carroll and Swain (1993)'s experimental study, the effectiveness of several different types of oral CF on adult second language learners' ability to learn

particular constraints on English dative alternation (NP V NP to/for and NP V NP NP) has been investigated. They compared five groups.

Group one was ‘explicit hypothesis rejection’ (in which subjects were told they made an error and were given an explicit metalinguistic explanation). The type of explicitness of feedback for this group was parallel to the metalinguistic group in this study. The second group was called ‘explicit utterance rejection’ (in which subjects were told only that they had made an error). This group matches the indirect group of the present study. Another group was ‘modeling plus implicit negative feedback’ (in which errors were recast, subject had been told beforehand that they would receive correction if they made errors). This group best matches with the reformulation group of this study. ‘Indirect metalinguistic feedback’ was the last experimental group (in which subjects were asked if they were sure of their purpose when they made an error, having been told beforehand that they would be asked this if they made errors). Moreover, similar to this study, there was a control group which did not receive any feedback. In their study, all the experimental groups outperformed the *no feedback* control group. An interesting result from Carroll and Swain’s (1993) study is that the ‘explicit hypothesis rejection’ group which received the most explicit feedback and parallels the metalinguistic group in the current study, performed significantly better than all the other groups.

Their finding was different from the findings of this study. In this study, all the experimental groups performed better than the control group in the short term. The metalinguistic and indirect WCF did not lose their effect in the long term. The findings from the delayed posttest confirmed the superiority of the metalinguistic and indirect WCF over reformulation and direct WCF in the long term.

Metalinguistic and indirect WCF had durable positive effects on subject's performance in both of the tests.



Figure 4.5: Superiority of the Metalinguistic and Indirect WCF

As the figure (4.5) above shows, there was not a linear pattern in the efficacy of the different degrees of the explicitness of WCF. While the most explicit kind of WCF (metalinguistic) was effective in improving the target structure (past simple tense), the less explicit kind of WCF (indirect) has the same effect as well. Although Sheen's (2010) postulation that the degree of explicitness plays a pivotal role in making feedback beneficial for the learners is seconded here; other reasons and factors for the different efficacy of each feedback type are possible and are explained below.

In this EFL study, one of the potential reasons for the efficacy of metalinguistic WCF over the other types of WCF could be due to familiarity. Most of the schools in Iran practice metalinguistic WCF. Hence, a type of WCF such as metalinguistic feedback which is familiar to learners, can potentially aid acquisition of the target form.

Another possible aspect is the selection of target form to be corrected. In Sheen's earlier study (2007) which focused on the effect of two types of written corrective feedback: metalinguistic and direct WCF, the learners whose errors on targeted linguistic feature were corrected in the form of metalinguistic explanations

outperformed the learners who received only direct corrections on the target feature. Moreover, the significant difference between those groups did not lose over time. In contrast, in this study although metalinguistic and direct WCF were both effective in the short term, the efficacy of direct WCF was lost over time. In other words, there was no statistically significant difference between metalinguistic and direct group in the short term, but in the long term, metalinguistic group outperformed the direct feedback group. Furthermore, her study differed from this study in two ways. First, the study focused on the acquisition of articles; second, she just compared two types of WCF, that is, metalinguistic and direct WCF.

Further, Sheen (2007) explained the result by Schmidt's account of the role of awareness in L2 acquisition which is also applicable in this study. Schmidt (1995, 2001) distinguished awareness at the level of noticing and at the level of understanding, which is a higher level of awareness. Noticing involves simply attending to exemplars of specific forms in the input (e.g., English has *a* and *the* in sentences); understanding entails knowing a rule or principle that governs that aspect of language (e.g., English uses *a* before the first mention of a noun and *the* before the second mention). Thus, it can be argued that whereas both metalinguistic and direct WCF are likely to promote awareness as noticing, only metalinguistic comments promote awareness with understanding. An important aspect of the metalinguistic feedback is that students examine and understand the rules governing the linguistic structures they used so that they can employ the correct forms in the future. Based on the results of the study it is apparent that direct feedback only is not enough for students to improve their writing skills because they do not have to reflect on the corrected mistakes. They simply copy the

corrected speech into the new draft. Direct WCF is not as effective in helping students avoid errors because it only draws their attention to an error in grammatical category, but not to a rule.

Besides the metalinguistic type of WCF, indirect WCF which assigned the responsibility for correction to learners themselves was also effective in the long term. In this respect, the findings of this study seemed slightly different from the literature. Rare studies on comparing the durable effects of different types of WCF revealed the superiority of indirect corrective feedback over time (for example Ferris et al., 2000 and Chandler, 2003). Chandler compared the effects of teacher direct and indirect corrective feedback on learners' performance and put forward that direct corrective feedback by the teacher seemed the best corrective feedback method (considering the accuracy in text writing). She also stated that direct corrective feedback by the teacher was also the most preferable method among the students. Nevertheless, Chandler was right when she explained the reason for the failure of the indirect group in such a way that leading learners to self-correction might delay internalizing the correct form. In fact this can be considered as one of the reasons for the effectiveness of the *indirect* corrective feedback group in this study in terms of accuracy in using past simple tense specially in the long term. In other words, for the indirect feedback to be effective longer period of time is needed for the learners to internalize the correct form, precisely because they do not receive the correct form and explanation of their errors, they are forced to find out for themselves. Chandler (2003) found underlining students' errors is useful for improving accuracy over time. In other words, students' retained improvement for a longer period of time after they received less explicit feedback. However, she also

argued that more explicit feedback (i.e. direct correction) could help students produce a better second draft by using the teacher's corrections. Ferris (2006) and Haswell (1983) also argued that minimal marking helped students reduce error ratios.

Furthermore, in this Ferris (2002, 2004) claimed that indirect corrective feedback led learners to be reflective and analytical because they took on more responsibility. Due to this reason, teachers should use indirect corrective feedback instead of direct corrective feedback. However, she also warned that teachers could provide direct corrective feedback under some circumstances. For example, the proficiency level of learners could be taken into account when deciding the corrective feedback type.

Indeed at the end of her descriptive study, Lee (2004) also proposed that different types of corrective feedback which lead to self-correction should be the preferred types of WCF for specific learners at higher proficiencies and direct corrective feedback should be used in less proficient groups. Hence, the reason for the indirect group's merit compared to other groups might take its source from the proficiency level of the subjects.

In Robb et.al.'s (1986) longitudinal study contrasting the effect of the direct and indirect corrective feedback on the learners' grammatical errors, on the other hand, no significant difference was found between direct and indirect group at the end of the study and they suggested that teachers should use indirect corrective feedback since it was less time consuming.

The most significant theory that supports indirect WCF can be found in the notion of “input enhancement” (Smith, 1993), which refers to “corrective feedback as one specific form of consciousness raising” (Fotos, 1993, p. 386), or “noticing” (Schmidt, 1990, p. 129). In order to learn any aspect of the L2, students have to notice the relevant linguistic structures. One important characteristic of “noticing” is that as forms become intake and learners produce these with increasingly greater ease, they become routine for the learner (Smith, 1993). It is important to draw students’ attention to their errors and to encourage them to explore on their own the source of them. All learners have some kind of universal set of errors, which includes simplification, generalization including L1 transfer, imitation, as well as a set of operating procedures, which includes the use of formal rules, use of repairs, rote memorization, and talk/listen variation. Their attention needs to be drawn to these typical errors even while the teacher helps them to develop strategies for recognizing the individual errors that they make. Some studies show that discovering solutions may be more motivating for learners than simply copying forms provided by teachers (Lalande, 1982, p. 147; Edge, 1989, p. 53).

As mentioned earlier, in general, the reformulation and direct groups’ performance was improved just in the short term. The possible explanation for the inefficacy of reformulation in the long term might relate to the very nature of the reformulation process which usually entails that students may not have noticed the correction of their errors. In addition, as noted by Sachs and Polio (2007) in relation to their own data, the greater visual saliency which characterizes error corrections may facilitate uptake. Along the same lines, Sheen (2010) goes as far as suggesting that more explicit CF types “enable learners to notice the gap between their non-

target output and the correct form; this, in turn, facilitates interlanguage development” (p. 226).

Furthermore, a caveat suggested in research is that some types of feedback are more useful in treating some types of error than others, though there is no definite answer to it. The research of Ferris (1995), Ferris and Roberts (2001), Ferris (2006) and Ferris et al. (2010) found variation between students as regard this issue (i.e. some types of feedback helped some students improve in some aspects of writing). For example, Ferris (2002) argued that direct corrective feedback may be useful for treating errors of prepositions and also for drawing students' attention to remaining errors after their compositions were finalized. Bitchener et al. (2005) also claimed that corrective feedback with meta-linguistic explanation was useful in treating errors in the use of tenses and the definite article, but not prepositions. Additionally, in line with the Bitchener et al. s' (2005) findings, this study suggested that treatable errors such as verb tense should be treated with metalinguistic or indirect WCF for improving learners' performance in the long term. Because, the use of past simple tense is determined by a set of rules, that is 'treatable'.

It is interesting to note that this finding is also supported by a recent SLA study (Ellis et al., 2006) which examined the effectiveness of oral corrective feedback. Ellis et al. investigated the effect of two types of corrective feedback on the acquisition of past tense -ed by low intermediate ESL students. One group received implicit corrective feedback in the form of recasts, a second group received explicit corrective feedback in the form of meta-linguistic explanation, and a third group, acting as the control group, received no corrective feedback. The two post-test scores revealed a clear advantage for students who received corrective feedback.

Students who received oral corrective feedback outperformed those who received no feedback in all the post-tests (except one in which the control group performed slightly better than the indirect WCF) even though all groups developed differently over time. However, the performance of the control group improved in the delayed post-test. One explanation postulated by Ellis et al. (2006) for this improvement might be that some members of the group sought input on the targeted feature during the weeks that feedback groups may have passed on information about what they were receiving feedback on or that students in the control group sought instruction from out-of-class sources.

Although some studies (e.g., Ferris and Roberts, 2001) found no difference between more or less explicit feedback in that both were useful in helping students improve, based on the findings of this study, it seems that using more or less explicit feedback makes a difference to the students. Considering the efficacy of different degrees of explicitness of WCF on past simple tense, it can be suggested that all WCF types were equally effective in the short term, but only metalinguistic and indirect WCF could keep their effect in the long term which means they could lead to acquisition of the structure and helped the learners to internalize the form.

Last but not the least, the degree of explicitness required may hinge upon other factors such as learners' levels of proficiency (e.g., Philp, 2003; VanPatten, 1990), readiness for certain linguistic features (e.g., Han, 2002, Mackey & Philp, 1998; Philp, 2003), the linguistic features targeted (e.g., Doughty & Williams, 1998; Gass et al., 2003; Schmidt, 1995; VanPatten, 1994), and the contexts where feedback is provided (e.g., Ellis et al., 2001; Nicholas et al., 2001; Oliver & Mackey, 2003). Such factors merit careful examination to isolate optimal ways to promote learners'

noticing of the gap. Such explorations would form the basis for the future studies in WCF.

4.5.3. Improvement of the Explicit and Implicit Knowledge

Some theorists like Dekeyser (2007b) argue that explicit, declarative knowledge (such as that which can be drawn upon in off-line written contexts) can be converted to implicit knowledge and facilitate L2 acquisition through written output practice. The potential of WCF to play a role in this process has been posited in several theoretical predictions, as discussed in the second chapter.

Nevertheless, there are no “pure” measures of implicit and explicit knowledge (Ellis, 2009). This is because, under any conditions of use, learners will make use of the linguistic resources at their disposal. However, as Ellis pointed out, it is possible to design instruments that will bias learners to the use of one type of knowledge or the other. He identified four criteria that could be used to design instruments for measuring the two types of knowledge: 1. Degree of awareness (i.e., whether the instrument favors the use of “feel” or “rule”). 2. Time available (i.e., whether the instrument puts pressure for learners to process online or whether it allows for offline processing). 3. Focus of attention (i.e., whether the instrument focuses learners’ primary attention on meaning or on form). 4. Utility of knowledge of metalanguage (i.e., whether the instrument requires or induces learners to access their knowledge of metalanguage).

Following Shintani and Ellis (2013), two instruments (Error Correction Test and Picture Description Test) were used in this study. The Error Correction Test was chosen as a measure of learners’ explicit knowledge. This test, which required learners to identify errors in sentences and then write out the sentences correctly,

clearly favors the use of “rule”, was unpressured, required a primary focus on form, and potentially made the use of metalanguage advantageous.

The Picture Description Test that was used to measure the implicit knowledge, consisted of picture compositions; learners were instructed to write out the story depicted in the pictures and were given a limited amount of time to do so. Such a task favors the use of “feel”, was time-pressured, required a primary focus on meaning and did not encourage learners to access metalanguage. Thus, it can be considered as biasing learners to the use of their implicit knowledge.

In this section we consider how different degrees of explicit WCF led to improvement of the explicit and implicit knowledge of the past simple tense that was measured by the tests explained above.

Considering the effect of the different WCF types on explicit knowledge, the findings of the study revealed that the same pattern was followed in the metalinguistic and direct group. They were both effective in improving the explicit knowledge of past simple tense in the short and long terms. Conversely, in the other two experimental groups (indirect and reformulation) the story was quite different. While the indirect WCF could improve the learners’ explicit knowledge in the short term, the reformulation had no effect on their explicit knowledge of the past simple tense in short and long term.

Moreover, what was interesting and worthy of some discussion is the fact that the more explicit WCF types (metalinguistic and direct WCF) lead to more improvement in explicit knowledge of the past simple tense. It demonstrates the value of the aspect of explicit learning for developing at least explicit declarative knowledge that can be retained over time.

This finding is consistent with the results of some previous studies (e.g. Bitchener, 2008; Bitchener et al., 2005; Bitchener & Knoch, 2008) that found the effect of WCF on improving learners' accuracy of article use in writing task without time limit which is thought to mainly elicit learners' explicit knowledge. So, this study provides further evidence for the positive role of WCF in facilitating development of explicit knowledge. However, contrary to some theorists' claim that explicit intervention like CF can only foster the development of explicit knowledge but has no effect in improving implicit knowledge (e.g., Truscott, 1996), the current study found that WCF can also facilitate the acquisition of implicit knowledge of the simple past tense form.

Turning to the implicit knowledge, the metalinguistic and indirect WCF proved to be effective in the long term. However, the reformulation and direct WCF could not affect the implicit knowledge of the learners in terms of the accuracy of past simple tense form, though they were both effective in the short term. As mentioned earlier, to prove the improvement of the implicit knowledge, the effect of the WCF must be durable, that is, it should be maintained when tested in the long term.

In general, it is suggested that WCF had effects on both explicit and implicit knowledge of the past simple tense.

The results of the study corroborate the findings of Jiang and Xiao (2014) in terms of the explicit knowledge improvement. They compared the differential effects of metalinguistic and direct WCF on the development of explicit and implicit knowledge of English articles. Similar to this study, the results indicated that the two WCF types had the same effects on the development of explicit

knowledge. Jiang and Xiao (2014) suggested that the function of WCF was just to activate the learners' existing explicit knowledge. The metalinguistic and direct WCF both included correct forms which were capable of arousing learners' attention and then activating their existing explicit knowledge of English articles; hence the provision of additional metalinguistic information did not make much difference in fostering learners' explicit knowledge. As a result, metalinguistic and direct WCF benefited explicit knowledge to the same extent.

However, in terms of implicit knowledge, the result of their study is different from this study. They found that the two WCF strategies (metalinguistic and direct) differed in effects: the metalinguistic WCF was superior to the direct in the short-term. To put it another way, metalinguistic comments had a significantly positive effect on immediate learning but its effect wore off over time. It is generally assumed that implicit knowledge once developed is not easily forgotten, so if the metalinguistic information had had an effect on learners' implicit knowledge, the effect should have been durable. Thus, it's reasonable to draw a conclusion that metalinguistic information in their study had no effect on the acquisition of implicit knowledge. However, in this study although similar to Jiang and Xiao's (2014) study, metalinguistic was superior to direct WCF in the short term, its effect was maintained in the long term.

Shintani and Ellis (2013) also compared the effect of direct WCF with the provision of metalinguistic explanation on accuracy of use of the target feature (the English indefinite article) in terms of explicit and implicit knowledge. The effect of these two types of error feedback was also measured by an Error Correction Test and by examining both the revised text and new pieces of writing by 49 low-

intermediate ESL students in an intensive language programme in the United States. They found that the direct WCF had no effect on accurate use of the target feature suggesting that it benefited neither implicit nor explicit knowledge. But, in this study it could improve the explicit knowledge of the past simple tense in the short and long term. However, similar to the findings of this study, they reported that the metalinguistic helped to develop learners' L2 explicit knowledge in the short and long term. Moreover, in this study the metalinguistic WCF was effective in developing the implicit knowledge but based on the findings of Shintani and Ellis (2013) the effect of metalinguistic explanation was not durable and thus probably had no effect on their implicit knowledge. They suggested that if the goal of WCF is to develop learners' explicit knowledge, metalinguistic may be a more effective means of achieving this than direct WCF.

However, there are a number of differences between this study and their study. The metalinguistic WCF they investigated took the form of a handout providing an explanation of the target structure (articles), which was given to all the students when they had finished writing. Thus, no correction of individual learners' writing took place. In this study, it was provided by numbering errors and then providing a brief metalinguistic explanation of each type of error (following Bitchener & Knoch, 2010). The target structures considered were also different (indefinite article in their study and past simple tense in this study). Furthermore, in their study, two feedback types were considered but in this study four types of WCF with different degrees of explicitness were examined.

Nevertheless, the findings of this study proposes that if the goal of WCF is to develop learners' explicit knowledge of the past simple tense, the metalinguistic

and direct WCF may be a more effective means of achieving this than the indirect and reformulation WCF. Furthermore, if it aims to improve the implicit knowledge of the past simple tense, the metalinguistic and indirect WCF might be more effectual.

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CHAPTER 5: CONCLUSION and RECOMMENDATION

In order to present a comprehensive and beneficial conclusion for the current study, first the study is summarized briefly. Subsequently, some useful theoretical and pedagogical implications on WCF treatments are suggested, and then some suggestions for further research and the limitations of the study are presented.

5.1. Summary of the Study

The purpose of this study was three-fold: 1) to examine the general efficacy of different types of WCF on the errors of the target structure (past simple tense) in the short and long term, 2) to compare the possible difference in the effect that different degrees of explicitness of WCF might have on improving the target structure in the short and long term, and 3) to investigate the effect of the different degrees of explicitness of WCF on explicit and implicit knowledge of the past simple tense) in the short and long term.

The findings of the study contributed to the ongoing debate on WCF in favor of advocates of WCF on learners' performance. In other words, highlighting the positive effect of WCF, the results suggested that EFL teachers should supply learners with WCF.

Considering the results of the test as a total score, it was also found that all experimental groups performed better than the control group in the short term, but the metalinguistic and indirect WCF did not lose their effect in the long term. The findings from the delayed posttest confirmed the superiority of the metalinguistic and indirect WCF over reformulation and direct WCF in long term. Metalinguistic and indirect WCF had durable positive effects on subject's performance in both of the tests. So, there was not a linear pattern in the efficacy of the different degrees

of the explicitness of WCF. While the most explicit kind of WCF (metalinguistic) was effective in improving the target structure (past simple tense) in the long term, the less explicit kind of WCF (indirect) had the same effect on it as well.

Moreover, the result of the Picture Description Test as a measure of implicit knowledge revealed an interesting finding, which is the metalinguistic and indirect WCF were the most effective WCF types in developing the implicit knowledge of the learners.

Measuring the explicit knowledge by the Error Correction Test, it was found that the provision of more explicit WCF (metalinguistic and direct) resulted in significantly greater accuracy when the past simple tense was tested in the short and long term, that is the metalinguistic and direct WCF were both significantly effective in improving the learners' explicit knowledge of the past simple tense in the short and long term. So, the more explicit types of WCF (metalinguistic and direct) could affect the explicit knowledge of the past simple tense positively. It is worthwhile to mention that the indirect WCF (less explicit than the metalinguistic and direct WCF) just has a short term effect on improving the explicit knowledge and the least explicit kind of the WCF, that is , reformulation had no effect on the explicit knowledge of the past simple tense.

Overall, the study favored written corrective feedback in general and metalinguistic and indirect WCF more specifically for Iranian EFL context. Because these two types of feedback could lead to the improvement of the implicit knowledge of the past simple tense, which means that the learners have acquired the target structure. Once the learners have improved their explicit knowledge it might be forgotten easily, because it means that the target structure is not internalized yet,

but when their implicit knowledge of the target structure is improved it can not be easily forgotten. The findings of this study not only indicate the immediate effect of written corrective feedback on writing but also the extent to which the level of accuracy was retained over a month period without additional corrective feedback and classroom instruction.

5.2. Theoretical and Pedagogical Implications

One of the goals of the study i.e. the effect of WCF on implicit and explicit knowledge, was theoretically motivated. Although there is enough evidence to show that WCF leads to improved accuracy in writing, it is not clear whether this is because of the effect it has on implicit or explicit knowledge. It is not known which type of knowledge (explicit or implicit) learners draw upon while they are writing and whether the type of WCF which is employed to edit or rewrite their text over time is stored as unconscious procedural knowledge or explicit declarative knowledge in the students' memory (Sheen 2007; Bitchener 2008). As Polio (2012) pointed out, there is a need to establish an agenda for researching the effects of written error feedback on the development of learners' explicit and implicit knowledge. Bitchener (2012) was also concerned with whether WCF can affect implicit knowledge. However, there has been only one study (Shintani & Ellis, 2013) that has specifically addressed the effects of WCF on explicit and implicit knowledge. Following Shintani and Ellis (2013), this study was designed to shed more light on this agenda.

The other purposes of the study were both theoretically and pedagogically important. Whether the degree of explicitness plays a role in the development of

writing is an important issue to be considered. Theoretically, if the more explicit kinds of WCF are more helpful than less explicit ones, theoretical explanations that describe and expect how the learners acquire L2 should consider these differences as empirical evidence and L2 learning conditions. Pedagogically, teachers can then be more specific and know how and what can help learners to improve the most. Thus far research on WCF has not produced consistent and clear findings about the degree of explicitness of feedback. However, it seems that so far no study has considered this issue and its effect on explicit and implicit knowledge (Bitchener, 2012). Another purpose of the study that is, the general efficacy of WCF was of pedagogical importance. Teachers need to know whether providing learners with the written corrective feedback that is a time-consuming job helps them to improve their writing.

Thus, in this section the pedagogical implications of this study are explained that is followed by the theoretical implication.

Based on the findings of the study, a number of pedagogical recommendations can be offered. The findings of the study proposes, then, that if the goal of WCF is to develop learners' explicit knowledge, the metalinguistic and direct WCF may be more effective means of achieving this than the indirect and reformulation WCF. Furthermore, if it aims to improve the implicit knowledge, the metalinguistic and indirect WCF might be more effectual.

Furthermore, teachers should feel confident about providing WCF on their students' linguistic errors, providing it is based, to the best of their knowledge, on their students' 'readiness', that is investigating the most problematic structure to focus. Teachers should also be patient with the results of WCF since some grammar

items like past tense might require an extended period of time for WCF to reveal any effect on implicit knowledge. It is not realistic to assume that every student would act and reflect upon each WCF annotation. We cannot expect that a target form will be acquired soon after it has been highlighted through WCF. L2 educators should also develop strong lexicogrammatical knowledge and metalinguistic expertise, if they are to provide optimal explicit WCF.

Turning to the theoretical implications of the study, the findings of this study contribute to the Skill Acquisition Theory. This theory (e.g., DeKeyser, 1998) sees a role for WCF in assisting learners to proceduralize their declarative knowledge of the L2, which is to turn their explicit knowledge into implicit knowledge (Ellis, 2010). As the figure (5.1) below shows, by providing the explicit knowledge, feedback can help the learners not to proceduralize the wrong information and to focus on problem areas (Polio, 2012). DeKeyser (2007) also describes how prolonged systematic practice can help learners to automatize the explicit knowledge.

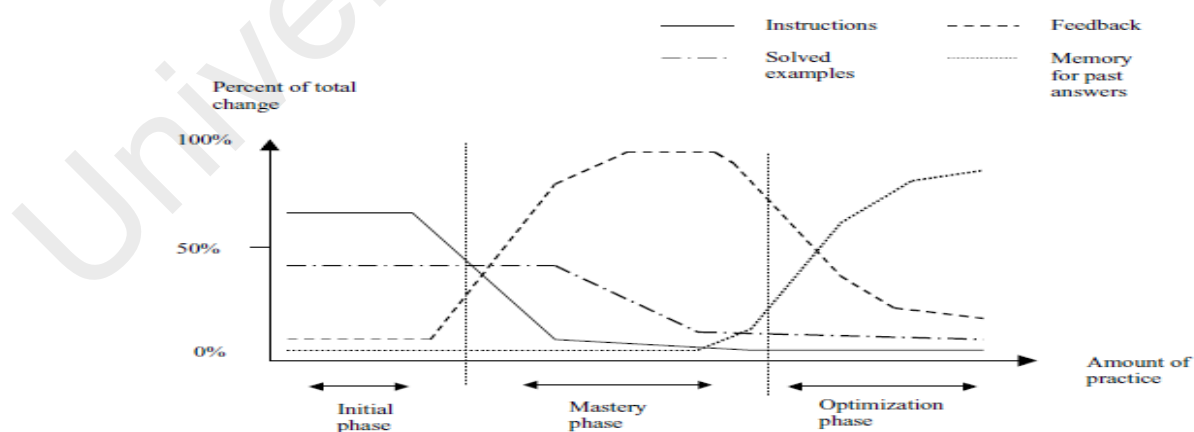


Figure 5.1: Role of Feedback in Skill Acquisition Theory (Kim et al , 2013)

An inspection of the pretest scores suggested that all of the learners initially had limited explicit and implicit knowledge of the past simple tense. This was especially apparent in their inability to produce the correct forms in their Error Correction and their difficulty in Picture Description Test. However, the results showed that the WCF resulted in significant differences among the groups on Error Correction Test as immediate posttest. But for the Picture Description Test, these differences were evident in the immediate and post-test. Therefore, overall, WCF appears to have had a greater effect on the learners' implicit knowledge than on their explicit knowledge.

This finding also lends support to Ellis' (1994) and Ellis' (2006) claims that explicit knowledge provided through explicit intervention like written CF can assist the development of implicit knowledge by promoting "noticing" and "noticing the gap" (Schmidt 1994), and such effect is not only significant but also can be sustained over time. It is generally assumed that learners need to be drawn to linguistic forms so as to be able to make progress in their well-formed L2 use (Ellis, 2005; Norris & Ortega, 2003). Written CF helps learners to notice gaps between the target language and their output, to analyze those mismatches, and to make repairs not only to their immediate output but to their still-developing language knowledge.

5.3. Limitations and Recommendations for Further Research

Despite all of the insights that this study provided into the nature of error correction among foreign language students, it had some shortcomings. This study focused on one problematic structure which was determined by analyzing the

learners' first draft as the pre-test, further research is now required to determine the extent to which WCF is effective in helping learners acquire other forms/structures that they use incorrectly. It is especially important that it be tested with more complex features to determine whether or not its optimal effect is with single rule-based function such as one examined in this study. The use of the past simple tense is determined by sets of rules, as Ferris (1999) suggests, they are readily "treatable". Further research can also be done to investigate the untreatable errors. WCF research also needs to embrace a much richer a complex operational definition of writing and composing. Unfortunately, we are a long way from understanding the contribution of WCF to complex writing and composing subskills. Further research is also required to see if there is an advantage for different types, amount, frequency and delivery of metalinguistic explanation over a range of testing occasions. Further research is also needed to determine whether or not written metalinguistic explanation is more beneficial than oral metalinguistic explanation and whether or not metalinguistic explanation has an advantage over other types of WCF when other linguistic error categories are investigated.

It should also be acknowledged that the participants in the study (Azeri students in Iran where English is most often studied as a foreign language in formal instructional settings and the focus is usually form- and structure-based as opposed to competency-based) have had some earlier instruction in the use of the targeted functions, but that their mastery or acquisition was still being established. Thus, further research is needed to determine the extent to which corrective feedback helps learners develop accuracy in the use of completely new linguistic forms and structures.

Moreover, while performance on the delayed post-test reveals the learners' level of retention, it does not mean that accuracy in this test was necessarily only the result of the treatment provided. In any longitudinal study, it is not possible to control for the effect of intervening variables such as additional instruction that may have been received outside of class time or additional self-study engaged in by highly motivated students. Methodologically, further research could investigate whether or not students receive such input by means of a self-report questionnaire or interview.

The population focus of the study was EFL Iranian learners at intermediate level of proficiency. In further research it could also be extended to include students from other L1 and ethnic backgrounds (international and migrant) and other proficiency levels of English. Future researchers should also consider employing incentives to invite more learners to participate in the study. The variation in individual student response to error correction should be investigated. Error feedback might work with one student but not with another. This variation is attributed to individual differences between students and thus could have important pedagogical implications, especially in that students have different expectations from their teachers. Though they appreciate their teachers' feedback, they also expect the teacher to understand their needs based on their proficiency levels.

There is also a need to investigate whether there is a connection between students' level of English and their capacity to benefit from feedback. Though this study provides a provisional answer, there is need for research that uses two experimental groups; one of lower and the other of higher proficiency students.

Both groups should be given similar feedback treatment and then the results could be analyzed to detect any difference between and within groups.

This study also measured accuracy retention over one month period, but further research would do well to extend this scope to include several additional post-tests over a longer period of time so that the ultimate value of WCF for acquisition can be determined. The effects of cognitive and emotional experiences in that period could be stated as one of the limitations of the current study.

Last but not the least, a disappointing feature of so much WCF research (including this study) is that studies tend to focus on highly discrete linguistic features (e.g., articles, propositions, subject and verb inflections, and so on) that may only minimally influence L2 writers' global proficiency and ability to convey their ideas in writing.

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