

WRITTEN CORRECTIVE FEEDBACK: EFFECTS OF  
FOCUSED AND UNFOCUSED GRAMMAR CORRECTION  
ON THE CASE ACQUISITION IN L2 GERMAN

BY

SONJA HUIYING SUN

Submitted to the graduate degree program in German department and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

---

Chairperson Dr. Nina Vyatkina

---

Dr. James H. Brown

---

Dr. William J. Comer

---

Dr. Arienne M. Dwyer

---

Dr. William D. Keel

Date Defended: April 2, 2013

The Dissertation Committee for Sonja Huiying Sun  
certifies that this is the approved version of the following dissertation:

Written Corrective Feedback: Effects of Focused and Unfocused Grammar Correction  
on the Case Acquisition in L2 German

---

Chairperson Dr. Nina Vyatkina

Date approved: April 12, 2013

## ABSTRACT

Thirty-three students of fourth semester German at the University Kansas participated in the study which sought to investigate whether focused written corrective feedback (WCF) promoted the acquisition of the German case morphology over the course of a semester. Participants received teacher WCF on five two-draft essay assignments under three treatment conditions: Group (1) received focused WCF on German case errors; group (2) received unfocused WCF on a variety of German grammar errors; and group (3) did not receive WCF on specific grammar errors. Combining quantitative and qualitative analyses, the study found that the focused group improved significantly in the accuracy of case forms while the unfocused and the control group did not make any apparent progress. The results indicate that focused WCF was effective in improving case accuracy in subjects' writings in German as a foreign language (GFL) context. WCF did not negatively affect writing fluency or students' attitude toward writing.

## ACKNOWLEDGMENTS

I want to thank the faculty in the German department, Prof. Nina Vyatkina, Prof. Frank Baron, Prof. Leonie Marx, Prof. William Keel, and Prof. James Brown. I have greatly profited from their expertise in the field of German language and literature during the course of my graduate study.

I am very grateful to the German department of University of Kansas for the financial support and the Max Kade foundation for the fellowship which made it possible for me to pursue my study and research.

Many thanks to the members of my dissertation committee, Dr. William Comer, Dr. James Brown, Dr. Arianne Dwyer, and William D. Keel, who read the draft of this dissertation and provided valuable comments.

I wish to express my appreciation to Dr. Wenying Sun of Washburn University who helped me with the statistical analyses. I acknowledge Emily Hackmann for working as the second rater on the sample for inter-rater agreement. A special thank you is also extended to Pam Rooks who formatted the tables and figures in the dissertation.

My deepest gratitude goes to my advisor, Dr. Nina Vyatkina, who encouraged me to pursue this area of research. During the writing process, she guided me with expertise and unparalleled patience. Prof. Vyatkina devoted enormous amount of time working through multiple drafts of each chapter. Though I am ultimately responsible for any errors and omissions in this dissertation, I am deeply indebted to Prof. Vyatkina for her valuable feedback, her insightful comments and perspicacious suggestions. I am blessed to have a mentor like her.

## TABLE OF CONTENTS

Chapter 1. Introduction .....	1
1. 1. Introduction.....	1
1.1.1. Definition of written corrective feedback.....	1
1.1.2. Research topic of this dissertation .....	1
1.2. Theoretical rationale for the provision of teacher corrective feedback .....	2
1.2.1. Naturalistic learning environment does not apply to adult L2 learning .....	2
1.2.2. Corrective feedback helps to prevent fossilization.....	4
1.2.3. Corrective feedback helps to overcome L1 interference .....	4
1.2.4. Corrective feedback helps to prevent faulty hypotheses .....	4
1.2.5. Corrective feedback helps to proceduralize explicit knowledge .....	5
1.2.6. Corrective feedback promotes noticing.....	5
1.3. Practical rationale for teacher corrective feedback.....	10
1.3.1. Grammatical errors are stigmatizing .....	10
1.3.2. Grammar competence is a major goal for many language learners .....	11
1.3.3. Need for WCF in German as a foreign language (GFL) context .....	11
1.3.4. Provision of CF is the duty of a teacher .....	12
1.4. Summary.....	12
Chapter 2. Empirical Studies on WCF: A Literature Review.....	14
2.1. Introduction.....	14

2.2. Provision of written corrective feedback .....	14
2.2.1. Process-writing .....	14
2.2.2. Content vs. form in written feedback .....	15
2.2.3. Types of WCF .....	20
2.2.4. Scope of WCF .....	31
2.2.5. Combination of WCF with other form-focused interventions .....	35
2.2.6. The effectiveness of WCF in relation to the nature of errors .....	36
2.3. Reception of WCF .....	38
2.3.1. Learner variables in relation to WCF .....	38
2.3.2. Contextual variables in relation to WCF .....	41
2.4. Design variables of previous studies .....	41
2.4.1. The role of revision in relation to WCF .....	41
2.4.2. Longitudinal vs. short-term or one-time treatment.....	44
2.4.3. Control vs. no control .....	45
2.5. Motivation for the current study .....	45
2.5.1. The importance of investigating the effectiveness of WCF .....	45
2.5.2. Inconclusive evidence produced by the previous studies.....	46
2.5.3. Need for research in different contexts .....	49
2.5.4. Need for investigating effect of WCF on a specific grammar category.....	50
2.5.5. Targeted form for WCF in the present study.....	50

2.6. Research objective of the current study .....	51
2.7. Summary .....	53
Chapter 3. Study Design and Methods .....	64
3.1. Introduction.....	64
3.2. Participants and instructional context.....	64
3.2.1. Participants .....	64
3.2.2. Groups and treatments .....	65
3.2.3. Instructional context .....	66
3.3. Writing tasks for WCF treatments .....	67
3.3.1. General remarks about the writing tasks .....	67
3.3.2. Types of written tasks.....	68
3.3.3. Topics for the essay assignments .....	69
3.3.4. Essay grading.....	69
3.4. WCF treatments for essay assignments .....	70
3.4.1. WCF Procedure for all groups.....	70
3.4.2. WCF treatment for the focused group .....	71
3.4.3. WCF treatment for the unfocused group .....	74
3.4.4. WCF treatment for the control group .....	74
3.4.5. Summary of the WCF methods .....	75
3.5. Testing instruments.....	75

3.6. Data scoring .....	76
3.6.1. Choosing the appropriate accuracy measure .....	76
3.6.2. Obligatory occasion analysis .....	77
3.7. Data analysis methods .....	79
3.7.1. General remarks about data analysis methods.....	79
3.7.2. Quantitative analysis .....	79
3.7.3. Qualitative analysis .....	81
3.8. Summary.....	83
Chapter 4. Data Taxonomy and Coding .....	84
4.1. Introduction.....	84
4.2. Case morpheme classification .....	84
4.2.1. Purpose of case error classification .....	84
4.2.2. Principles of developing the error taxonomy .....	85
4.2.3. Error taxonomy.....	92
4.2.4. Obligatory occasions taxonomy .....	96
4.2.5. Frequency of obligatory occasions .....	96
4.2.6. Additional annotation rules .....	97
4.3. Annotation procedures.....	101
4.4. Annotation reliability .....	103
Chapter 5. Quantitative Data Analysis.....	106



5.1. Introduction.....	106
5.2. Between-group analyses .....	107
5.2.1. Group comparison for T1 .....	107
5.2.2. Group comparison for T2 .....	108
5.2.3. Group comparison for T3 .....	109
5.3. Within-group analysis.....	110
5.3.1. Within-group analysis for the focused group .....	110
5.3.2. Within-group analysis for the unfocused group .....	111
5.3.3. Within-group analysis for the control group .....	112
5.3.4. Between-group longitudinal analysis .....	113
5.4. Analysis of fluency .....	114
5.5. Summary of the quantitative results .....	116
Chapter 6. Qualitative Data Analysis.....	118
6.1. Introduction.....	118
6.2. Development of case categories .....	119
6.2.1. Between group case usage rate comparison at T3 .....	119
6.2.2. The development of the error rate for the main categories .....	120
6.2.3. Mean error rate for functional and lexical categories.....	124
6.3. Students' response to the WCF.....	126
6.3.1. Students' response to summative feedback .....	126

6.3.2. Students' response to coded metalinguistic feedback .....	131
6.4. Students' attitude analysis .....	144
6.5. Summary and discussion of the qualitative results.....	146
Chapter 7. Discussion and Conclusion .....	153
7.1. Introduction.....	153
7.2. Discussion of the results .....	153
7.2.1. The research questions .....	153
7.2.2. Focused WCF is effective .....	153
7.2.3. Unfocused WCF is not effective .....	155
7.2.4. Discussion of small effect size .....	157
7.2.5. WCF was not ignored by learners .....	160
7.3. Limitations of this study .....	160
7.4. Recommendations for future research .....	161
7.5. Pedagogical implications .....	162
7.6. Contributions of the study .....	165
REFERENCES .....	167
APPENDICES .....	204
Appendix 1. Background information questionnaire.....	204
Appendix 2. Background questionnaire data.....	205
Appendix 3. Essay first draft grading key (70 Points Possible) .....	207

Appendix 4: Essay second draft grading key (30 Points Possible) .....	208
Appendix 5: Essay first draft grading key for the control group .....	209
Appendix 6. Essay second draft grading key for the control group .....	210
Appendix 7. Essay correction code .....	211
Appendix 8. Example of paper-and-pencil WCF provided to the focused group .....	212
Appendix 9. Example of electronic WCF provided to the focused group.....	213
Appendix 10. Example of WCF provided to the unfocused group .....	214
Appendix 11. Example of WCF provided to the control group .....	215
Appendix 12. Attitude questionnaire .....	216
Appendix 13. Examples of inter-annotator mismatches.....	217
Appendix 14. IRB permission .....	219
Appendix 15. Consent form.....	220

## **Chapter 1. Introduction**

### **1. 1. Introduction**

#### **1.1.1. Definition of written corrective feedback**

Corrective feedback is one of the hot topics in the field of second language acquisition (SLA) (Brown, 2007). It is also “of perennial concern to L2 teachers” (Kepner, 1991, p. 305). Feedback in language teaching takes the form of positive reinforcement or correction (Ellis, Sheen, Murakami, & Takashima, 2008). Lightbown and Spada (1999) broadly define corrective feedback (CF), also known as negative feedback, as “any indication to the learners that their use of the target language is incorrect” (p.171). To extend this definition to the written discourse, written corrective feedback (WCF), which lies at the heart of this dissertation, refers to various ways a reader can respond to a second language writer by indicating that some usage in the writing does not conform to the norms of the target language. Written corrective feedback can be provided by any reader of a composition, such as peers or friends, but is generally provided by instructors in most language classrooms. In a foreign language context, “teacher response and evaluation are typically the principal means by which L2 learners measure their progress as writers” (Hedgcock & Lefkowitz, 1996, p. 1).

#### **1.1.2. Research topic of this dissertation**

The topic of the present study is written corrective feedback provided by instructors on the development of writing accuracy in German as a foreign language (GFL) context. All instructors know that correcting students’ written work is one of the most time-consuming and tedious tasks for a language teacher. However, the efficacy of providing corrective feedback has been questioned by many researchers and educators (Cohen & Robbins, 1976; Hammond, 1988;

Krashen, 1985, 1992, 1993; Schwartz, 1993; Truscott, 1996, 2007) from both theoretical and practical standpoints. In contrast, many researchers and educators (e.g. Ellis, 1998; Ferris, 1996, 2004; Fotos, 1993; Gass, 1997; Lalande, 1982; Long, 1996, 2007; Schmidt, 1990, 1995, 2001; Swain, 1985) have defended and expounded the benefits of providing WCF, also quite convincingly, from theoretical and practical perspectives.

The scope of the present study is limited to WCF on the grammatical aspects of the language learning since this issue has been in the center of considerable debate in recent decades in the SLA field. As will be discussed in more detail in the second chapter of this dissertation, many studies have produced conflicting findings and no definite conclusions have been reached in regard to the efficacy of teacher WCF. The present study is one contribution toward exploring the question of WCF and its important pedagogical implications. Specifically, the purpose of this dissertation is to investigate three grammar feedback methods, namely focused WCF versus unfocused WCF versus no WCF in terms of their effectiveness in the acquisition of German case morphology.

## **1.2. Theoretical rationale for the provision of teacher corrective feedback**

In very general terms, corrective feedback on grammar errors can enhance learners' accuracy and expedite learners' grammar acquisition (Ellis, 1996; DeKeyser, 1997; Long, 1991b, 1997; Norris & Ortega, 2000). There are also special arguments presented as to why CF is necessary. These arguments are outlined below.

### **1.2.1. Naturalistic learning environment does not apply to adult L2 learning**

Some researchers (e.g. Brown & Hanlon, 1970; Carroll, 2001; McNeill, 1970; Butler Platt & MacWhinney, 1983) claim that error correction is not a necessary condition for children learning their first language (L1). Some researchers (e.g. Krashen, 1982, 1985; Newmark &

Reibel, 1968) also contend that there is no qualitative difference between children acquiring their L1 and adults learning a second language (L2). Consequently, they posit that L2 learning should simulate the L1 learning environment. Krashen and Terrell (1983), for example, advocate *the natural approach*, according to which corrective feedback plays only a negligible role in learners' language acquisition.

However, one rationale for the provision of teacher CF is based on the arguments that the environment for L1 learning differs from adult L2 learning on at least two points: first, the cognitive ability, and second, the learning context. Children do not respond well to CF as their ability to understand rules and explanations is more limited (Carroll, 2001; DeKeyser, 2007; Krashen & Seliger, 1975). Cognitive psychologist Ausubel (1964) notes that, unlike children, adult L2 learners can profit from grammatical explanations. As Carroll (2001) reasons, “[a]dults, in contrast, have mature metalinguistic capacities enabling them to represent units of language as conceptual categories. They therefore can, in principle, and apparently do, use feedback to learn the properties of the target system” (p. 244).

Some researchers (e.g. Ellis, 1996; Klein & Perdue, 1982; Swain, 1985) have pointed out that learners can acquire considerable grammatical competence without correction. However, as Fotos (2002) remarks, this approach is predicated upon learner access to abundant communicative input containing the target forms. These requirements are hard to satisfy, particularly in a situation like learning German in the United States where class time and access to communicative input outside of classroom is extremely limited. As DeKeyser (1993) remarked: “Students in the classroom, even after years of study, have typically received minimal input compared to first language learners, which may make error correction necessary to avoid

fossilization” (p. 502). Lacking large amount of input and output, adults L2 learner rely more on explicit knowledge and CF to monitor and improve their accuracy in production.

### **1.2.2. Corrective feedback helps to prevent fossilization**

Another argument for corrective feedback is based on the belief that CF is essential to prevent fossilization of bad habits. *Fossilization or stabilization* was defined by Brown (2007) as “the relatively permanent incorporation of incorrect linguistic forms into a person’s second language competence” (p. 382). This belief is rooted in the behaviorist learning theory (Skinner, 1957). The strong stance for error correction is reflected in Brooks’ (1960) comment: “Like sin, error is to be avoided and its influence overcome, but its presence is to be expected” (p.56).

### **1.2.3. Corrective feedback helps to overcome L1 interference**

Associated with the notion of fossilization is the concept of parameter setting, defined as the variations in different languages in terms of the abstract properties of a language which “inform us that a sentence is possible or not” (VanPatten, 2003, p. 49). “Rules that are shared by all languages comprise” the universal grammar (UG) (Brown 2007, p. 255). Corrective feedback informs the learners about what is not allowed in a language. Moreover, some L2 structures are unlikely to be acquirable from positive evidence alone (Trahey & White, 1993; White, 1987, 1991), especially if they do not exist in the L1 grammar. Therefore, corrective feedback as a type of pedagogical intervention may trigger the parameter restructuring process and help the learner to overcome the interference from L1.

### **1.2.4. Corrective feedback helps to prevent faulty hypotheses**

Many researchers agree that learning language is a gradual process in which learners make hypotheses and generalizations about the rules derived from their exposure to input data. These generalizations sometimes involve overgeneralizations, which need to be revised in the

light of new evidence or negative evidence (Huebner, 1983b). Thus, some researchers (e.g., Burt & Kiparsky, 1972; Corder, 1967; Gass & Selinker, 1994) point out that corrective feedback can draw learners' attention to the "incorrectness" of the hypothesis learners made about the rules of the target language, and may prompt learners to modify their output which may result in learners revising their hypothesis.

### **1.2.5. Corrective feedback helps to proceduralize explicit knowledge**

Skill acquisition theory also sees a facilitative role for CF in assisting learners to proceduralize their declarative knowledge of the L2. According to DeKeyser (1998, 2003, 2007), learners need to be given grammar explanations because they must process this knowledge consciously. However, this explicit knowledge does not automatically translate into internalized knowledge in long-term memory which was referred to by Corder (1967) and Chaudron (1985) as *intake*. “Students require practice and instructor feed-back to improve writing skills“, as High, Hoyer, and Wakefield (2002) put simply (p.154). Carroll (1966) states that “[t]he more numerous kinds of associations that are made to an item, the better are learning and retention” (p. 105). In a similar vein, 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.

### **1.2.6. Corrective feedback promotes noticing**

The first prerequisite for language learning is exposure to language sources that constitute positive evidence called *input* (Gass, 1997). Many researchers argue that negative evidence as provided through corrective feedback is also required to learn the L2 because the positive evidence alone is less effective in fostering L2 acquisition than a combination of the two (Bley-



Vroman, 1990; Ellis et al., 2008; Izumi & Lakshmanan, 1998; Major, 1988; Schachter, 1988; Trahey & White, 1993; Vigil & Oller, 1976). Their arguments for the need of the provision of CF to promote noticing are advanced from different perspectives which are outlined in the following sections.

#### **1.2.6.1. CF is necessary to overcome the “focus on meaning” phenomenon**

In processing input for the purpose of communication, language learners have the predisposition to give priority to meaning over form because they have difficulty attending to both form and meaning at the same time (VanPatten, 1990). Thus, input processing is, to a large extent, *semantic processing* which is defined by psychologist Broadbent (1958) as processing of the information to decode the meaning. VanPatten (2007) terms this phenomenon of attention to meaning the *supremacy of meaning* or *the lexical preference principle*.

This focus on meaning phenomenon is arguably more pronounced for written input because written input is usually more complex than oral input. As Comer (2012a) has pointed out, many researchers (Bernhard 1991; Birch, 2007; Grabe, 2009; Koda, 2005) “note that reading in a foreign language is a complex cognitive activity involving many factors, which are both text-based (vocabulary, morphology, syntax, discourse structure, etc.) and reader-based (background knowledge, L1 literacy skills, L2 language knowledge, reading strategies, etc.)” (p. 232). Thus, it is not surprising that the tendency to “content extraction leaves all but the very strongest readers with few resources to attend to the language forms in the text” (Comer, 2012a, p. 248). Language learners often rely on word order to infer meaning, that is, they tend to assign the grammatical role of subject or semantic role of agent to the first noun or pronoun in a sentence. This phenomenon is known as *the first noun strategy* or *SVO processing* and it has been observed for both L1 learning (Pinker, 1981; Slobin, 1973) and L2 learning (Lee, 1987;

LoCoco, 1987). Beside word order, learners also interpret input according to noun animacy and event probabilities, which refer to “our expectation of what normally happens in real life” (VanPatten, 2003, p. 38). For instance, for the German sentence *Den Mann beißt der Hund* (‘The dog bites the man’), even if a learner does not attend to the article *den* denoting the accusative object, and even though the object *Mann* is the first noun, the learner can still guess the meaning of the sentence based on what’s likely to happen in the real life. Jackson (2008) found that beginner and intermediate learners of German in her study were insensitive to morphological markings when parsing written input because these markings were perceptually non-salient. Jiang (2004) found that even advanced ESL learners of English with Chinese as native language are not sensitive to the number morpheme in comprehension-based reading tasks.

There is another reason for the lack of attention to the grammar forms by learners. According to Skehan (1996a, 1998b, 2002), when learners try to quickly respond to the input in order to carry out a conversation, they possibly rely heavily on memorized chunks, since they afford the quickest access. Several researchers (e.g. Carroll, 2001; Hammerly, 1971; Nassaji & Fotos, 2004) have pointed out that learners cannot engage in communication tasks fluently and accurately if they do not have a large arsenal of required memorized chunks. Many teachers observed that communication activities in their language classrooms are marked by low levels of linguistic accuracy (Higgs & Clifford, 1982; Rankin & Becker, 2006). To improve the development of target language accuracy, many researchers have called for the integration of focus-on-form instruction (Doughty & Williams, 1998; Ellis, 2001; Lightbown & Spada, 1990; Long & Robinson, 1998; Spada, 1997) into content-based or communicatively-oriented classrooms. According to Long (2000), *focus on form* refers to “briefly drawing students’ attention to linguistic elements (words, collocations, grammatical structures, pragmatic patterns,

etc.) *in context*, as they arise incidentally in lessons whose overriding focus is on meaning, or communication" (emphasis in original; p. 185). To emphasize the overarching goal of communication in these "focus on form" instances in contrast to decontextualized grammar instruction, Long (1991) termed the latter *focus on formS* which refers to explicit, separate grammar instruction on language forms. Corrective feedback is one method of form-focused instruction or grammar instruction which entails "any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly" (Spada, 1997, p. 73).

#### **1.2.6.2. The role of corrective feedback in the noticing hypothesis**

Carroll (1966) points to the importance of noticing as a necessary element in virtually all disciplines: "In learning a skill, it is often the case that conscious attention to its critical features and understanding of them will facilitate learning" (p. 105).

Proponents of the *noticing theory* (Bialystok, 1979; Rutherford, 1988; Rutherford & Sharwood Smith, 1985; Schmidt 1990, 1995, 2001; Sharwood Smith, 1991, 1993) argue that because much of the L2 input data contain semantic redundancy and often lack salience, the grammar forms contained in the input can only be converted into intake beyond the memorized chunks, if a learner has explicit knowledge of the grammar forms and consciously attends to them. Corrective feedback is one way to bring about such noticing and attention to form (Schmidt, 1995; Tomlin & Villa, 1994).

#### **1.2.6.3. The role of corrective feedback in the output hypothesis**

From the output hypothesis perspective, language production activities provide an ideal platform for corrective feedback and noticing. This position was formulated by Swain (1985, 1993) based on her observation that the students in Canadian French immersion classrooms

continue to produce a wide range of basic grammatical errors in their speech and writing even after 9 or more years of learning French.

Swain (1985) suggests that these learners failed to achieve high-level grammatical competence due to the relatively few opportunities students had to produce the target language and due to the unavailability of negative evidence to them. Swain (1985, 1995) has noted repeatedly that, for grammatical accuracy to develop, learners need to attend to form-meaning relationships and receive feedback on their output because it enables learners to “notice the gap” between what they want to say and what they can actually say. If learners’ attention is not drawn to their errors, they may not be aware that they made an error; they will probably never ask about it, and therefore they miss opportunities to practice and correct themselves. As a result, the proverbial ‘learning from mistakes’ is less likely to take place (Carroll & Swain, 1993; Kowal & Swain, 1994; Swain, 2000; Swain & Lapkin, 1998)

#### **1.2.6.4. The role of corrective feedback in the interaction hypothesis**

The importance of corrective feedback is also a central element in the interaction hypothesis perspective elaborated by Long (1983, 1991, 1996) and others (Gass & Mackey, 2007). In the context of interactions, learners receive feedback through interactional responses such as clarification requests, confirmation of message understood, and comprehension checks which are referred to as *negotiation of meaning* (Lyster, 1998).

Interaction alone without corrective feedback may not be sufficient to impact the acquisition of certain linguistic forms as the study by McDonough (2005) shows. Corrective feedback can prompt learners to focus on form and adjust their output to solve problems in understanding the input and output processing (Gass, 1997, 2003; Long, 1980, 1985; Pica, 1994). When learners recognize that their previous utterance is deficient, “they either generate a new

message or reprocess their original message” (McDonough, 2005, p. 82). Modifying output in response to corrective feedback is also known as *uptake* which was defined by Lyster and Ranta (1997) as “a student’s utterance that immediately follows the teacher’s feedback and that constitutes a reaction in some way to the teacher’s intention to draw attention to some aspect of the student’s initial utterance” (p.49). Uptake may contribute to L2 development by triggering additional grammatical encoding (Izumi, 2003), by strengthening knowledge representations that learners already have stored (Nobuyoshi & Ellis, 1993), and by encouraging automatic retrieval of linguistic forms (de Bot, 1996). These modifications may, in turn, lead to subsequent stabilization or language change (Gass & Varonis, 1985). Even direct CF techniques such as recast, which may not lead to modified output, can contribute to learning because repetition can enhance the salience of those forms.

### **1.3. Practical rationale for teacher corrective feedback**

#### **1.3.1. Grammatical errors are stigmatizing**

Even though SLA theory in general focuses on the spoken language, the same principle in terms of the effect for corrective feedback might also apply to written discourse. Grammar errors could garble the message a writer attempts to convey. In oral conversations, many language teachers tend to not correct every error which does not interfere with meaning because they don’t want to interrupt the flow of communication (Lightbown & Spada, 1990). However, formal errors in writing are much less tolerated. Even in instances where the meaning is clear from the context, error-ridden writing is very stigmatizing and distracts readers from the intended message (Johnson & Roen, 1989). As Polio (1997) points out, “even though other factors are related to good writing, linguistic accuracy is usually a concern in writing assessment” (p. 103). McGirt (1984) has reported that, in assessment of the writing of ESL students, judges are put off

by minor but frequent errors in surface grammar. This negative emotional reaction prevents the judges from properly evaluating the writers' ideas and organization. Therefore, learners need to attend to grammar in their writing, and teachers should provide WCF on learners' grammar (Celce-Murcia, 1991, 1992; Hammerly, 1991; Horowitz, 1986; James, 1998; Johns, 1995).

### **1.3.2. Grammar competence is a major goal for many language learners**

Learning purpose should also be an important consideration in addressing the issue of the importance of accuracy and CF. A course in English for Academic Purposes is obviously different than writing in an intermediate German class. The main purpose of writing in a foreign language curriculum is often to enhance classroom instruction where focus on form could be given priorities (Ellis, 2001). Most students of German like the participants in the present study still struggle with the basic application of grammar rules of German, which defines the pedagogical focus for WCF.

### **1.3.3. Need for WCF in German as a foreign language (GFL) context**

L2 writing pedagogy has been heavily influenced by writing in English as a first language, English as a second language (ESL), or English as a foreign language (EFL), particularly writing for academic purposes, all of which have relegated grammar accuracy and corrective feedback to a minor role (Hinkel, 2001). As Frodesen (2001) states, "the wholesale adoption of L1 composition theories and practices for L2 writing classes seems misguided in light of the many differences between first and second language writers, processes, and products" (p. 234). The survey by Silva (1993) found that many studies confirmed that L2 composing was clearly more difficult and less accurate than L1 composing. Accuracy is a serious problem for most L2 writers (Granger, 2003). In GFL contexts, lack of grammatical competence is a formidable

obstacle for writing in German. Accordingly, research for finding out ways to help learners of German with their grammatical competence is particularly valuable.

#### **1.3.4. Provision of CF is the duty of a teacher**

Corder (1981) has underscored the provision of teacher corrective feedback as the essential duty of any teacher. This responsibility is especially prominent in foreign language contexts, where the teacher is often the only source of the expert feedback students expect to receive.

#### **1.4. Summary**

As reviewed in this chapter, the use of CF finds support from several perspectives in SLA theory. In consideration of the special characteristics of adult L2 learners, many researchers have advanced arguments for the beneficial role of the provision of corrective feedback as consciousness-raising interventions which help learners overcome L1 interference, prevent faulty hypotheses, and overgeneralizations. CF may make errors in learner production become salient. Modifications brought about by CF also increase the opportunities for further practice and help proceduralize knowledge and prevent fossilization. In sum, there are many cognitive factors that speak for the pedagogical use of corrective feedback. Provision of corrective feedback is also justified by learners' goals, language-specific considerations, and the negative impact of errors on writing.

The benefits of CF have been confirmed by many studies on oral CF (see Li, 2010; Lyster & Saito, 2010; Norris & Ortega, 2000; Russell & Spada, 2006). In the next chapter, empirical studies that examined the effectiveness of the written CF will be reviewed and discussed.

The body of the dissertation is divided into seven chapters. In this first chapter, in addition to introducing the topic and scope of the present study, some theoretical and practical rationales for providing teacher CF were presented. The second chapter follows with presentation of findings of empirical studies relating to WCF. Different WCF provision methods and design issues of the relevant studies are discussed. Based on a critical summary of the relevant findings produced by empirical work to date, gaps in the research field are identified and research questions for the present study are formulated. Subsequently, the third chapter describes the design and methods for data collection and analysis for the present study. Chapter 4 describes the data taxonomy developed for the present study and coding procedures. The results of the quantitative analysis are presented in chapter 5, whereas the qualitative analysis of student revision behavior in response to written corrective feedback and students' attitudes are detailed in chapter 6. Finally, the seventh chapter discusses the major findings and the pedagogical implications of the findings. The limitations of the study and recommendations for future research, and the contribution of this study to the literature are also noted, thus concluding the dissertation.



## **Chapter 2. Empirical Studies on WCF: A Literature Review**

### **2.1. Introduction**

This chapter reviews the SLA research literature that addresses the general usefulness of correcting students' written errors and the relative merits of various types of WCF. The chapter consists of five sections: Section 2.1 gives an overview of the chapter. Section 2.2 reviews the studies relating to the provision of WCF including types and scope of WCF. Section 2.3 reviews studies relating to the reception of WCF and is followed in Section 2.4 by a discussion of the design issues in these studies. Section 2.5 identifies gaps from previous findings that serve as the impetus for the current study's research questions and design. Section 2.6 formulates the research questions and objectives derived from the literature for the current study.

### **2.2. Provision of written corrective feedback**

#### **2.2.1. Process-writing**

Since 1980s, the trend in the field of SL writing pedagogy has been away from viewing writing as only a finished product towards thinking about writing as a process (Cambourne, 1986; Flower & Hayes, 1981; Yoshida, 1983). A key concept for the process writing approach is that writing is "writing to learn" (Britton, 1970; Emig, 1971, 1977). Ferris (2008) points out that the most obvious reason for teacher WCF is to justify the grade that teachers give for the students' written assignments. But in the process-oriented approach to writing instruction, teachers hope their feedback can help students improve their subsequent drafts and future writing (Ferris, 2008; Hyland, 2003; Vyatkina, 2011).

In regard to the design of the process writing approach, some researchers propose multi-drafting writing cycle and applying different feedback strategies at different stages of the cycle. In earlier studies, several researchers (e.g. Sommers, 1982; Young, 1978; Zamel, 1985)

recommended that teachers respond to content first and to form only in a later draft, thus allowing writers to pursue the development of their ideas without being sidetracked by linguistic difficulties. However, Fathman and Whalley (1990) found that, on the rewriting of the compositions by 72 ESL college students, giving content and form feedback simultaneously was just as effective as giving content feedback or form feedback separately. This result was corroborated by Ashwell's (2000) study which found no significant difference in accuracy or content scores on a third draft written by fifty EFL learners at a Japanese university following three different patterns of teacher feedback on the first two drafts: (a) giving feedback on content first and feedback on form in a later draft, (b) the reverse pattern, or (c) one in which form and content feedback were mixed. All of these patterns, however, were superior to giving no feedback. Ashwell's (2000) study also suggests that multiple drafting may be reduced to a two-stage task (drafting and revision/editing). Since most foreign language classes cover several textbook chapters and writing tasks often correspond to the different topics in these chapters, a two-stage writing cycle appears to be more practical and manageable.

### **2.2.2. Content vs. form in written feedback**

Fathman and Whalley (1990) and Ashwell (2000), reviewed above, examined not only the sequence of written feedback but also, along with other studies (e.g. Fazio, 2001; Kepner, 1991; Sakai, 1998; Semke, 1980; Sheppard, 1992; Zamel 1985), compared the effects of form-focused feedback and content-based feedback in isolation or in combination. These studies yielded disparate results in regard to the efficacy of feedback for improving students' grammatical accuracy.

The subjects in Fazio's (2001) study were 112 students ages 10-13 in French-language schools in Canada, where native speakers of French and French as L2 learners are educated in

the same classrooms. Fazio compared the effect of three feedback conditions, namely reformulation, commentaries to content, and a combination of the two. Students received weekly feedback to writing journals over a period of four months. Results indicate that French as L2 students in all groups *increased the error rate* in grammatical spelling (noun/adjective agreement and subject/verb agreement in French) over the course. Among the native speakers of French, the reformulation group maintained its error rate, while the other two groups experienced an *increase in the error rate*. Overall, there was no significant difference in accuracy between the groups. This seeming ineffectiveness of WCF was partly explained by the fact that as students learn more complex structures, they have more chances to make mistakes.

In a study by Kepner (1991), 60 college students of Spanish at the intermediate level were assigned to two feedback groups: One group received direct correction of grammar and vocabulary errors plus rule reminders; the other group received message-related comments. The treatment lasted twelve weeks and included five journal writing assignments. Kepner compared the two treatment groups' performance on the sixth journal assignment and found that students who received form-focused feedback produced fewer errors than students who received message-related comments feedback in the sixth journal assignment. However, the difference was not statistically significant.

Sheppard (1992) compared the effects of meaning-related comments in the margins and coded WCF on seven compositions written by 50 ESL students at the upper-intermediate level. Students in the form-focused groups, after receiving WCF on verb forms, attended a meeting with the teacher about these errors and were asked to make a corrected copy. The message-related group received general requests for clarification of contents. These comments were discussed in the teacher-student conferences. At the end of a 10 week period, both groups made

significant progress in verb accuracy (person, tense, aspect and context) and there was no difference between the two groups in the use of the verb forms. But the form-focused group experienced a decline in complexity as measured by the use of subordination, probably due to avoidance. However, Sheppard acknowledged that the difference in complexity could have been influenced by a low frequency of the focal structures. Another limitation of the study lies in the fact that clarification requests in the message group may have included comments on verb usage.

In a study with an instructional context similar to the current study, Semke (1980) examined the role of written feedback with 141 third quadmester students of German at the University of Minnesota. Students were assigned to four treatment conditions on the weekly free-writing assignments: (1) content-related feedback; (2) comprehensive error correction; (3) a combination of positive comments and direct correction; and (4) coded WCF. Students in all groups had to revise their writing. At the end of the 10-week quadmester, there was no difference between the groups in terms of accuracy on a free-writing test. But the comments only group performed better on a cloze test and on writing fluency and had a more positive attitude toward writing journals than other groups. Semke concludes that content-related feedback was more beneficial for student writing than form-related feedback.

However, the grading policy practiced in the study might have influenced the results because for the comment group, grades were based solely on the amount of understandable German produced, thus encouraging more fluency. In addition, as Semke (1984) acknowledged herself, the lack of effect of WCF on accuracy “may not be due entirely to the different treatment methods per se, but also to the difference in the quantity of writing practice” (p. 201). During the semester, a total of nine compositions were written. But because of the time it took to make

revisions, the group that self-corrected generated only slightly more than half as much new material as the other groups.

In contrast to the negative findings reported by the above studies, other studies (e.g. Ashwell, 2000; Fathman & Whalley, 1990; Fazio, 2001; Ferris, 1997; Frantzen, 1995) report a positive effect for WCF in comparison to feedback on content.

Fathman and Whalley (1990) examined the editing behavior of ESL college students after one time feedback under four different conditions: (1) the control group received no feedback other than the grade awarded; (2) WCF consisting of underlining all grammatical errors; (3) content feedback with short comments; (4) feedback on both grammar and content. Their findings indicate that only the grammar feedback group and the grammar plus content feedback group made progress in grammatical accuracy at a statistically significant level. In addition, 44% of the students improved the content of their revisions even when teachers provided no feedback concerning the content of the original essay. By comparison, WCF on grammar errors had a greater effect on grammar revisions than general content comments had on revisions of content. The group that received feedback on content only, while making some progress in content, showed little or no improvement in grammar, with 35% of the students getting worse.

Similarly, several studies reported that students rely more on form feedback. In her study of 47 advanced ESL students, Ferris (1997) found that form-based feedback led to more revisions than content-related comments. Ashwell (2000) also found that content feedback had no effect on content scores of writings by her EFL students in Japan. Echoing this finding, students of Japanese at a US university in Nakazawa's (2006) study also expressed "a stronger concern regarding linguistic aspects of writing rather than content" (p. 313). Zamel's (1985) examination of the revised student texts revealed that the majority of revisions were on the basis

of local corrections, even when the teachers combined error corrections with positive comments regarding content or organization.

This finding of the reliance on form feedback by L2 writers might be attributed to the difference between L1 and L2 writing. Compared with L1 writers, adult L2 writers have to overcome more linguistic limitations: “Often students feel frustrated because their cognitive abilities far outstrip their linguistic capability in the target language” (Lalande, 1982, p. 144). L2 writers often know what they want to say but do not know how to say it. Even learners with strong literacy backgrounds in their L1 may not be able to apply that knowledge successfully to their L2 writing (Leki, 1995).

For L1 writing, Brannon and Knoblauch (1982) believe that teachers should respect students’ ideas and opinions. Many teachers would agree with this position. As a consequence, only components of writing such as clarity of thoughts and logical argumentation would merit commentary in terms of content. However, these aspects of writing relate less to the language ability than the reasoning ability. If a learner lacks ideas as to what to write in his or her native language, it is highly unlikely that he or she would come up with ideas in a foreign language.

Several researchers (Ferris & Hedgcock, 2005; Hyland 2003; Pennington, 2001) voiced the opinion that attention to grammar should not be placed in a dichotomous relationship with communication of the content, “[f]or grammar is nothing more or less than the organizing principles of a linguistic or (broader) communicational system” (Pennington, 2001, p. 78). Comer’s (2012b, p. 152) comment that “[g]rammatical form contributes to meaning, sometimes being the only element to clarify meaning” certainly also applies to the function of German case morphology. Ashwell (2000) points out that for many process writing advocates, “[g]rammar

correction is seen as one way of helping writers to improve the accuracy of a piece of writing and in turn, therefore, to improve its communicative effectiveness” (p. 229).

In addition to the above arguments, content scoring based on holistic rating can be highly subjective (Schwartz, 1984). Thus, it is difficult to achieve high inter-rater reliability in content scoring, whereas form scoring is easier to quantify. The other two major scoring methods *analytical scoring* and *primary trait scoring* are too time-consuming (Perkins, 1983). Maybe for these reasons, providing form-focused feedback has been the standard practice of L2 writing instruction. In a study which surveyed the feedback practices of 110 EFL teachers from five countries, Furneaux et al. (2007) found that teachers overwhelmingly focused on grammar in their feedback. Several other studies (e.g., Applebee, 1981; Chapin & Terdal, 1990; Cohen, 1987; Sommers, 1982; Zamel, 1985) also indicate that teachers focus their feedback on local issues (such as grammar and mechanics) more than on global issues (such as ideas, content, and organization).

### **2.2.3. Types of WCF**

The ensuing sections review a number of studies that deal with different types of WCF. The terms for various WCF methods have not always been used consistently in the literature, but they can be broadly classified as *direct* and *indirect* (Bitchener, 2008).

#### **2.2.3.1. Direct WCF**

In the direct method, WCF involves supplying learners with the target language form at or near the error: “It may include the crossing out of an unnecessary word/phrase/morpheme, the insertion of a missing word/phrase/morpheme, or the provision of the correct form or structure” (Bitchener, 2008, p. 105). Reformulation of the whole sentence written by L2 learners with errors corrected to conform to the target language norms but preserving the original meaning is

referred to as *written recast* (Ayoun, 2001). Bitchener (2008) also included metalinguistic explanation of grammar rules and examples in the category of direct WCF.

#### **2.2.3.1.1. Studies showing the effectiveness of direct WCF**

Direct WCF has been documented to contribute to L2 learning in a number of studies (e.g., Ayoun, 2001; Bitchener, 2008; Bitchener & Knoch, 2008; Chandler, 2003). Leki (1991) found that her students preferred direct WCF. Storch and Wigglesworth (2010) noted that if the errors were superficial, proficient learners “clearly noticed the reformulations and were able to address their errors in their subsequent writing” (p. 319).

#### **2.2.3.1.2. Studies showing no effect of direct WCF**

These positive results for direct WCF notwithstanding, in general, direct WCF such as reformulations rarely elicited modification by the learners if no revision was required of the writers (Allwright, 1975; Long, 1977). After providing WCF on six drafts, Hendrickson (1976) found that direct correction had no significant effect on the writing accuracy of his 24 intermediate ESL students.

#### **2.2.3.1.3. Studies comparing different types of direct WCF**

A study by Santos, López-Serrano, and Manchón (2010) examined the noticing behavior of eight secondary-school EFL learners at the intermediate level in Spain following two types of direct WCF (reformulation and error correction). In the reformulation (RF) method, errors were not underlined; the sentence was simply rewritten by the teacher. In the error correction (EC) method, the teacher highlighted the errors by underlining and provided correct forms above the errors. With regard to uptake which was operationally defined as the type and amount of accurate revisions incorporated in the participants’ revised versions of their original texts, the authors found clear advantage for error correction over reformulation. The authors explained



that the reason for the better uptake for direct correction was because “reformulations led to many more changes to the students’ original texts than in the error correction condition (52 RFs versus 29 ECs), which in effect meant that, even though students noticed all the errors in both conditions, the number of REFs they had to remember was much higher than that of ECs” (p. 149).

#### **2.2.3.2. Indirect WCF**

With indirect feedback, an error is called to the student’s attention using various strategies such as underlining or circling errors, recording in the margin the number of errors in a given line, confirmation checks, and requests for clarification (Bitchener, 2008).

An alternative for the above-mentioned indirect WCF method is metalinguistic feedback that identifies the nature of an error. This method of WCF combines elements of both direct and indirect CF with the purpose of saving students’ time and frustration while still pushing them to take initiative to reflect and to draw on their own resources, which might lead to student-generated repair. One common method of providing metalinguistic feedback is through the use of editing codes or editing symbols. Another type of metalinguistic WCF is to provide student writers with a set of criteria in the form of a help sheet (e.g., the so-called error awareness sheet in Lalande, 1980).

A common feature for indirect WCF methods is that they all withhold correct forms in hope of eliciting the correct form from the student (Carroll & Swain, 1993). In Bitchener and Knoch’s (2010) study, one group received WCF in the form of written metalinguistic explanation along with an example of the targeted grammar feature. They described this as a form of direct WCF. However, since direct error corrections were not provided, the author of this dissertation

would classify it as indirect WCF because students could not simply copy the correction, rather they still had to infer from the examples and explanations.

#### **2.2.3.2.1 Studies showing the effectiveness of indirect WCF**

Lizotte (2001) studied the effect of coded WCF with Hispanic bilingual and ESL students in a U.S. community college. He reported that both groups of students reduced errors in their writing significantly over one semester.

#### **2.2.3.2.2. Studies comparing types of indirect WCF**

##### **2.2.3.2.2.1. Underlining is superior to marginal feedback**

Comparing two indirect WCF conditions with EFL students in Hongkong, Lee (1997) reported that underlining errors was more effective than both marginal feedback and no feedback for enhancing students' ability to detect and correct errors implanted in a newspaper article. However, Lee acknowledged that WCF might be more complex in real life and suggested for future research to explore WCF effects on students' own writing.

##### **2.2.3.2.2.2. Underlining is just as effective as coded WCF**

Some studies have found that underlining was just as effective as coded WCF. For the 72 ESL college students, Ferris and Roberts (2001) found that coded WCF and underlining were almost equally effective in reducing errors in five categories from the first draft to the next draft. Both groups that received WCF significantly outperformed the no-feedback group on the self-editing task. This result suggests that a simpler way of providing corrective feedback through underlining alone was sufficient to achieve a significant impact on ESL learners.

Chandler (2003) and Nakazawa (2006) reported that their students preferred the coded WCF, even though their studies did not find any significant difference of effect between the coded or uncoded WCF.

### **2.2.3.2.2.3. Metalinguistic WCF is superior to circling or underlining only**

Other studies reported advantage of metalinguistic WCF over other forms of indirect WCF. In Bitchener & Knoch's (2010) study, there were three treatment groups of advanced ESL learners who received only one-time treatment on the two targeted functional uses of the English article system: (1) written metalinguistic explanation with examples but no direct correction; (2) circling of errors; and (3) written metalinguistic WCF plus a 15 minute oral review and discussion for the full class. The study found that all three treatment groups outperformed the control group in the immediate post-test. However, those who received written metalinguistic explanation and those who received both written metalinguistic explanation plus an oral form-focused review were able to retain their accuracy gains 10 weeks later, whereas those whose errors were indicated by circling only were not able to retain the gains observed in the immediate post-test. The authors concluded that the result demonstrated the superior longitudinal effect of metalinguistic explanation.

Greenslade and Félix-Brasdefer (2006) conducted a study to investigate the effects of two types of indirect WCF (coded vs. underlining) on learners' ability to self-edit on a two-draft composition. After the first in-class composition session, the researchers underlined syntactic, lexical, and mechanical errors. For the second in-class composition, researchers underlined the errors and then coded them with explanations for the correction. After receiving the WCF, participants were allotted 20 minutes to edit their compositions. The researchers found that although both types of WCF conditions helped the 21 students of Spanish as a foreign language to write considerably more accurate, the coded feedback condition exhibited more effectiveness in enabling learners to self-correct.

Building on the study of Greenslade and Félix-Brasdefer (2006), a recent study by Muñoz (2011) also compared coded WCF with underlining but the participants in this study were 62 students of Spanish who were enrolled in the seventh and eighth semester Spanish courses at a U.S. university. They focused on Spanish preterit and imperfect verb forms. There were six 50-minute-long in-class compositions throughout the semester. After receiving WCF, the subjects spent 30 minutes in class revising the compositions. The control group received feedback in form of praise and suggestions. The results indicated that the coded condition group not only clearly performed more accurate corrections than their counterparts; they also made significant gain in the long run. Even though the students in the underlining only condition achieved a slight gain in accuracy, they did not outperform the no-feedback group in the acquisition of the targeted verb forms. This study shows the benefit of WCF versus no feedback and also contradicts the finding by Ferris and Roberts (2001) that underlining alone could be sufficient. The author of this dissertation believes that the differences between English and Spanish might be responsible for the different results. As Muñoz remarked, without indication of type, “the student does not clearly know whether an error underlined appears this way as a result of a missed accent, wrong tense, spelling, and so forth” (p. 85).

### **2.2.3.3. Direct vs. indirect WCF**

Several studies have examined the relative merits of direct and indirect WCF and reported mixed findings.

### **2.2.3.3.1. Studies showing no difference between direct and indirect WCF**

Some studies (Mantello, 1997; Nakazawa, 2006; Robb, Ross, & Shortreed, 1986; Vyatkina, 2010) found no significant difference of effect between the indirect and direct correction.

Mantello (1997) compared the effects of coded WCF and reformulation for Canadian 8th graders who learned French in an immersion environment. Both groups improved their accuracy in the targeted grammar structure (the narrative past tense) over four months, and neither group outperformed the other on the two post-tests.

Nakazawa's (2006) study involved 58 third semester students of Japanese in US, who received WCF on five essays under four conditions: (1) direct WCF, (2) coded WCF, (3) lists of revising criteria, and (4) control. For group (3), the teacher did not provide any correction but a list of revising criteria on frequently occurring errors similar to the Error Awareness Sheet in Lalande's (1980) study. All students were required to revise their writing including the control group which was instructed to correct their errors as much as they could. The study found that direct WCF was most effective to improve students' writing accuracy in the short-term period but at the end of the 15-week semester, there was no significant difference between the four groups in accuracy and fluency on the 5<sup>th</sup> compositions.

Robb, Ross, & Shortreed (1986) investigated the relative merits of indirect and direct feedback with 134 Japanese EFL college freshmen in English writing classes, who wrote weekly essays in addition to five test compositions at equal intervals during the 9-month academic year. Students were divided in four groups: (1) direct correction covering lexical, syntactic, and stylistic errors; (2) coded WCF; (3) color-marking without the indication of the nature of the errors; (4) marginal feedback (the number of errors per line was totaled and written in the

margins of the student's paper). All groups needed to revise their original compositions. On the measure of accuracy, the authors found that “practice in writing over time resulted in gradual increases in the mean scores of all four groups when compared with the initial pretest scores, regardless of the method of feedback they received” (p. 89). The authors conclude that “less time-consuming methods of directing student attention to surface error may suffice” (p. 91). However, the nature of the writing class might explain why no group outperformed other groups: 40% of the 1 hour and half weekly class time was spent on editing grammatical errors produced by freshmen writers on the same topic in the previous year, and 40% of the time was spent on sentence-combining exercises that by nature are grammar-focused. In other words, all groups spent a lot of time reviewing and editing their errors. In addition, the authors found that error correction did not constrain fluency.

A recent study by Van Beuningen, Jong, and Kuiken (2011) investigated the effect of comprehensive direct and coded WCF with 268 Dutch secondary schools students ages 14-15 with multilingual backgrounds in the context of Dutch immersion content-based course. Results showed that, on the measure of accuracy, both direct and coded WCF groups equally outperformed the control group and the writing practice group not only in editing but also in a new piece of writing four weeks after the delivery of one-time WCF. The authors also performed a separate analysis of grammatical and non-grammatical error types and found that “only direct CF resulted in grammatical accuracy gains in new writing” but students’ “nongrammatical accuracy benefited most from indirect CF.” (p. 1-2). Additionally, corrective feedback “did not result in simplified writing when structural complexity and lexical diversity in students’ new writing were measured” (p. 2).

For the beginner learners of German at the University of Kansas, Vyatkina (2010) found that direct correction led to better immediate improvement in revisions for some error categories. But at the end of the 16-week semester, there was no significant advantage for any particular feedback type (direct, indirect WCF with just underlining or coded correction) on the accuracy rate in the six error categories (verb-related, noun-related, lexical, structural, word order, and spelling errors). The author further found that even direct, explicit WCF does not automatically lead to the correction by the students.

Semke (1980) found both direct and indirect treatments to be almost equally ineffective.

#### **2.2.3.3.2. Studies reporting advantage of direct WCF over indirect WCF**

When WCF is less direct, students might have problems understanding the WCF provided to them which could result in revisions that do not completely match the teacher's intentions (Ferris, 1995; Hyland, 1998). Especially students with lower proficiency levels may not have adequate linguistic awareness to correct errors, even if they are identified for them (Ferris, 2006, Ferris & Hedgcock, 1998). Vyatkina (2010) reported that underlining alone without code or explanation could lead to students' guessing about how to correct their errors in some cases.

Even with coded WCF, the teacher has to make sure that students understand the grammatical terms used in the metalinguistic annotations (Cohen & Cavalcanti, 1990; Lee, 1997; Muñoz, 2011). Thouësny (2011) found that some students in her study failed to attend to the WCF provided because they did not understand the linguistic terms contained in the metalinguistic WCF such as *auxiliary*, *indirect object*, *pronoun*. Wingfield (1975) suggests that teachers should provide sufficient clues to enable self-correction. Nakayama (2002) found that

students appreciated more detailed feedback such as providing examples or rule explanations. They thought the feedback with lists of revising criteria was not specific enough.

Some studies (including the above-mentioned Nakayama, 2002) concluded that direct WCF is superior to indirect WCF over time. Chandler (2003), for example, in a study with intermediate ESL college students, reported significant gains in writing accuracy for the students who received direct WCF over those who received one of three forms of indirect WCF (underlining with and without codes) after 10 weeks of treatment on five essays. Students preferred direct correction because it was the fastest and easiest way for them. However, students felt that they learned more from self-correction. Van Beuningen, Jong, and Kuiken (2011) found that, compared with coded WCF, only direct WCF resulted in grammatical accuracy gains in new writing for their students.

#### **2.2.3.3.3. Studies reporting advantage of indirect WCF over direct WCF**

In contrast, Corder (1967) has argued that “simple provision of the correct form may not be the most effective form of correction since it bars the way to the learner testing alternative hypothesis. Making a learner try to discover the right form could often be more instructive to both learner and teacher” (p. 11). Finding solutions to correcting one’s own errors involves more mental effort than simply copying what the teacher has written, and this results in more depth of mental engagement with WCF (Lyster & Mori, 2006).

Storch and Wigglesworth (2010) compared how learners process reformulations versus editing codes. They found that the level of engagement seemed more extensive with coded WCF. In contrast, reformulations tended to lead to fewer instances of extensive engagement. Maybe due to this cognitive benefit, some studies (Ferris & Hedgcock, 1998; Lalande, 1980; Lee, 1997; Muñoz, 2011; Sheen 2007) showed advantage of indirect WCF over direct WCF. For instance,



Ferris and Hedgcock (1998) reported that underlining appears to have “a more positive effect on long-term student improvement in accuracy and editing skills” than direct feedback (p. 206). Furthermore, Robb, Ross, and Shortreed (1986) found that indirect WCF is less time-consuming than direct methods.

Lalande (1980) compared coded WCF and direct corrections with 60 second-year students of German over a semester. The coded group also monitored their errors with an error awareness sheet. At the end of the semester, the coded WCF group achieved better accuracy scores, whereas the group receiving direct WCF made more errors. Lalande believes that providing cues instead of direct feedback is preferable because this type of guided learning encourages students to become actively engaged in processing feedback as a problem-solving activity.

This benefit of coded WCF over direct WCF is corroborated by Sachs and Polio’s (2007) study, where participants performed significantly better in the coded WCF group than in the reformulation group in revising the draft. Likewise, Sheen (2007) reported that her intermediate ESL learners who received metalinguistic explanations retained the gains they had made in their immediate post-test, but that those who received direct WCF alone did not retain their level of performance in terms of the use of English articles.

In a study conducted by Ferris, Chaney, Komura, Roberts, and McKee (2000), the researchers found that direct correction exhibits more efficacy in the short-term, whereas indirect feedback is more favorable in the long-term. Ferris (2006) found long-term superiority for indirect WCF over direct WCF. Van Beuningen, Jong, and Kuiken (2011) reported that their students’ accuracy in non-grammatical categories (lexical and orthographical errors) benefited most from coded WCF, compared to direct correction.

#### **2.2.4. Scope of WCF**

Another area of WCF research concerns the scope of WCF, that is, researchers investigate whether WCF is more effective when it is tailored to particular errors rather than more broadly to a wider range of errors. The scope of WCF can be classified as *focused/selective* or *unfocused/comprehensive*.

##### **2.2.4.1. Focused WCF**

Focused or selective WCF concentrates on specific types of errors and ignores the other types. Highly focused WCF will focus on a single error type. Somewhat less focused CF will target more than one error type but still limit corrections to only a few pre-selected types (Ellis et al., 2008).

##### **2.2.4.1.1. Studies reporting effectiveness of focused WCF**

Many researchers advise teachers to be selective in their form-focused feedback (e.g., Leki, 1992; Raimes, 1983, 1991, 1992). Targeted treatment increases the amount of input per grammar item and thus may promote awareness and noticing.

Most of WCF studies conducted before 2000 have examined unfocused correction. This may have been due to the fear that errors, if not corrected, may become ingrained and fossilized (Lalande, 1982; Selinker 1972; Vandergrift, 1986). This view corresponds with the behaviorist learning theory, namely that errors not corrected get repeated and become a habit which might lead to fossilization (Skinner, 1957). However, all most recent studies (which included a control group) that have so far demonstrated the effectiveness of WCF have applied highly focused WCF (e.g. Bitchener, 2008; Bitchener & Knoch, 2008, 2009a, 2009b, 2010; Bitchener, Young, & Cameron, 2005; Ellis et al., 2008; Sheen, 2007, 2010; Sheen, Wright, & Moldawa, 2009).

Despite the positive evidence for the effectiveness of CF offered by these studies, the focus for the WCF treatment as practiced in these studies (two functional uses of the English article system: the referential indefinite article ‘*a*’ for referring to something the first time and the referential definite article ‘*the*’ for referring to something that has been mentioned before) may be too narrow to advance the overall writing accuracy (Evans, Hartshorn, & Strong-Krause, 2011). Addressing a single grammatical feature may also be not feasible in the context of the complete language curriculum since learners experience numerous grammatical problems (Ellis, 2002). As Ferris (2010) commented, “[a]lthough practitioners certainly want students to use articles and other linguistic features accurately, a heavy emphasis on a few narrowly drawn structures in instruction and feedback would seem too limited a focus for a writing class” (p. 188).

#### **2.2.4.2. Unfocused WCF**

In the unfocused or comprehensive WCF method, WCF is directed at all or a wide range of errors in learners’ written work (Ellis et al., 2008).

##### **2.2.4.2.1. Studies reporting effectiveness of unfocused WCF**

In Hartshorn’s (2008) study, students in the treatment group wrote for 10 minutes each day, received comprehensive WCF on their writing, and tracked their progress. The results revealed significant improvements in lexical accuracy and in some grammar categories for the treatment group. Hartshorn concluded that this study “provides evidence that grammatical accuracy as well as nongrammatical accuracy can be improved through corrective feedback”, and that “L2 writers may benefit the most when feedback designed to improve linguistic accuracy is manageable, meaningful, timely, and constant” (p. 153). This conclusion was also validated by Evans, Hartshorn, McCollum, and Wolfersberger (2010), and by Evans, Hartshorn,

and Strong-Krause (2011). The authors called this kind of interactive and continuous WCF *dynamic* WCF.

#### **2.2.4.2.2. Studies reporting no effect of unfocused WCF**

Critics of unfocused CF believe that excessive correction may overwhelm learners (George, 1972; Semke, 1984). This might be due to the fact that learner's working memory is quite limited in the number of unrelated items it can hold and process (Robinson, 2002, 2003). Even if students understand the reason for teachers' corrections, they may quickly forget them, particularly if the CF is provided for a variety of features (Truscott, 1996).

Total correction can also undermine students' confidence and exert negative influence on learner's affective disposition which Semke (1984) terms the effect of the red pen: "The return of papers covered with the inevitable red marks results in looks of disappointment and discouragement on students' faces" (p.195).

On the other hand, students in the control group of Nakazawa's (2006) study were actually frustrated because they did not receive any WCF, complaining that they "did not learn at all" and that they had "no motivation and even 'no fun'" (p. 107) in revising their writing without teacher WCF. Similar to the students in Lalande's (1982) study, students who received WCF in Nakazawa's (2006) study did not feel discouraged or frustrated by the corrections. Leki (1990) found that her students prefer comprehensive and coded feedback. Lee (2004) also found that EFL teachers as well as the students in Hongkong had a preference for comprehensive error feedback. These findings lend support to Leki's (1991) reasoning that ignoring students' request for error correction might also work against students' motivation.

### 2.2.4.3. Focused vs. unfocused CF

The present study attempts to compare the effect of focused and unfocused WCF on German case acquisition. To date, few studies have compared focused and unfocused written CF.

Ellis et al. (2008) compared the effects of focused and unfocused direct WCF on accuracy with EFL students at a Japanese university. The focused target was the use of English articles. They found that both WCF groups gained from a pre-test to post-tests and on a test involving a new piece of narrative writing and also outperformed no-feedback control group. There was no significant difference between focused or unfocused group.

Another study by Sheen et al. (2009) compared focused and less focused direct WCF with 80 ESL intermediate students at a US college. The focus was the acquisition of English articles; for the “unfocused” group, WCF target was five linguistic features including English articles (i.e., copular ‘*be*’, regular past tense, irregular past tense and preposition). There was a writing practice group and a control group, both of which did not receive any WCF with the difference that the former performed written narrative tasks while the latter was not required to write anything.

The results of this study indicate that, in the use of articles, the focused group outperformed the control group and the unfocused group in the short term. In the longer term, the focused group outperformed the control group, whereas the unfocused group did not. All groups including the writing practice group performed better than the control group, suggesting that “doing writing tasks is of value by itself” (Sheen et al., 2009, p. 556). With regard to learners’ accuracy in the five targeted grammatical features, the results showed that the focused group achieved the highest accuracy gains, followed by the writing practice group, unfocused group, and control group. In other words, the learners in the focused group who received

correction only on articles also improved their accuracy on the other four types of grammatical features, while the unfocused group did not. The unfocused CF group did not do better than the control group in the use of English articles. The authors speculated that this confounding finding might be partially due to the fact that, with unfocused direct correction, learners were unable to process the feedback effectively because they did not understand why they had been corrected.

### **2.2.5. Combination of WCF with other form-focused interventions**

Several studies have conflated WCF with other forms of feedback. For example, one group in Frantzen's (1995) study received daily grammar review and direct WCF, whereas the other group received no supplemental instruction in grammar but received indirect WCF (circling or underlining). At the end of the semester, the plus-grammar group significantly outperformed the WCF only group on a grammar-focused test. However, this study was more suited to examine the effect of grammar review rather than the WCF itself, since it cannot be determined whether it was the grammar review, the corrective feedback, or the interaction of the two that was responsible for the results.

Some studies (e.g., Bitchener 2008; Bitchener & Knoch, 2008, 2010; Bitchener, Young, & Cameron, 2005; Ellis et al., 2008; Santos et al., 2010; Sheen, 2007, 2010) have combined WCF with other follow-up strategies such as rule reminders or metalinguistic explanations and conferences. Lalande (1984) and Hartshorn (2008) supplemented coded WCF with an error log.

Bitchener, Young, and Cameron (2005) compared the effect of three feedback options: (1) direct correction plus written and oral metalinguistic explanation, (2) direct correction plus written meta-linguistic explanation, and (3) direct correction only. Thus, this study was more geared toward examining the effect of oral metalinguistic explanations. They found that the

addition of oral metalinguistic explanation may be responsible for the advantage attained by group (1). However, the benefit of the addition of oral metalinguistic explanation was not repeated in Bitchener and Knoch (2008).

Combining different types of WCF in one treatment group has its problems when interpreting the research results. Since the treatment has different components, “it is unclear whether certain elements of the method had a greater effect on improved accuracy or whether some elements were not as helpful” (Hartshorn, 2008, p. 151). Hartshorn (2008) suggested for future research to isolate the various components of the WCF method in order to identify “those elements that have the greatest effect on improved accuracy” (p.151). Additionally, as Ferris (2010) pointed out, “most teachers have neither the time nor the patience to give that much feedback in that much detail, especially if they are attempting to address a broader, more complex range of error types” (p.193). Therefore, multi-component WCF combinations may not reflect typical realistic teaching settings and have limited implications.

#### **2.2.6. The effectiveness of WCF in relation to the nature of errors**

Russel and Spada (2006) carried out a meta-analysis of 15 studies on oral and written CF and did not find any sufficient evidence to “claim benefits for one type of feedback over another” (p. 154). However, the effectiveness of WCF may depend not only on the WCF type but also on the properties of the targeted grammar features. Goldschneider and DeKeyser (2001) suggest that a combination of the five determinants (perceptual salience, semantic complexity, morphophonological regularity, syntactic category, and frequency) could account for the acquisition order. These elements may also influence the extent of the effectiveness of WCF.

The first of the five determinants - perceptual salience - is related to the supremacy of the meaning principle and the form-meaning mapping principle. According to Ausubel (1964),

learning a second language is similar to learning another set of symbols for familiar meanings. The main act is establishing equivalency between the new symbols and the meaningful symbols already stored in the mind through the prior language. Krashen (1982) has claimed that conscious learning processes (e.g. explicit instruction) will be ineffective when applied to complex L2 rules, which are semantically opaque. Some aspects of language such as inflectional morphology are often not noticed by learners because they are less perceptible in input despite of their high frequency (Mackey, Gass, & McDonough, 2000; Sato, 1986).

Relating the nature of errors to WCF, Ferris (1999) made a distinction between the “treatable” and “untreatable” errors based on the view that linguistic categories are part of different domains of linguistic knowledge and should not be addressed indiscriminately. Treatable errors are those that are easy to describe, i.e. errors that occur in a patterned, rule-governed way. In contrast, errors can be considered ‘untreatable’, when there are no clear and succinct rules students can consult to avoid or fix those types of errors (Ferris, 1999, 2010). As error types can impact the effectiveness of a particular WCF method, students might be served best when the method of feedback is dictated by the error type (Ferris, 2006). Scarcella and Oxford (1992) suggested that multiple forms of feedback should be used in combination depending on the nature of the error and the student characteristics. Truscott (1996) also argued that no single form of correction could be expected to help learners acquire knowledge of all linguistic forms and structures. Ferris (2002) observed that though direct feedback led to greater accuracy in text revisions, indirect feedback resulted in the production of fewer initial errors over time. Bitchener, Young, and Cameron (2006) found WCF effective for helping L2 writers improve their accuracy in the rule-based categories (English simple past tense and articles) but not in the more idiosyncratic use of prepositions. Bitchener and Knoch (2008) pointed out that



complex errors might not be good targets for indirect feedback since learners are often not capable of self-correcting the identified errors. Vyatkina (2010) came to a similar conclusion. For complicated grammar features that cannot be simply marked or explained or for the target forms which are beyond the students' current abilities, reformulation and recast serve as exemplars of positive evidence with a model of the correct form, yet at the same time, they can be seen as negative evidence because they indicate to the learner that the original utterance needs to be reformed (Gass, 1997; Leeman, 2003; Schachter, 1983). Since the correct form is juxtaposed with the non-target-like form, learners can compare the two versions and notice the discrepancy (Cohen, 1990). Finally, for features about which students already have some explicit knowledge, indirect CF can assist them in the transition from declarative to procedural knowledge (de Bot, 1996; Lyster, 2004).

### **2.3. Reception of WCF**

The provision of the written corrective feedback represents only one side of the coin. The other side of the coin deals with the reception of WCF, which encompasses a host of cognitive, affective factors and contextual issues that affect the learners' acceptance and absorption of WCF.

#### **2.3.1. Learner variables in relation to WCF**

##### **2.3.1.1. Proficiency of the learners**

Students' ability to make use of WCF depends on their proficiency level. Frantzen and Rissel (1987) and Vyatkina (2010) found that, for students of lower level proficiency, simply underlining the error might be not informative enough because students could not determine exactly what the error was. Ferris (2004) recommends indirect feedback for most instances but cautions that students at lower levels of L2 proficiency may need direct feedback.

### 2.3.1.2. Learners' preference for WCF

As Mhundwa (2005) points out, from the interactionist perspective, it is natural for learners to expect their interlocutors to provide corrective feedback in the process of negotiation for meaning. With respect to students' preference for form-related WCF, which is the focus of the present study, previous research has shown that most L2 writers welcome teacher WCF (Burkland & Grimm, 1986; Cohen, 1987; Enginarlar, 1993; Lalande, 1982; Leki, 1991; Nakazawa, 2006; Radecki & Swales, 1988). Leki's (1991) survey of 100 ESL students found that the students would not be fully satisfied with teacher feedback that dealt with only content. However, liking WCF does not equally translate into attending to WCF. In Leki's (1991) study, only half of the students who voiced preference for WCF actually looked carefully at the feedback, unlike the students in Nakazawa's (2006) study, where "the majority of the students frequently refer to previously written compositions and given feedback to write a new composition" (p. 94).

Other studies (e.g., Casciani & Rapallino, 1991; Schulz, 1996, 2001, 2002) also showed that students had a strong belief in WCF in foreign language learning contexts as FL students are more concerned about linguistic errors than ESL students (Hedgcock & Lefkowitz, 1994). Peacock (2001) and Samimy and Lee (1997) found that most learners agree with the statement in the questionnaire that "learning a foreign language is mostly a matter of learning a lot of grammar rules".

With regard to the tone of WCF, several researchers (e.g. Cardelle & Corno, 1981; Ferris & Hedgcock, 1998) reported that students respond better when teachers provide both encouragement and constructive criticism through their feedback.

With regard to the type of WCF, several studies report that students feel they are learning more when they are involved in self-correction after teacher's indirect WCF with cues (Chandler, 2003; Hyland, 2001a; Lee, 2005; Leki, 1991; Saito, 1994).

With regard to the providers of WCF, students consistently rate WCF provided by the teacher more highly than peer feedback (Enginarlar, 1993; Ferris, 1995; Leki, 1991; Nelson & Carson, 1998; Radecki & Swales, 1988; Saito, 1994).

### **2.3.1.3. Learners' attitude toward WCF**

The effectiveness of any teacher intervention is dependent on learners' motivation and presupposes active learner participation. As Corder (1967) noted, "it is the learner who controls the external stimuli, or the input, or more properly, his intake" (p. 165). Later, Corder (1981) again pointed out that there is obviously not a one-to-one relation between input and output. Converting corrective CF into long-term acquisition must be achieved internally by the learners themselves, in accordance with their particular learning goals (Carroll, 2001).

From the sociocultural viewpoint, learners (particularly adult learners) are intentional agents in their language learning activity and their behavior is guided by their own beliefs and goals (Lantolf & Pavlenko, 2001). Most researchers (e.g. Cohen, 1975; Dulay & Burt, 1977; Sheen, 2010; Wingfield, 1975) agree that personalized feedback which is tailored to the learner's level of development would be ideal. However, Cardelle and Corno (1981) made the point that a totally individualized approach is impossible to implement in most classroom situations, especially when teachers have large classes.

The degree of adoption of CF may be influenced by many individual learner factors such as aptitude and learning styles. Learners may need to be sensitive to feedback cues to make progress (Ellis, Basturkmen, & Loewen, 2001; Iwashita, 2003). The depth of processing also

affects the impact of feedback. Some studies (e.g., Egi, 2007; Hyland, 1998; Qi & Lapkin, 2001; Sachs & Polio, 2007; Swain & Lapkin, 2003) suggested that WCF is effective only if it is noticed and understood. Learners with higher degree of motivation have more interest in engaging in a higher level of the analysis of corrective feedback (Goldstein, 2006). The intensity of engagement with CF may play the crucial role for making the general claim whether CF is effective or not (Ferris & Roberts, 2001; Robb, Ross, & Shortreed, 1986).

### **2.3.2. Contextual variables in relation to WCF**

The level of motivation, in turn, is closely related to the context of language instruction. Foreign language students are less motivated to correct their work since their need to write accurately in the target language is largely limited to assignments within the language classroom (Ferris, 1999; Hedgcock & Lefkowitz, 1994; Leki, 2003). In the GFL situation, for example, not only is the classroom time very limited, there may be no need to communicate in writing to a German native outside the classroom for those students who take German only to fulfill the degree requirement. As one of the students in the present study said: "I really do not plan on using German at all. It is not my major". Under these circumstances, it is understandable that only those proactive learners who not only have the inclination but also take the time needed and make necessary efforts to absorb teacher WCF conscientiously would benefit the most from WCF.

## **2.4. Design variables of previous studies**

### **2.4.1. The role of revision in relation to WCF**

For students of low levels of motivation, teachers often complain that they did not attend to the WCF provided. Mahili (1994) laments: "What does our student do? Very often he takes a brief look at the red marks on his paper, folds it, puts it in one of his other books, and never looks

at it again” (p. 24). Without the revision requirement, learners do not have to modify their output which would unlikely lead to uptake (Guénette, 2007). In order to remedy this problem, many teachers implement the requirement of revision for the writing tasks.

Many studies found that requiring students to redraft their assignments incorporating teacher’s corrections is beneficial in improving accuracy. Ashwell (2002) and Komiya (1991) found that, when the teacher made it clear that a change was expected, their students were able to make gains in accuracy simply by redrafting even when no WCF is provided. Schlue (1977) and Makino (1993) discovered that students often were able to locate their errors even in the no-feedback condition. Furthermore, students are more attentive to written CF on preliminary drafts than on the final graded draft (Ferris, 1995, 2005, 2006, 2007; Freedman, 1987; Leki, 1991; Nakazawa, 2006; Sakai, 1999). As Stanley (1979) observed, “when corrections are not required of the student, the test is often glanced at briefly and consigned to oblivion” (p. 26). On the other hand, students most likely resent the absence of feedback if they are being graded on the revision, “because the lack of correction would suggest grammatical accuracy” (Frantzen, 1995, p. 332).

One study especially isolated the role of revision as a variable in the WCF treatment. In Chandler’s (2003) study, there were two groups of ESL students who wrote five compositions over one semester. Errors in these writings were underlined, but one group was not required to revise their work. The group in which students had to correct their errors improved significantly in accuracy by the end of the semester, whereas the group that did not revise showed a decline in accuracy. Fazio (2001) also found that few students in his study always attended to the teacher WCF to their journal writings, especially because no revision was required of the students.

Chandler (2003) attributed the absence of WCF effect found by Kepner (1991) to the lack of revision requirement. Lalande (1982) is also of the opinion that the requirement of the

revision compels students to confront their mistakes and reflect upon them. Students have to invest more effort in processing the WCF they receive and are more likely to correct their errors if they want to have a good grade. Self-revision is a form of uptake which refers to the learner's immediate responses to corrective feedback provided (Loewen, 2004; Sheen, 2006). By self-repairing in response to WCF, learners are pushed to engage in some degree of reanalysis. This cognitive process could heighten awareness of grammatical rules and promote learner uptake (Lightbown & Spada, 1999).

However, for features which involve succinct rules, some studies (Bitchener & Knoch, 2008; Bitchener, Young & Cameron, 2005; Cardelle & Corno, 1981; Ellis et al., 2008; Sheen, 2007) show that WCF is effective even when student were not required to revise their work following WCF.

There are also dissenting voices doubting the benefit of the revision requirement. In Semke's (1980) study, the students in the groups who were required to self-correct their weekly free writing journals did not perform better than the no-revision-groups in terms of writing accuracy on the free writing test.

Krashen (1982) suggests that error correction puts students on the defensive and encourages them to avoid using difficult constructions. Several studies (e.g. Lee, 2005; Schachter, 1974; Sheppard, 1992) suspected that correction and revision requirement have induced students to employ avoidance strategy. Truscott (2007) notes that "corrected students tend to shorten and simplify their writing [...], apparently to avoid situations in which they might make errors" (2007, p. 268). Thus, the improvement of accuracy may be obtained at the expense of reduced complexity and fluency.

However, some studies (e.g. Chandler, 2003; Lizotte, 2001; Robb, Ross & Shortreed, 1986; Van Beuningen, De Jong, Kuiken, 2011) offer contrary evidence. In these studies, the increase in accuracy by the form-focused groups was not accompanied by a decline in fluency and complexity over time. Contrary to the notion that commentaries are conducive to greater amounts of writing, in Fazio's (2001) study, students of French receiving commentaries did not produce greater quantity of writing than their counterparts who received corrections or both corrections and commentaries. Similarly, the study by Vyatkina (2010) found that the corrected students did not shorten their writings, suggesting that corrections did not interfere with fluency.

#### **2.4.2. Longitudinal vs. short-term or one-time treatment**

Many studies reported positive effect for WCF versus no WCF. However these studies (e.g. Fathman & Whalley, 1990; Ferris, 1997, 2006; Ferris & Roberts, 2001; Frantzen & Rissell, 1987; Lee, 1997) did not examine the effect of WCF on new pieces of writing but instead measured accuracy only on rewrites. Truscott (1996) argues that this type of study cannot make claims about the long-term effect of WCF because the improvement shown on revisions is due to short-term memorization, and is not likely sustained on subsequent writing in the future. This argument was corroborated by Truscott and Hsu (2008) who found that, although rewriting corrected drafts results in lower grammar error rates on the rewritten texts, this effect did not extend to a subsequent new writing task which was done a week after the first WCF treatment with underlining.

A longitudinal design would facilitate an analysis of the long-term effect of WCF. However, Ferris (2004) argues that one cannot discount the short-term benefits of WCF: "editing one's text after receiving error feedback is likely a necessary, or at least helpful, step on the road

to longer term improvement in accuracy” (p. 54). Rehearsing and repeating might play a major role in order for a noticed item to be retained in long-term memory (Ferris, 2010).

### **2.4.3. Control vs. no control**

A number of studies have looked beyond the immediate corrections in a subsequent draft, and conclude that WCF is effective in helping L2 students improve the accuracy of their writing over time (e.g. Chandler, 2003; Ferris, 1995, 1997, 2006; Ferris & Helt, 2000; Ferris et al., 2000; Frantzen, 2005; Hyland 2003; Komiya, 1991; Lalande, 1982; Robb, Ross, & Shortreed, 1986; Sheppard, 1992). However, because these studies did not include a non-feedback control group, the positive evidence offered by this kind of works was dismissed by Truscott (1996, 2004). Truscott considers the control measure crucial to answering the big question of whether WCF is useful or not in the long run at all. Truscott (2004) insists that without a control group, findings for grammar correction are not convincing: “Researchers who wish to attribute observed gains to correction must show that the other factors can be ruled out - by including a comparison group that received little or no correction” (p. 337). He further argues that research without a control group “may provide evidence about the relative effects of different types of correction but not about the effects of correcting relative to not correcting” (p. 337).

## **2.5. Motivation for the current study**

### **2.5.1. The importance of investigating the effectiveness of WCF**

From the different positions and conflicting findings reviewed above, it can be concluded that the effectiveness of WCF not only depends on the methods of supplying WCF, the characteristics of learners and the instructional setting, it is also affected by the nature of errors. Thus, WCF is a complicated and multi-faceted subject, which deserves cognitive, affective, pragmatic, and pedagogical exploration. As a “complex phenomenon with several functions”



(Chaudron, 1988, p. 152), feedback was viewed as an important component of theories of learning (Sinclair & Brazil, 1982). The researcher agrees with Segade's (2004) view that "[g]iven the amount of effort and time that goes into responding, it is imperative that we find response practices that make sense and learn how to change those that don't".

### **2.5.2. Inconclusive evidence produced by the previous studies**

The review of the previous literature revealed that there is no agreement in regard to both the provision of WCF in general and what kind of WCF is effective for specific error categories. In a review article, Truscott (1996) presented several arguments against grammar correction: grammar correction, whether direct or indirect, is neither effective nor helpful for both L1 and L2 writing courses; it only reduces errors in a subsequent draft but has little effect on grammatical accuracy in a new piece of writing; this kind of gain is due to short-term memorization, which is superficial and transient, and is not likely to contribute to long-term acquisition. He went further to advocate that grammar correction should be abandoned because it might be even harmful in terms of fluency, complexity, and learner attitude.

Many of the foregoing studies (e.g. Ashwell, 2000; Chandler, 2003; Kepner, 1991; Lalande, 1982; Sheppard, 1992) on WCF included grammar, vocabulary and even spelling and punctuation as the items for WCF. Truscott (2007) stressed that the case he made against CF was specifically against grammar correction because non-grammatical errors, such as spelling, often can be treated in isolation with observable improvement. He maintains that grammatical errors are much different because they arise from a much more complex system. Truscott (2007) contended that "correction may have value for some non-grammatical errors but not for grammatical errors" (p. 258). He underscored this point by concluding that "research has found correction to be a clear and dramatic failure" (p. 271).

This strong challenge to the standard practice of teachers in language classrooms has stirred up a considerable debate surrounding what Truscott (2004) dubbed “The Big Question”: Is written corrective feedback helpful in improving written accuracy over time?

In rebuttal, Ferris (2007) and Chandler (2004, 2009) argued that Truscott overstated and oversimplified research findings in favor of his thesis. For instance, Truscott (1996) stressed the importance of the control component in study design. But as Chandler (2004) pointed out, some of the studies (e.g. Hendrickson, 1976; Robb, Ross, & Shortreed, 1986) cited by Truscott in support of abandonment of WCF did not have a control group either. Bruton (2009) also disputed Truscott and Hu’s (2008) claim that the benefits of error correction attained on the revision task did not extend to a new writing task performed a week later. To substantiate this criticism, Bruton (2009) analyzed the data in Truscott and Hu’s (2008) study and concluded that actually none of the errors in the new text “could be attributable to a lack of learning from previous corrections as none of them correlate” (p. 139). Bruton (2009), therefore, argues that the result from Truscott and Hu’s (2008) study was insufficient to be used as definite evidence in order to support the inefficacy of error feedback.

In addition, a finding in one setting is often inapplicable in a divergent learning context. Ferris (1996) argued that the results from the studies cited by Truscott (1996) cannot be generalized because those studies are not comparable: differences in subjects, research design, and instructional methods as well as the use of different kinds of scoring measures make it “virtually impossible to support any generalization other than the cliché ‘further research is necessary’ from this group of studies” (p. 5).

Extensive reviews of available empirical research (e.g., Goldstein, 2001, 2004, 2005; Hyland & Hyland, 2006) conclude that findings about the merits of CF are mixed, thus not

conclusive. However, the meta-analysis performed by Norris and Ortega (2000) let them conclude that WCF does help learners' ability to write grammatically. The same stance was adopted by Russell and Spada (2006), who carried out a meta-analysis of 15 studies relating to the efficacy of oral and written feedback on L2 grammar accuracy.

As Chandler (2003) pointed out, some studies which did not find any benefit of WCF had methodological deficiencies. For example, similar to Semke's (1980) study, the group receiving WCF in Polio, Fleck, and Leder's (1998) study was assigned to write half as many journal entries as the control group because of their editing activities. DeKeyser (1993) pointed out that Semke's (1980) study strongly biased the subjects toward aiming for fluency rather than accuracy since the grades for the content comment group was based solely on the amount written.

In response to Truscott's challenge, a number of studies (Bitchener, 2008, 2009; Bitchener & Knoch, 2008a, 2008b, 2010; Bitchener, Young, & Cameron, 2005; Hartshorn, 2008; Muñoz, 2011; Nakazawa, 2006; Sheen, 2007, 2008, 2010; Sheen, Murakami, & Takashima, 2008; Van Beuningen, De Jong, & Kuiken, 2011) have been undertaken. Most of these studies have avoided the research design flaws of the foregoing studies: they included a control group, evaluated not only revisions but also new writing samples, and involved a longitudinal component.

Among these studies, all focused studies testify to the effectiveness of WCF at least in respect to the use of the English articles in ESL and EFL contexts. Bitchener, Young, and Cameron (2005) also found positive WCF effect on the English past simple tense but not on prepositions. Muñoz (2011) found that coded WCF is effective in promoting accuracy of the Spanish verb forms by American students. Van Beuningen, Jong, and Kuiken (2011) found that

direct WCF resulted in grammatical accuracy gains in new writing without decline in complexity and lexical diversity.

Together, these studies provide counterevidence to Truscott's (1999) contention that feedback is ineffective and even detrimental to L2 development. Ferris (1999) stated that "there is mounting research evidence that effective error correction – that which is selective, prioritized, and clear – can and does help at least some student writers" (p. 4). Truscott (1996) acknowledged that a selective approach to error correction might work.

### **2.5.3. Need for research in different contexts**

The bulk of the studies carried out in the area of written corrective feedback are related to ESL or EFL contexts. The result from those studies might be inadequate for the GFL context since languages obviously differ – in particular, in terms of their morphological complexity (Bloomfield, 1961; Greenberg, 1978). As Grigorenko (2002) points out, English has only a few inflectional affixes, whereas languages like Russian and German are viewed as hard in terms of their inflectional morphology. According to Diehl and Studer (2001), German is a feared subject for francophone students in Geneva because they consider German grammar to be difficult. As Born (1985) remarked, "[i]t is generally accepted that German inflectional morphology constitutes a major error source for learners of German at all levels" (p. 246). These facts justify language-specific considerations in teaching and research.

Considering the complexity of the case system in German, WCF may have different impacts on GFL student writing comparing to ESL students, which calls for further research to address this issue. There are few studies (e.g., Ellis et al., 2008; Sheen et al., 2009) that have compared focused and unfocused written CF in ESL settings, and there is, to the knowledge of the researcher, no study so far that compared focused CF with unfocused CF in the GFL context.

#### **2.5.4. Need for investigating effect of WCF on a specific grammar category**

Bitchener and Knoch (2010) pointed to the need to continue research on focused error categories: “While there is growing empirical evidence that written CF can successfully target some types of linguistic error, it is unclear whether some linguistic error domains and categories are more treatable than others” (p. 207). Therefore, more research with respect to what types of errors are amenable to WCF is needed. Ellis et al. (2008) called for evidence that written CF can affect other grammatical features besides English articles and also in different contexts: “we need more studies looking at different grammatical features” (p. 368). Santos et al. (2011) wrote: “As recently noted by Xu (2009) and Ferris (2010), only a limited number of errors related to a restricted range of linguistic forms have been investigated so far. Therefore, the question remains whether or not the observed benefits of CF apply to the acquisition of more complex target features and structures” (p. 134). Muñoz (2010) found positive longitudinal effect of WCF on the acquisition of Spanish verb forms. She recommends further research to find out whether the positive findings of this study also apply to other linguistic error categories.

In summary, as Hartshorn (2008) remarked, “[g]reater understanding of trends in L2 writing accuracy for specific linguistic errors would be very useful for guiding pedagogy” (p. 150).

#### **2.5.5. Targeted form for WCF in the present study**

For the current study, the use of German cases was chosen as the target linguistic feature for the focused WCF group. The reasons for this choice are manifold.

First, the present study is particularly relevant because German case morphology is an important part of the German grammar, however there is scant research investigating the effect

of WCF on its acquisition. Recently, Baten (2011) noted that “[s]o far, case acquisition by GFL learners has hardly been investigated” (p. 494).

Second, German case morphology is too complex to be reduced to a simple set of rules. Thus, the current study can test whether German case morphology would prove to be “untreatable” under the conditions of the study.

Third, many students of German encounter a great deal of problems with German case morphology and its functional use. Most researchers agree that errors that occur frequently should be given priority when deciding what type of errors teachers should correct. For areas of grammar where learners are known to experience significant learning problems such as German case system, it is beneficial to find out whether a specific method of WCF can better aid the acquisition over time. It is noteworthy that in Lalande’s (1980) study, German case was the only grammar category in which the reduction of students’ writing errors achieved statistical significance.

Fourth, German cases are introduced early on in textbooks. However, learners of German demonstrate difficulties in gaining full control of this feature, even at the intermediate levels (Diehl, Leuenberger, Pelvat, & Studer, 2000; Kufner, 1962; Lalande, 1980; Ritterbusch, LaFond, & Agustin, 2006; Spinner & Juffs, 2008). According to Ellis et al. (2008), corrective feedback will be more effective in assisting learners to develop control over forms learners already partially acquired than entirely new linguistic forms.

Lastly, German cases are used ubiquitously in all types of sentences. Therefore, there is no need to design specific writing topics or genres to solicit the use of cases. Students simply cannot avoid their use.

## **2.6. Research objective of the current study**

The present study is undertaken to investigate whether German case errors are amenable to WCF for students in the GFL context and what kind of WCF (focused vs. unfocused) is more effective. Pertaining to the two treatments of the current study, the researcher is interested in finding out if the German case system is too broad a category for focused WCF treatment or is untreatable under the conditions of the study. The following research questions will guide the data analysis:

RQ 1. Does focused WCF have a positive or a negative effect (if any) on learner use of German case morphology over the course of a semester? If so, to what degree?

RQ 2. How do three WCF methods (focused, unfocused, and no correction) compare in regard to their efficacy on student writing accuracy in the use of German cases?

RQ 3. Does WCF have a negative impact on the fluency of learner writing?

RQ 4. Is any category in the German case morphology more amenable to WCF?

RQ 5. How did the learners in different groups respond to different WCF types in revising their essays?

RQ 6. How do different treatment methods affect learners' attitudes towards WCF?

Ferris (2004) suggested that careful research designs are needed and listed several components as part of a sound research design:

We need studies that are comparable in design and that are reported clearly enough to be replicable. Specifically, what is needed, going forward, are studies that carefully (a) report on learner and contextual characteristics; (b) define operationally which errors are being examined (and what is meant by "error" to begin with); (c) provide consistent treatments or feedback schemes; and (d) explain how such errors (and revisions or edits) were counted and analyzed systematically. Then these studies should be replicated across a range of contexts and learner types. (p. 57)

This study was designed to follow all these recommendations. More specifically, it is a longitudinal study with two treatment groups and a control group of 2nd year US students of

German. The longitudinal design allowed the researcher to track the impact of WCF on case acquisition by the participants over the course of a semester. Student attitude toward WCF was explored in the present study as an ancillary component by looking at students' responses to a questionnaire at the end of the semester.

The subjects and the institutional settings of this study were comparable to that in Semke (1980) and Lalande (1982) which allowed the researcher to compare the findings with the results of those studies. At the same time, this study tried to avoid the weaknesses in the previous studies' research design. For instance, Lalande (1982)'s study did not include a control group that did not receive any corrective feedback. Semke's (1980) ten minute free writing sample test was not controlled; students could write only about things they wrote before and thus were familiar and comfortable with. Testing materials the present study employs were controlled yet they were not discrete unit grammar tests but short essays written to authentic curricular tasks.

## **2.7. Summary**

The foregoing review of the literature reveals that research results so far are conflicting and not conclusive regarding the effectiveness of WCF in general and the effects of different kinds of corrective feedback in particular. However, regarding the scope of WCF, the focused approach can facilitate the acquisition of some linguistics features. The present study builds on this consensus and extends the target to a more complex grammar feature in German. In sum, the debate with rival claims regarding the effects of WCF, the paucity of research into focused and unfocused WCF, especially with regard to German case acquisition, have prompted this research.

The literature review also shows that many studies (especially those conducted prior to 1996) suffered from limitations in several design issues related to the revision requirement,



absence of a control group, and the WCF time frame. This study capitalizes on strengths and addresses limitations of the previous research, which are summarized in Table 2.1 and Table 2.2. For instance, in light of the benefits derived from both direct and indirect WCF, the present study employed coded metalinguistic feedback for both treatment groups while allowing direct correction of errors which cannot be indicated by code alone, or when students were not able to self-correct using codes. It also incorporated the element of revision requirement even for the control group which did not receive WCF into the research design. While the main focus of this study is the effect of WCF on German case acquisition, student attitude towards WCF in the context of this study was also explored through an exit questionnaire. In addition, this study examined whether the treatment increased case accuracy without diminishing writing fluency. The next chapter will describe the research methodology and procedures employed for the present study in detail.

**Table 2.1. WCF studies with a control group**

<b>Author</b>	<b>Participants &amp; Writing</b>	<b>WCF type</b>	<b>Duration, Tasks &amp; Target</b>	<b>Effective</b>	<b>Limitations</b>
Hendrickson (1976)	24 interm. ESL students. Ohio State University	(1) direct correction of global errors (2) direct correction of global & local errors	9 weeks 6 writings	No sig. improvement in writing proficiency for either group. Improvement in fluency.	
Semke (1980)	141 students of German in 3 <sup>rd</sup> quadmester at University of Minnesota	(1) comment (2) direct (3) direct & comment (4) coded	10-week semester. Journal writing	No. (1) better in fluency.	(1) was graded on fluency only. (4) wrote four journals less than other groups.

Fathman & Whalley (1990)	72 ESL intermediate US college students	(1) underlining (2) content comment (3) content comment & underlining (4) control	A few days. Journal writing	Yes. student rewrites improved in content and accuracy	No new text were examined Not longitudinal.
Kepner (1991)	60 interm. students of Spanish at a US college	(1) direct CF + rule reminders & explanation (2) content-related comments	1 semester. 6 journal writing with 200-word minimum each	No.	No pre-test measurement Analytical flaws No revision requirement. Grades based on fluency
Sheppard (1992)	26 college ESL freshman	(1) coded WCF & conference (2) feedback on content	10 weeks. 7 essays.	Both groups improved sig. in verb accuracy. (2) sig. better on use of punctuation. (1) used less subordination	Difference in complexity could be due to a low frequency of the focal structures. Clarification requests for (2) may have included comments on verb usage
Polio, Fleck, & Leder (1998)	64 ESL US university students	(1) WCF; editing instruction; text revision (2) control	15 weeks. Journal writing 30-minute draft and 60-minute revision.	Yes. No sig. difference between groups.	(1) wrote half as many journal entries as (2).
Ashwell (2000)	50 EFL learners Japan university Writing class	(1) Three patterns of feedback (a) feedback on content first and WCF on form, (b) the reverse pattern, or (c) both form and content feedback (2) no feedback	Short-term. one 500-word journal drafted twice before a final version was produced	Yes. No sig. difference in accuracy or content scores on a 3rd draft in (1). All patterns were superior to (2).	New texts not measured

Fazio (2001)	112 (10-13 years old) students of French	(1) WCF with underlining & reformulation (2) content (3) combination of both	5 months. Weekly journals. Target: subject/verb & noun/adjective agreement	All groups increased the number of errors in grammatical spelling. No significant change between the groups.	All students received regular instruction in grammatical spelling. Error rates were relatively low to begin with
Ferris & Roberts (2001)	72 ESL learners at US college	(1) underlining & coding (2) underling (3) no WCF	1 semester	Yes. (1) & (2) outperformed (3). No sig. differences between (1) & (2).	No new writing examined
Bitchener, Young, & Cameron (2005)	53 adult migrant students at Auckland university	(1) direct WCF plus 5 minute individual conferences (2) direct WCF (3) no CF	12 week. 4 writings of 250 word each. Target: prepositions, past tense, articles	Sig. effect for (1) on accuracy in past tense and definite article. No overall effect on accuracy for WCF types	Conflation of treatment methods for (1)
Nakazawa (2006)	124 students of Japanese	(1) direct WCF (2) coded WCF (3) lists of revising criteria (4) control	15 weeks. 5 essays with revision requirement	No sig. differences between groups	Students' writings were not graded based on their accuracy.
Lee (1997)	149 EFL college students in Hong Kong	(1) underlining (2) check in margin (3) control	students corrected errors on a newspaper article with implanted errors	(1) sig. better than (2) and (3).	Not longitudinal. Errors are not made by students.
Kawashima (1998)	26 interm. students of Japanese in Canada	2 stages: 1) revision without WCF. 2) revision following WCF	1 essay	WCF is better	Not longitudinal

Sheen (2007)	91 adult intermediate ESL learners of various LI backgrounds in US	(1) direct WCF (2) direct WCF + explanation (3) control group	Two treatment sessions. Rewriting of a given story. Target: English articles	(1) & (2) performed much better than (3) on the immediate posttests but (2) performed better than (1).	
Bitchener & Knoch (2008)	144 ESL students in Auckland	(1) direct WCF + written & oral explanation (2) direct WCF + written explanation (3) direct WCF (4) no correction	2 months Target: English articles	Yes. All WCF groups outperformed (4). No sig. difference between (1) & (2).	
Truscott & Hsu (2008)	47 ESL graduate students in Taiwan	(1) errors underlined (2) no feedback.	1 week in-class narrative	(1) sig. better than the (2) on revision. No difference on a new narrative a week later	Errors in new writing did not correlate with errors in old writing
Bitchener & Knoch (2010)	63 ESL (advanced) learners at US university	(1) written explanation with an example (2) circling (3) combination of (1) & 15 minute class discussion. (4) control	10 weeks One time treatment. Target: English articles	WCF groups outperformed (4) in the immediate post-test. Improvement was only retained by (1) & (3), not the (2)	
Sheen (2010)	143 adult English learners of various first language backgrounds	(1) oral recasts (2) oral metalinguistic (3) direct WCF (4) metalinguistic WCF (5) control	Target: English articles	Yes.	

Muñoz (2011)	62 learners in fourth-year Spanish courses at a U.S. university	(1) coded (2) underline (3) control	1 semester. 6 essays Target: Spanish preterite and imperfect	Yes. (1) sig. better	
Van Beuninge, De Jong, & Kuiken (2011)	134 Dutch secondary schools with multilingual student populations	(1) direct WCF (2) coded WCF (3) revised without CF (4) Practice group: No WCF, no revision but performed a completely new writing task	6 weeks	Yes. Both (1) & (2) outperformed (3) & (4) during revision and in new pieces of writing 4 weeks later. Only (1) had accuracy gains in new writing.	

**Table 2.2. WCF Studies without a control group**

Author	Subject & Target	WCF type	Duration, Tasks & Target	Effectiveness	Limitation
Ayoun (2001)	145 Students of French at University of Arizona	(1) R (Complete a sentence, then 3-second exposure to recast) (2) M (3-second exposure to model sentence, then answer a question) (3) G (grammar lessons with a short practice, and answer key.	Once a week for 5 weeks. . Target: French Passé composé & imparfait	All groups improved sig. (1) improved the most followed by (2) and (3).	computerized delivery of CF provided (1) and (3) with the same feedback (i.e., the correct answer)

Cardelle & Corno, (1981)	68 students of Spanish at Stanford	(1) praise only for correct work (2) criticism only on errors (3) criticism & praise. (4) no WCF except grade.	6 weeks. 11 homework assignments, 3 criterion-referenced posttests.	Yes. (3) was sig. superior to all other groups	No revision requirement
Lalande (1980)	60 GFL learners ( 4th semester) US university	(1) direct correction (2) code with error log	10 weeks. 5 in-class essays.	(2) improved in accuracy. (1) made more errors. No sig. difference between groups.	Conflation of treatment
Robb, Ross, & Shortreed (1986)	134 EFL freshman students in English writing classes at a Japanese university	(1) direct correction (2) code (3) underlining (4) marginal tally of errors.	9 months. revision required	Yes. No sig. differences between the WCF types. Correction had not adverse effect on fluency.	Truscott argued that (4) was in effect a control group. However all groups spent a lot of time on editing and grammar-focused exercises.
Frantzen (1995)	44 U.S. college students of 3rd year Major Spanish content course	(1) daily grammar review and direct WCF (2) WCF by circling or underlining	15-week semester. 4 in-class essays & 5 at-home compositions	Yes. (1) sig. outperformed (2) on the grammar-focused test but not on the integrative one	Conflation of treatment
Frantzen & Rissell (1987)	22 4 <sup>th</sup> semester students of Spanish at US university	circling	1 semester. 3 essays. 10 minutes in-class revision for each essay	Yes	

Ferris (1995)	30 ESL learners US university	(1) selective indirect (2) underlining	1 semester	Improvement but inconsistent in some errors categories and essays	
Mantello (1997)	Grade 8 beginner-level students of French in Canada.	(1) coded (2) reformulation	4 months 7 in-class writing. Revision required target: passé compose	Yes. No. sig. between groups.	
Ferris (1997)	47 ESL learners (advanced) US university	Commentary and selective underlining	Short-term	Yes	No new writing examined
Lizotte (2001)	Hispanic bilingual and ESL learner (low-interm.) U.S. community college.	Code	1 semester	Sig. improvement in accuracy and fluency.	
Ferris et al. (2000)	92 ESL learners US university	(1) primarily indirect WCF (2) mostly direct WCF	1 semester	Direct WCF led to more correct revisions than indirect WCF. (1) accuracy subst. better than (2).	Descriptive rather than quasi-experimental

Chandler (2003)	31 1st-2nd-year ESL learners (advanced) US conservatory	1 <sup>st</sup> Study (N=31) (1) underlining with revision (2) underlining with no revision 2 <sup>nd</sup> study (N=36) (1) direct WCF (2) underlining with description (3) description of type (4) underlining	10-week semester. 5 pages autobiography homework assignments	1 <sup>st</sup> study: Accuracy improved sig. more for (1). No sig. difference between (1) and (2). 2 <sup>nd</sup> study: (1) and (4) sig. superior than (2) and (3)	Truscott (2004, p. 342): of the 23 error types listed by Chandler (2003) “about half were not grammar errors
Ferris (2006)	ESL students in US	(1) coded (2) underline	1 semester	sig. improvement in 5 grammar categories	
Sachs & Polio (2007)	1st study 15 adult learners of English 2 <sup>nd</sup> study: 54 participants	1 <sup>st</sup> study: three-stage writing task (a) direct correction (b) reformulation (c) reformulation + think-aloud 2 <sup>nd</sup> study: Same as 1 <sup>st</sup> study but with a control group	30 minutes composing, 15 minutes noticing session, 20 minutes in class revision	In both studies, direct WCF is better than reformulation.	No new piece of writing examined



Hartshorn (2008)	37 ESL students at a US college.	(1) wrote ten-minute paragraph 4 times a week and received coded WCF and error log & WCF on 2 essays. Revisions until error free. (2) feedback on rhetoric & accuracy on four papers in multiple drafts	15- week semester	Sig. improvement for (1).	Conflation of treatments
Santos, López-Serrano, & Manchón (2010)	8 second-level school EFL learners in Spain	(1) direct correction (2) reformulation	2 weeks. 3 treatment sessions	No sig. difference between groups.	Both groups spend 50 minutes per session comparing their texts to WCF. No new text examined
Esteban (2010)	EFL Spanish secondary school pupils (low-intermediate)	Three stages: 1: writing 2: comparing their writing with models 3: revisions		Yes.	Not longitudinal
Vyatkina (2010)	66 students of 1 <sup>st</sup> semester German at Kansas University	(1) direct (2) coded (3) uncoded	16-week semester. Five two-draft compositions of about 70 words each.	Improvement in redrafting but not longitudinally. No sig. difference between groups. WCF did not negatively affect fluency.	

Evans, Hartshorn, & Strong-Krause, (2011)	30 ESL learners US college	codes & error tally sheets, error lists, and edit logs	13-week semester. WCF for paragraphs written within a 10-minute time limit 3-4 times per week.	Yes	Conflation of WCF methods.
---	-------------------------------	--	--	-----	----------------------------

## **Chapter 3. Study Design and Methods**

### **3.1. Introduction**

This chapter provides a description of the research design and procedures employed in this study. The chapter starts by presenting the educational context in which the study is situated. The ensuing sections describe the writing tasks of the participants and the three different WCF treatment options for those tasks. In the second half of the chapter, the methodological tools and choices to finding the answers to the research questions of this dissertation are discussed. The chapter concludes with a summary of the research design.

### **3.2. Participants and instructional context**

#### **3.2.1. Participants**

The 33 participants (16 females, 17 males) for the current study were students enrolled in the fourth semester German classes at the University of Kansas (a large public university) in the spring semester of 2009. They were undergraduate students pursuing a bachelor's degree and are comparable to the subjects in Semke (1980) and Lalande (1980), reviewed in Chapter 2, in terms of linguistic background and institutional setting.

The research project was approved by the Human Subjects Committee of the university (Appendix 14). At the beginning of the course, students signed the consent form to take part in the study (Appendix 15). Those students, who dropped the course and/or did not take the final exam, were eliminated from the data analysis. Students were all volunteers and did not receive any incentive or bonus for participating in the study. However, they were not required to complete any tasks beyond their regular course work, as stated in the research consent forms. Participants were not informed about the exact nature of the study except being told that the researcher would use their writings to evaluate the program and the teaching strategies.

At the beginning of the semester, students completed a background questionnaire (see Appendix 1). The purpose of the background questionnaire is to collect data in order to control for potential differences between the students in different groups in terms of their background and language proficiency in German. All participants were undergraduate students between 19-24 years of age with average of 21 years except one student (C33) who was 34 years old. Moreover, the background questionnaires revealed that most students have not spent any time in Germany; several students have spent a few weeks in Germany either as tourist or in a summer study abroad program prior to taking this course. Only one student from the control group (C33) reported on the background questionnaire that she spent three years in Germany and has an immediate family member who speaks German.

### **3.2.2. Groups and treatments**

The students were enrolled in four intact classes with two graduate student instructors. One instructor was the researcher and the other instructor was a graduate teaching assistant like the researcher. Because the enrollment numbers for two of the four classes were small, those two classes were combined into one treatment group. Hence, students from four classes were assigned to three groups: one group received focused WCF on German case errors; one group received unfocused WCF on a variety of grammar errors, and the control group did not receive WCF on specific grammar errors. Their average age and self-rated ability to learn another language, their self-rated ability to speak and write German on a scale of 5 (with 5 being very high and 1 being very low) is displayed in Table 3.1. The individual data is given in Appendix 2.

**Table 3.1. Participants' age and self-reported proficiency level, average**

Group	Age	Ability to learn another language	Ability to speak German	Ability to write German
Focused (n=11)	21.67	3.22	2.67	3.00
Unfocused (n=12)	21.40	3.40	3.00	3.50
Control (n=10)	22.87	3.86	3.14	3.29

The focused group comprised two class sections since they were smaller in size, and the unfocused group and the control group each consisted of one class section. The researcher taught the focused sections and the other instructor taught the unfocused and control sections. All sections followed the same syllabus and instruction schedule but the instructors could design our own lesson plans. At the beginning of the semester, the researcher met with the other instructor and the department program director, and we agreed upon the WCF options described in the treatment section (section 3.4) for each group.

### **3.2.3. Instructional context**

The course lasted from 16<sup>th</sup> of January to 13<sup>th</sup> of May 2009. The prerequisite for this course was the completion of a third semester German course or placement based on their score on the KU German Language Placement Exam. The fourth semester course is the last course to complete the general language requirement for students of certain majors enrolled in the undergraduate school of the university. The level of language instruction in our course was comparable with the course in Lalande's (1980) study, whereas the course in Semke's (1980) study was 3<sup>rd</sup> semester German course.

The classes met for 50 minutes three times a week except holidays and Spring Break during a 16-week-long semester. The curriculum contained seven short stories from the textbook *Allerlei zum Lesen* by Teichert and Teichert (2005) for 36 hours of class time. It was a content-

based and text-based course in which students were to apply the basic skills learned in the previous three semesters by reading, discussing, and interpreting authentic literary texts in German. The course can be described as CLT (Communicative Language Teaching, e.g., Omaggio-Hadley, 2001) and literacy oriented (Kern, 2000) since the primary focus of this course was for students to experience the German culture through language and text. Students were already taught the basic German grammar in the previous semesters. The objective of the course was to provide students with the opportunity to talk and interact during the class time, as well as to further improve their reading and writing skills. Students were asked to read the short stories at home prior to each class session and bring informed questions to class. They were asked to be prepared to talk, communicate, and use German in class with other students and the instructor. Even though some time was allotted for grammar review on various grammar subjects from the book *Neue Kommunikative Grammatik* by Klapper and McMahon (1997), in-class time was mostly devoted to comprehending and discussing the story in form of pair work and group work. The discussion about the content of the short story which was the topic of the lesson consumed the bulk of the class time where students focused their attention on the content, not the grammatical aspects. Students were usually not corrected during their oral tasks.

### **3.3. Writing tasks for WCF treatments**

#### **3.3.1. General remarks about the writing tasks**

As this dissertation focuses on the acquisition of the German case system evidenced by learners' production, the writing tasks for the students which provided the opportunity for the written corrective feedback (WCF) by the instructors are described here. Learner production could be affected by the types of the tasks they perform (Tarone, 1988) and by the elicitation conditions such as the degree of planning, i.e. the time allotted (Crookes, 1989). Task types and

learner characteristics can also influence a speaker's use of a particular form (Young, 1991). Ellis and Barkhuizen (2005) advise researchers to “provide full and explicit descriptions of the learner productions that make the sample so that the effect of different variables on errors can be examined *post hoc*” (p. 57-58, italic in original) because “the nature of the sample that is collected may influence the nature and distribution of the errors observed” (p. 57).

### **3.3.2. Types of written tasks**

This section describes all writings tasks assigned to students (not only those that served as data collection instruments), on which WCF was performed. There were two types of writing assignments for the course: six short in-class writing assignments and five essay assignments.

For each chapter, students completed a short (about 50 words) in-class writing assignment from the course book. Their written texts were peer-reviewed in class, revised by the students at home and turned in the next class period. Some in-class writing assignments focused on particular grammar features. For example, one in-class writing task asked the students to use past tense and as much subjunctive as possible (Teichert & Teichert, 2005, p. 110). Therefore, students received written CF on these features in focus but they were not asked to revise their in-class writings after the WCF treatment. None of these in-class-writings had a grammar focus on German case system.

Besides the six in-class writing assignments, the syllabus prescribed five composition assignments for homework which were evenly spaced over the semester. Each assignment was the concluding assignment in the respective chapter of the course book (Teichert & Teichert, 2005) and required the students to write a one-page-long essay (about 200 words) outside of the classroom. The essay writing approach practiced by the German department of the University of Kansas follows the process-oriented writing pedagogy, “as many second language and foreign

language programs have gradually moved away from a strictly product-oriented approach to student writing toward writing as a process” (Vyatkina, 2011, p. 63). Written corrective feedback is a device that is often incorporated in this process for the purpose of improving student’s writing “in both redrafting compositions and in writing new ones” (Vyatkina, 2011, p. 63).

### **3.3.3. Topics for the essay assignments**

Similarly to Lalande’s (1980) study, the topics for essay writing assignments were somewhat controlled, such as plot summaries, interpretation, and reflection on stories which had been discussed in class. In order to compose successfully, students needed to have understood the texts and to have some familiarity with the vocabulary of the text. For example, the topic of the first essay assignment was an interpretation task to the story *Türken pflanzen nur Bohnen* by Gisela Schalk (as reproduced in Teichert & Teichert, 2005, pp. 6-7). Several questions given in the course book served as topical cues. The cues were different for each essay to correspond to the thematic content of the story students were discussing at that time.

### **3.3.4. Essay grading**

All groups received a grade for their essay writing assignments. Grading was performed by the respective instructor for the classes according to a rating sheet (see Appendices 3-6: Essay Grading Keys) which was given to students along with the graded essays. For the two treatment groups (focused and unfocused groups), the first draft was worth 70% and the revised final draft was worth 30% of the total essay grade. Half of the grade points for each essay were allocated by a holistic evaluation of content, relevance, creativity, and complexity; and the other half was assigned for grammatical accuracy, word choice, and spelling (see Appendices 3 and 4). In other



words, grading was not based on meticulous counting of errors for any group and students were not evaluated on accuracy alone.

For the control group, fluency was added as a component to compensate the lacking of analytical scores for grammar accuracy. The accuracy measure was included but it was not based on specific grammar categories as in the focused and unfocused groups, instead grammar was evaluated based on the extent the grammar errors impaired meaning (See Appendices 5 and 6). For the control group, the first draft was worth 60% and the revised draft was worth 40% of the total grade for a particular essay. This was designed to encourage students who did not receive concrete grammar-related WCF to nonetheless spend time improving their essays. For all groups, the grades for the five essays constituted 20% of the total grade for the course.

### **3.4. WCF treatments for essay assignments**

#### **3.4.1. WCF Procedure for all groups**

The process-oriented writing approach means that students did not just submit a draft and receive a grade. Instead, students submitted one draft, received WCF according to the methods described in the next sections; they were then to revise their first draft by incorporating the WCF provided by the instructor and to submit the revised draft a week later.

Students in all groups could hand in their typed essays or submit them electronically on the due day designated in the syllabus. Instructors usually provided WCF in a traditional fashion with a pen and returned the marked draft to the student in person. However, sometimes, WCF was provided electronically (see section 3.4.2). In all groups, instructors were allowed to provide comments on content and comprehensibility on students' written work. Students in all groups were asked to resubmit the revised compositions, including the students in the control group who were asked to reread and edit their draft and respond to instructor's general comments

about content and grammar on the draft. All students were allowed to seek teacher or peer assistance and had access to reference books during the writing and editing process. The differences in the WCF treatments are described in the following sections.

### 3.4.2. WCF treatment for the focused group

Students in the focused group (comprised of two sections) also had the option to submit the essays electronically instead of a printed copy in which cases the researcher printed out the emailed essay and provided the WCF by hand (Appendix 8). On a few occasions, when a student submitted the essay late and needed WCF urgently so he/she could start revising the draft in time, the researcher used Microsoft Word comment feature to mark the errors and returned the essays to the students via email attachment (Appendix 9).

Students in this group were not told that of all grammar errors only case errors were corrected and they were not told to pay special attention to cases forms during writing. The focused group received both direct and indirect correction focused on German case errors.

For indirect correction, those phrases or words containing case errors were marked and the letter C, which stands for case error, or the code C-end/C-ending was used for word ending errors; G/C-gen/C-gend was used for gender errors. For example, for the following sentence [3.1], the definite determiner *der* was underlined and marked with G for gender selection; the definite determiner *den* before the noun *Zimmer* was underlined and marked with C-gend to indicate that the student should consider the gender of the noun in the case even though *den* could also be used in the accusative case. The first line contains the student text, the second line the corrected text (the Target Hypothesis, or TH), and the third line the English translation of the TH (see section 4.2.3).

Ex. [3.1], F44E3F

E3F: *Der Feuer hat ein warmes Licht durch den Zimmer geblomm.*

TH: *Das Feuer hat ein warmes Licht in das Zimmer verbreitet.*

Meaning: The fire spread a warm light into the room.

Sometimes, a suggestion for case use was provided. For instance, for the following sentence [3.2], the possessive pronoun *seiner* was underlined and C was placed under the word and the suggestion “*use zu + dative*” was provided by the instructor/researcher:

Ex. [3.2], F51E5D

E5D: *Er dachte, dass die Treppenstufe zuzahlen sehr wichtig war, und er machte das seiner Lebenszweck.*

TH: *Er dachte, dass es sehr wichtig war, die Treppenstufen zu zählen und er machte das Zählen von Treppenstufen zu seinem Lebenszweck.*

Meaning: He thought that it was very important to count the number of stairs steps and he made the stair-steps-counting his life mission.

Sometimes, when a student wrote an incomprehensible phrase or sentence, implicit corrective feedback in the form of open-ended clarification requests (e.g. *What does this mean?*) or prompts such as a question mark or a comment (*Is this an opinion or a fact?*) was provided in the hope of eliciting reformulation from the student. For example, for the following sentence [3.3], the phrase *ihr zulassen* was underlined and a question mark (?) was placed under the line:

Ex. [3.3], F44E1D

E1D: *Er wird zu Gertrud geheiratet und muss ihr zulassen.*

Translation: He was married to Gertrud and must let her.

If a student's essay did not contain many case errors, codes for a small number of non-grammar errors like W (for word choice) or Sp (for spelling) was used for some word choice or

spelling errors which could affect either the intelligibility of the sentence or the application of the case in the sentence. Sometimes direct correction or suggestions for word choice errors and case errors were also provided if the meaning was affected and/or if the researcher believed the student was not able to come up with the right alternative. For instance, for the following sentence [3.4], the word *ein* was underlined by the researcher and marked with C but the instructor also put *um...zu* above the error and crossed out the word *Zu*, because it was feared that the student might have revised the sentence to *Zu einem Punkt machen* if only the code C was marked:

Ex. [3.4], F45E1D

E1D: *So er sagte „Ordnung muss sein.“Zu ein Punkt machen.*

TH: *Deswegen sagte er „Ordnung muss sein“, um einen Punkt zu machen.*

Meaning: So he said „Everything has to be tidy and orderly”, in order to make a point.’

Direct correction was provided especially for the remaining case errors in the revised draft, since the students were already given opportunities to modify their output in response to the coded WCF on the first draft but failed to provide a correct alternative for the highlighted errors in the first draft. Direct correction was also provided when it was difficult to indicate the nature of an error with code only or when one sentence contained overlapping errors. For example, for the following sentence [3.5], the last letter for the word *Toleranteste* is underlined and marked with E and the word *Person* was crossed out by the researcher:

Ex. [3.5], F45E1D

E1D: *Von den drei, Gertrud ist am Toleranteste ~~Person~~.*

TH: *Von den drei, Gertrud ist am tolerantesten.*

Meaning: Of the three, Gertrud is the most tolerant.

### 3.4.3. WCF treatment for the unfocused group

In the unfocused method, WCF was mostly placed interlineally with metalinguistic code and explicit corrections as primary types of feedback. Words or phrases containing errors in the five essays were underlined and a metalinguistic code which provided information about the nature of the error was written below the underline (See a sample in Appendix 10). An error coding sheet explaining what the codes meant was handed out to students (Appendix 7) at the beginning of the semester and also accessible on Blackboard (the web-based course management system for the university) throughout the semester. For example, W stands for inappropriate lexical word choice in context; VF stands for verb form error. In cases where it was difficult to indicate the nature of an error with code only or when one sentence contained overlapping errors, a direct correction was performed as the following sentence correction [3.6] shows. Here the reformulation of *Ich habe sie nicht mehr* was written by the instructor.

Ex. [3.6], U4E4D

E4D: *Ich habe nicht mehr ihre.*

TH: *Ich habe sie nicht mehr.*

Meaning: I don't have it anymore.

It has to be noted that even though the unfocused group had diverse types of errors in their essay drafts corrected, it did not mean a total correction of every error. The instructor chose to ignore some errors for various reasons such as time constraint or when the instructor believed that a particular error was not serious.

### 3.4.4. WCF treatment for the control group

The control section was not informed about the precise location and nature of their errors. In other words, this group received no written corrective feedback to any particular grammar

errors in essays. However, in the effort to avoid putting these students at a disadvantage against other groups, summative comments (mostly short positive comments such as “*Well done; Nice logical ending to the story*” about the content and grammar (e.g. “*Pay attention to conjugation of pl/sing. verbs*”) were provided at the end of the writings (Appendix 11).

#### **3.4.5. Summary of the WCF methods**

In summary, the only difference in WCF treatment between the three groups is focused correction versus unfocused correction versus no correction of grammar errors in the five essay assignments, so the variable of focused and unfocused WCF can be isolated. In-class writing assignments were corrected uniformly for all groups for different grammar foci but not for case errors. In addition, the in-class writings did not have to be revised by students after receiving WCF by the instructors.

#### **3.5. Testing instruments**

Students’ essay writings were included in the qualitative data analysis discussed later (section 3.7.3.). For the quantitative data analysis of this study, students’ performance in the application of German cases was based on the written texts the 33 students produced on three exams, which yielded a corpus of 99 files (33x3). For the testing instruments of the present study, the writing sections of the two unit exams served as the first and second test and the writing section of the final exam supplied data for the third test.

Each unit exam was of 50 minutes duration and the final exam at the end of the semester lasted 2.5 hours. The two unit exams and the final exam for the course were comprehensive in nature and consisted of vocabulary, grammar, reading comprehension, and writing tasks. The writing tasks of exam 1 and exam 2 accounted for about 20% of the total score for each unit exam respectively. Each unit exam was worth 6.67% of the overall grade for whole course. The

writing section of the final exam counted for about 13% of the total points for the final exam. The final exam was worth 10% of the overall grade for the whole course.

All three tests involved picture description tasks. On the written section of the unit exams, students were provided with a picture and five content words (verbs were in infinitive forms). Prior to the exams, students were not informed what picture it was or what focal content words would be. Students were asked to compose a text consisting of no less than five sentences describing what is happening in a given picture. For example, writing section for the first exam shows a picture in a city. A woman and a man were shown waving at a taxi. Students were asked to describe this picture using the following verbs: *winken* ('to wave'), *aufmachen* ('to open'), *vorbeifahren* ('to drive by'), *ankommen* ('to arrive') and *einnicken* ('to doze off'). The second exam was similar to the first exam with changes only in the picture and content words given.

The writing section of the final exam asked students to use past verb tense to write a summary (80-100 words) of *Eine größere Anschaffung* ('A big purchase'), a short story by Wolfgang Hildesheimer (reproduced in Teichert & Teichert, 2005, pp. 138-139), which students had to read independently at home without discussion in classroom prior to the exam.

Different types of errors in these tests were usually underlined. Sometimes, unfocused direct correction was provided. For the data analysis of this dissertation, the corrections provided by instructors on the compositions and exams were not considered. One uniform error counting scheme, which is described in the following sections, was applied to all three groups.

### **3.6. Data scoring**

#### **3.6.1. Choosing the appropriate accuracy measure**

In order to compare the groups' performance, accuracy rate for each group has to be calculated. Accuracy is defined by Housen and Kuiken (2009) as "the ability to produce error-free speech" (p. 461). Skehan (1996b) refers to accuracy as "how well the target language is produced in relation to the rule system of the target language (p. 23). Extending this definition for oral output to written discourse, L2 writing accuracy would be the ability to produce writing that conforms to the grammatical and lexical norms of the target language. This section describes the justification for the methodological choice used to calculate the accuracy rate.

Some researchers such as Wolfe-Quintero et al. (1998) recommend using the *error-free T-unit* as the unit of measurement to determine accuracy, where T-unit was defined as "one main clause plus any subordinate clause or nonclausal structure that is attached to or embedded in it" (Hunt, 1970, p. 4). Wigglesworth (2008) reasons that *error-free clause ratios* may be a much more precise measure of L2 writing accuracy since a piece of writing will almost invariably contain more clauses than T-units. Another method is counting the *errors per 100 words* written. However, those measures "serve as general measures of accuracy" (Ellis & Barkhuizen, 2005, p. 151) and thus are more suited for analyzing an extensive variety of grammatical features and structures. As the current study intends to examine the effect of WCF on one grammar feature, the researcher has adopted the method of *obligatory occasion analysis* to determine the accuracy rate for the use of German cases in participants' writing.

### **3.6.2. Obligatory occasion analysis**

The obligatory occasion method, defined as a means to examine "how accurately learners use specific linguistic (usually grammatical) features" (Ellis & Barkhuizen, 2005, p. 73), is a common method for estimating the extent to which a learner has acquired a feature of the target language. It "involves a comparison between the forms used by learners and target language



norm” because “we need to consider what learners get right as well as what they get wrong” (Ellis & Barkhuizen, 2005, p. 74). Under this method, the obligatory presence of a linguistic feature in a learner’s performance is conditioned by the target language. By counting correct as well as incorrect instances of a specific grammatical or lexical feature, we can better gauge the level of learner’s knowledge.

Krashen (1981) explains that the “[c]orrect use in obligatory occasions means simply that the learner supplied the morpheme where it was required” (p. 11). The underlined portion in the sentence below is an example of two obligatory occasions for the definite article in the nominative case in German:

Ex. [3.7], U18T1

T1: *Die Frau winkt und der Taxi kommt an.*

Meaning: The woman waved and the taxi came.

By the same token, in the following sentence, there is one obligatory occasion for the accusative indefinite article preceding a masculine noun:

Ex. [3.8], C31T1

T1: *Der Mann hat einen Rucksack.*

Meaning: The man has a backpack.

Accuracy is thus determined by counting all obligatory occasions of one grammatical construct in a learner’s text, as well as all correct instances of the same construct (Ellis & Barkhuizen, 2005, p. 83). Put another way, an error occurs when a learner fails to use a morpheme or uses a wrong morpheme when it is needed. This method not only shows the absolute count of the errors, but it also takes into account the relative share of errors in the overall use of a specific feature.

The obligatory occasion analysis was used in the morpheme studies from 1970s to 1980s to investigate the acquisition orders of morphemes both in L1 and in L2 (Ellis & Barkhuizen, 2005, p. 74). It can be used to measure accuracy in a variety of grammar categories as it was done in Frantzen's (1995) study, but it usually involves a small set of morphemes, thus allowing researchers to focus on the acquisition of specific aspects of the language. This is probably why most recent studies investigating focused WCF have adopted this method to measure accuracy rate of these targeted features under investigation since they did not intend to investigate the overall accuracy rate of all grammar features in the learner corpus (e.g. Bitchener et al., 2005; Bitchener, 2008, 2009; Bitchener & Knoch, 2008a, 2008b, 2010; Ellis et al., 2008; Sheen, 2007; Sheen et al., 2009; Yang & Lyster, 2010). The details of the coding taxonomy and procedure are described in Chapter 4.

### **3.7. Data analysis methods**

#### **3.7.1. General remarks about data analysis methods**

Group data from the testing instruments was first subjected to quantitative analyses of both within-group changes and between-group differences. Next, editing behavior of the students in responding to the differential WCF was also examined qualitatively. In addition, students' attitudes toward WCF were explored by utilizing an exit questionnaire. The following sections describe each of these methods.

#### **3.7.2. Quantitative analysis**

The quantitative analysis (Chapter 5) was utilized to answer the following research questions (as stated in Chapter 2):

RQ 1. Does focused WCF have a positive or a negative effect (if any) on learner use of German case morphology over the course of a semester? If so, to what degree?

RQ 2. How do three WCF methods (focused, unfocused, and no correction) compare in regard to their efficacy on student writing accuracy in the use of German cases?

RQ 3. Does WCF have a negative impact on the fluency of learner writing?

The analysis of both inter-group and intra-group test data involves the comparison of the groups' performance at the three testing points (T1, T2, T3) to determine if there is any change over the course of the semester (from January to May 2009) in students' performance between the groups and within the same group, respectively. The total error rate (with over a minimum of 7 occasions) at the beginning of the semester was compared with the error rate in the middle of the semester and the end of the semester to determine if there is any variation among the three snapshots and the extent of variation within a group and between the groups.

To achieve this goal, the overall error rate in German cases across the three test occasions was subjected to statistical analyses and the results were illustrated by line graphs and tables. The current study adopts the quantitative methods recommended by Truscott (2007). Error rate scores were listed for each group and for each test. The mean scores of the overall case error rate for each data set by group and time point (T1, T2, T3) were computed for each group and the resulting three data sets were compared by applying the repeated measures ANOVA method. In order to measure the magnitude of the effect of WCF treatments on reducing case error, the effect sizes were computed. These analyses allowed the researcher to answer research questions 1 and 2.

ANOVA tests were performed to answer the 3<sup>rd</sup> research question as to whether the WCF treatment has any negative effect on the writing fluency. Following Hartshorn (2008) and Vyatkina (2010), fluency was defined in this study as the total number of words written on the

tests. The researcher measured the length of each student text in words given by Microsoft Word and performed ANOVAs for these frequencies.

### **3.7.3. Qualitative analysis**

Qualitative analysis (Chapter 6) was utilized to answer the following research questions (as stated in Chapter 2):

RQ 4. Is any category in the German case morphology more amenable to WCF?

RQ 5. How did the learners in different groups respond to different WCF types in revising their essays?

RQ 6. How do different treatment methods affect learners' attitude towards WCF?

To answer RQ4, longitudinal comparisons in different categories (e.g. nominative, dative case etc.) were performed to ascertain if there was any particular subcategory in which students made more progress due to WCF treatments. It is reasonable to presuppose that even if students' overall performance did not change significantly in light of the complexity of the German case morphology, they nonetheless could make progress in some categories. Due to low numbers of obligatory occasions in each category, these comparisons were performed in an exploratory qualitative manner and not analyzed statistically.

To answer RQ5, the researcher looked at how students responded to these types of WCF. The three treatment methods applied in this study effectively offered the participants three levels of assistance through WCF: the control group received minimal assistance on their grammar errors in the form of the summative comments about the grammaticality; the focused group received mainly coded WCF assistance for case errors in the first draft and often direct WCF in the revised draft, and the unfocused group received mainly coded and direct WCF on grammar errors of varying types. The revision behavior of the students was analyzed to determine the

short-term effect of the WCF treatment on their ability to correct their grammar errors in the essay revision process in response to the three types of WCF (coded, direct and summative WCF). This analysis supplemented the quantitative analysis which describes the overall picture of the results where the effect of WCF is viewed from the pooled results of the different groups. In particular, it examined whether students from the control group were able to propose correct alternatives to the incorrect forms not highlighted directly in the draft essays and whether students in the treatment groups were able to correct their errors marked in their original drafts with metalinguistic cues by the instructors. The test results “only indicate the level of development already attained” (Lantolf & Thorne, 2007, p. 206). In contrast, the examination of learners’ successful correction and the unsuccessful revision attempts when editing their drafts can help to identify the gap between what learners should achieve and what they are actually able to achieve, thus generating a dynamic assessment which “provides information on actual and potential development” (Thouësny, 2011, p. 25). According to Thouësny (2011), students’ interaction with the provider of the WCF is “negotiable in the sense that learners can accept or ignore the assistance” (p. 63). The written CF provided was interactive in nature because feedback was provided not only to justify the grade given to a particular writing but with the aim of guiding learners in improving their performance in the future, thus student’s response to this kind of assistance is desired.

To answer RQ6, students’ attitudes toward WCF were examined. For that purpose, an exit questionnaire written in English with a combination of closed-item and open-ended questions was administered toward the end of the semester (Appendix 12). Following Loewen et al. (2009) and Vyatkina (2011), the responses were analyzed qualitatively, and emerging patterns were identified and categorized. The attitude questionnaire responses were organized in tables

displaying the numbers of responses and percentages of the possible responses per group to each question. These tables and accompanying illustrative quotes are analyzed in Chapter 6. The analysis of the students' questionnaire responses reveals if there are any differences between the groups and if the three treatment methods affect students' attitude toward these WCF treatments options. The researcher was especially interested to know if the unfocused group felt overwhelmed by the unfocused WCF and if the focused group and control group felt they needed more WCF.

### **3.8. Summary**

The thirty-three participants of this study were the university students in the 4<sup>th</sup> semester German course. They were divided in three groups for the three WCF treatment options: focused WCF on German case errors, unfocused WCF on a variety of grammar errors, and no WCF on specific grammar errors. Students' writing tasks for the three WCF treatments were five essay assignments. Their performance in the application of German case morphemes was measured in written texts they wrote as a part of three exams. The obligatory occasion analysis was chosen for measuring the accuracy rate for the German case morphemes. Quantitative between-group and within-groups analyses to find answers to the research questions 1-3 were performed. Changes in error rates for specific case categories were explored qualitatively in response to research question 4. The essay revision behavior of the students was examined to explore students' responses to different WCF methods and to answer research questions 5. In addition, students' affective disposition toward WCF was analyzed through their answers on the exit questionnaires to answer research question 6. The next chapter will describe the German case error taxonomy and the annotation procedures used for the study.

## **Chapter 4. Data Taxonomy and Coding**

### **4.1. Introduction**

This chapter presents the German case error classification developed by the researcher for this study. Several methods for categorizing German case morphemes used in previous studies were either incorporated or rejected by the researcher and the reasons are discussed. Much of the categorization scheme proposed here is new and has not been considered by previous studies. The second part of the chapter describes the rules and procedure for annotating the testing data according to the taxonomy. The chapter concludes with a discussion of the inter-annotator reliability which confirmed that the taxonomy is applicable by other researchers.

### **4.2. Case morpheme classification**

#### **4.2.1. Purpose of case error classification**

The case error classification was developed to answer research question 4: Are certain types of case errors more amenable to WCF treatments than others? To answer this question, the researcher developed a taxonomy for German case morphemes, which is described in the following sections. As Brown (2007) points out, learner errors “can be observed, analysed and classified to reveal something of the system operating within the learner” (p.259). Although it goes beyond the scope of this dissertation to give a detailed account of the semantic functions of each case in the German case marking system, of corollary research interest for this dissertation was to find out if students made progress in any particular category in the German case system, which may help to answer the question of what kind of case errors are amenable to WCF treatment. The researcher was also interested in finding out if this progress or the lack thereof demonstrated by our learner corpus bear out the claims by several researchers (e.g. Bardovi-

Harlig, 1995; Doughty & Williams, 1998; VanPatten, 1996, 2003; White, 1998) that code-based grammatical forms with little semantic values are more difficult items for the students to notice and retain than grammatical feature with more semantic value. Furthermore, it is desirable to find out which semantic roles embedded in the German case system are easy and which are difficult for students to grasp and use. The ‘difficult’ categories could be recommended as target for WCF treatment for pedagogical practice.

#### **4.2.2. Principles of developing the error taxonomy**

##### **4.2.2.1. General remarks about the error taxonomy**

German case marking is “conveyed primarily by the article and sometimes by combinations of the article and a suffix on the noun” (Kempe & MacWhinney, 1998, p. 547). Ritterbusch, LaFond, and Agustin (2006) refer to case marking as “the use of distinct forms of affixation on nouns, pronouns, adjectives and determiners to indicate thematic or semantic roles and/or the expression of syntactic agreement” (p. 31). German case errors are generally characterized by incorrect, misplaced definite determiners, or missing and incorrect endings for indefinite determiners, adjectives, and weak nouns. However, developing a classification for case errors is not a straightforward matter since there is no standard case error taxonomy in the literature to the knowledge of the researcher.

An error taxonomy for cases was developed by the researcher for the present study after consulting the German textbooks and reference grammars (DiDonato et al., 2007; Durrell, 2002; Klapper & McMahon, 1997; Schmitt, 2006) as well as studies by Chavez (1996, 2007), Clahsen, Eisenbeiss, Hadler and Sonnenstuhl (2001), Kempe and MacWhinney (1998), Liamkina (2008), Rogers (1984), and Szagun (2004). Categories that did not occur in student writing were not included.



The classification of errors is comprised of a combination of categories consisting of both semantic functional elements and discrete point morpho-syntactic rules since the morphological paradigms that make up the German case system are a combination of a functional system and a code-based system. For example, most weak adjective endings are code-based and do not carry any semantic meanings. On the other hand, many of the uses for the dative case are based on semantics (Liamkina, 2008). Semantic distinction is also expressed by the use of two way prepositions (Gutzmann & Turgay, 2011). For example, there is a clear difference in meaning between *in der* [fem, dat] *Stadt fahren* ‘to drive inside the city’ and *in die* [fem, acc] *Stadt fahren* ‘to drive to the city’.

#### **4.2.2.2. Case errors**

Szagan (2004) assigned ‘the omission of articles’ one error category. For the current study, the researcher did not isolate ‘omission of articles’ as a separate category. Instead, omission of articles was counted in the subcategories for each case in the error classification.

Kempe and MacWhinney (1998) classified the nominative and accusative case in German by the thematic functions of the subject and object. In a timed grammaticality judgment task, they asked their participants to identify which noun in the sentences they heard was the agent or the object based on the case markers of these nouns. For the current study, the researcher included “object” as a subcategory in the accusative case. Error categories in nominative could also be assigned based on the thematic functions of the nouns in the nominative, for example, errors in subject, predicate, etc. However, it is the experience of the researcher that American students usually possess a conceptual understanding of the nominative case in German since it is almost identical with the nominative function in English. Therefore, for the nominative case, the researcher classified error types based on the morphemes and the

choice of definite articles and pronouns. Errors in the *oblique* cases of the accusative, dative, and genitive (Bierwisch, 1967), however, were further classified according to thematic roles. For example, subcategories for the semantic concepts of “*after directional preposition*” and “*recipient*” were created within the dative category.

Rogers (1984) included in the case selection category a subcategory of the case selection after prepositions. For the current study, post-prepositional use was not singled out as one category, but instead was integrated in the subcategories of genitive, dative and accusative categories, respectively. Similarly, post-verbal use was included in the subcategories of dative (dative verb category) and accusative category (accusative object category).

#### **4.2.2.3. Conflation of gender and case errors**

One major methodological issue which arose over the classification of the German case errors was whether to separate gender errors from case errors. Szagun (2004) distinguished between errors of the gender assignment and errors of case selection. One of the examples she gave for errors of gender assignment in the right case is: *du den* [masc, acc] *auto tanken* (correct: *das* [neut, acc] *Auto*, ‘you fill up the car with petrol’) (Szagun, 2004, p.11). Lalande (1980) and Rogers (1984) also distinguished between the gender assignment and case selection.

However, the researcher did not establish separate categories for errors of gender and case for the error taxonomy in the current study for the following reasons.

First, the motivation for separating gender from case presumably stems from the supposition that “‘gender’ is an idiosyncratic diacritic feature of German nouns, the value of which has to be acquired individually for every lexical entry” (Pienemann, 1998, p. 159), whereas case is a rule-governed system. Sick (2006) spoke from the hearts of many German learners when he quipped: „Die unheilige Dreispaltigkeit des grammatischen Geschlechts im

Deutschen bringt jeden, der unsere Sprache lernt, früher oder später an den Rand der Verzweiflung“.<sup>1</sup>

However, the fact is, German case system is also partly based on lexical learning, for instance, the case assignment after prepositions and after certain verbs is based on the individual verbs and prepositions. There is no structural or thematic reason why the verb *gefallen* ‘to please’ requires a dative object. Occasionally, the case assignment is even conventionalized against the general rules (e.g. *trotz allem* ‘in spite of everything’, *einmal die Woche* ‘once a week’). This is probably the reason that Diehl et al. (2000), who examined the acquisition of German nominal morphology (gender, number, and case) by adolescent learners in Geneva, made a distinction between noun phrases and prepositional phrases. However, the authors did not apply the principle of lexical learning and rule learning systematically. More specifically, they did not make a distinction for case assignment after verbs even though they found that these French-speaking learners also used the accusative case to mark the object of verbs like *helfen* ‘to help’. This shows how difficult it is to separate the lexical learning principle from the rule learning principle when categorizing the case morphemes.

In sum, as Bierwisch (1967) noted, “case-, number-, and gender-feature are partly lexicon-inherent, partly base-rule inherent” (p. 255). Consequently, inadequate lexical learning is one of the factors responsible for learners committing case errors (Spinner & Juffs, 2008). The following “various knowledge sources” named by Zock, Franropoulo, and Laroui (1988) necessary for learning the grammar rules of French are also required for the successful application of German cases: “the determination of morphology and syntax requires information

---

<sup>1</sup> ‘The unholy tri-division of the grammatical genders in German brings anyone, who learns our language, sooner or later, to the brink of despair.’ (my translation)

about the referent (number, gender, animacy), text functions (syntactic status of noun-phrase: noun vs pronoun, topicalisation, person)...” (p. 807). The authors further underscored the difficulty of identifying a particular source for learner’s faltering progress: “Given these intricacies it is easy to understand why students so often fail to learn these rules. Modelling their learning is thus a challenging task.” (p. 807). Based on the above reasons, it can be concluded that the motivation for separating gender and case cannot be satisfied.

Second, German case morphology represents a fusion of gender, number and case (Marouani, 2006; Mills, 1985; Spinner & Juffs, 2008; Szagun, Stumper, Sondag, & Franik, 2007; Tracy, 1996). “For unlike, say, Russian, the noun in German is notoriously seldom characterized overtly for gender, even in a secondary fashion; the gender of a noun is established primarily through its association with a certain set of determiner or adjective formatives” (Durrell, 1979, p. 77). As Marouani (2006, p. 17) elaborated: “Die Genusmarkierung an den oben genannten Kategorien fällt mit der Numerus- und Kasusmarkierung zusammen. Die Ansicht der DaF-Didaktiker, die Artikel als Genusmorpheme anzusehen, kann daher nicht aufrechterhalten werden, da im Deutschen die Genusmarkierung nicht unabhängig vom Numerus und Kasus analysiert oder wahrgenommen werden kann”.<sup>2</sup> Marouani came to the conclusion: „Das Genus wird immer nur in Abhängigkeit und in Verbindung mit Kasus und Numerus ausgedrückt; es gibt keine isolierten Genus-Morpheme“ (p. 71).<sup>3</sup>

Third, both incorrect gender assignment and inaccurate case selection can be responsible for the occurrence of case errors. Consequently, it is often difficult to determine if a case error is

---

<sup>2</sup> ‘The gender marking of the above mentioned categories collapses with the number and case marking. Therefore, the opinion of the GFL educators to view articles as gender morphemes cannot be sustained, because the gender marking in German cannot be analyzed and perceived independent of the number and case.’ (my translation)

<sup>3</sup> ‘Gender is always expressed only in dependence of and in connection with case and number; there are no isolated gender morphemes.’ (my translation)

the result of incorrect case selection or incorrect gender assignment error for other cases.

Consider the following example:

Ex. [4.1], C27T1

T1: *Die Frau macht ihr [neut, acc OR masc, nom] Rucksack auf.*

TH: *Die Frau macht ihren Rucksack auf.*

Meaning: The woman opens her backpack.

If the writer believes that *Rucksack* is a neuter noun, then it is a gender error in the right case. On the other hand, if the writer knows that *Rucksack* is a masculine noun, then it is an inaccurate case selection. In other words, we would not know if it is a gender assignment error or case selection error unless we can detect what the writer knows – something which is difficult if not impossible. As Mills (1985) points out: “Both case and gender must be marked, as has been discussed earlier, but they are marked by one form only, so that it is difficult to establish whether an error is due to the selection of incorrect gender or incorrect case, or both” (p. 172). Marouani (2006) also points out “dass es kaum möglich ist, die Kategorien Genus, Numerus und Kasus des Deutschen unabhängig voneinander zu beschreiben” (p. 3).<sup>4</sup>

Lastly, the distinction between gender error and case error is too fine grained for the purpose of the present study as the aim of this dissertation is to determine the effect of written CF on the reduction of case errors and not to present a detailed case error patterns analysis. According to Granger (2003), an effective error annotation system requires that the annotation be *informative* but *manageable*: “it should be detailed enough to provide useful information on learner errors, but not so detailed that it becomes unmanageable for the annotator” (p. 467).

---

<sup>4</sup> ‘that it is almost impossible to describe the categories of gender, number and case in German independently from each other.’ (my translation)

Based on this principle, the researcher decided to code instances of potential gender and case error conflation as case errors only.

#### 4.2.2.4. Adjective ending errors

For most attributive adjectives that should be inflected there are two categories: strong and weak adjective ending types. Clahsen et al. (2001) explained the distinction between the weak and strong adjective endings as follows:

German attributive adjectives carry a portmanteau affix that expresses the grammatical features gender, number, and case. With respect to the morphological expression of these features, two declension classes are commonly distinguished, weak and strong declension ... strong adjective are used without a determiner or a demonstrative are combined with an uninflected determiner, e.g. *(ein) kalter Wein* '(a) cold wine', while adjectives that are combined with a strongly inflected determiner take an affix from the weak paradigm, e.g. *der kalte Wein* 'the cold wine', *mit dem kalten Wein* 'with the cold wine', *mit einem kalten Wein* 'with a cold wine'. (pp. 515-516).

In general, strong adjective endings are necessary to denote the gender of the following noun, whereas weak ending inflections are typically used after determiners which already display the gender of the noun: “While the variables of gender and number have to be marked by the strong endings, weak ending occur only in such context where this marking is already provided for by the preceding articles” (Schmidt, 1990, p. 43). Therefore, errors of the adjective endings for the current study were grouped into weak and strong adjective ending error categories.

The researcher singled out the adjective ending errors because German adjective endings have been found to be very hard for students to gain mastery of (Born, 1985; Dickens, 1983; Kirmann, 1961; Sauer, 1993; Schmidt, 1990; Spinner & Juffs, 2008; Taeschner, 1983). Especially problematic for students are the weak adjective endings which “show a lower degree of typological markedness than the strong ones” (Schmidt, 1990, p. 43). As either an unstressed *-e* or *-en*, they are also not very distinct in sound. Rogers (1984) assigned adjective ending a separate error category, as did Chavez (1996). Again, in Chavez (2007), “the three items *case*

*endings, noun gender, and plural endings* were combined into *nominal morphology*; whereas the item *adjective endings* was left intact and not included under the label of *nominal morphology* because it poses unique challenges to the learners” (p. 548, italics in original). It is interesting to find out if this category also stands out as very difficult to our participants.

#### 4.2.3. Error taxonomy

This section describes the case error classification which is hierarchically arranged from main error categories (nominative, genitive, dative, accusative, adjective endings) to error subcategories. The error examples are taken from the texts students wrote. In order to maintain the confidentiality of the participants, students’ names are removed from the text files and replaced with letters and codes to identify the file, with the first letter indicating the group affiliation. For example, U4T1 indicated that this file was written by the student (#4) in the Unfocused Group (U) and the file is Test1. The possible correct form of the words written by students in German was provided by the researcher. These possible correct forms were referred to by the term ‘target hypothesis’ (TH), which was defined as the “reconstruction of those utterances in the target language” (Ellis, 1994, p. 54). This term was generally accepted in the corpus analysis literature over the term ‘correct form’ since “error annotation implies an interpretation on the part of an annotator” (Lüdeling, Walter, Kroymann, & Adolphs, 2005, p. 3.)

##### (1). Nominative case errors

a) nom-indef-det-masc-neut: Indefinite article *ein*, negative article *kein*, or possessive pronoun (e.g. *sein*, *ihr*) preceding a masculine or neuter noun is missing or incorrectly inflected. These three grammar items were combined into one subcategory named ‘indefinite determiner’ because they “follow an identical declension pattern” (Mills, 1985, p. 179).

- b) nom-indef-det-fem-pl: Indefinite article or possessive pronoun is missing, uninflected or erroneously inflected in connection with a feminine noun or a noun in plural form.
  - c) nom-def-det: Missing or inaccurate determiners which include relative pronoun as the subject in relative clause.
  - d) nom-pron: Incorrect or missing pronoun.
- (2). Genitive case errors
- a) gen-own: Possession or ownership.
  - b) gen-part: As a partitive.
  - c) gen-qual: To qualify, define or relate a noun.
  - d) gen-prep: After prepositions that require genitive.
  - e) gen-noun-end: Missing the strong noun ending “-es / -s” or weak noun ending “-en / -n”
- (3). Dative case errors
- a) dat-recv: Recipient/beneficiary.
  - b) dat-pos: Possession or lost of possession.
  - c) dat-verbs: In connection with certain verbs.
  - d) dat-prep: After prepositions which require only dative.
  - e) dat-stat-prep: After two way stationary prepositions.
  - f) dat-adj: In connection with adjectives.
  - g) dat-noun-end: Noun ending in plural or with weak masculine nouns.
- (4). Accusative case errors
- a) acc-obj: When the noun is the direct object of the verb.
  - b) acc-prep: After prepositions which require only accusative.
  - c) acc-dir-prep: After two-way directional prepositions.



d) acc-noun-end: Ending of weak masculine nouns in accusative.

(5). Adjective ending errors

a) adj-str: Strong ending- in most cases when no definite article is used in connection with the adjectives. Demonstrative pronoun adjectives (e.g. *dieser, diese, dieses*) are included in the strong adjective ending category.

b) adj-weak: Weak ending - uninflected or wrongly inflected weak endings.

c) adj-uninf: Uninflected adjectives (e.g. used in connection with an uncountable noun).

Table 4.1. below summarizes the error types with examples.

**Table 4.1. Error taxonomy with examples**

error type	source	example	target hypothesis	translation
1. Nominative case errors				
a) nom-indef-det-masc-neut	C35E2F	<i>Obwohl, ist er <u>einen</u> Ausländer, er versteht schon.</i>	<i>Obwohl er <u>ein</u> [masc, nom] Ausländer ist, versteht er schon.</i>	Although he is a foreigner, he understands.
b) nom-indef-det-fem-pl	45E2D	<i>Diese ist <u>ein</u> sehr gut Gesichte.</i>	<i>Dies ist <u>eine</u> [fem, nom] sehr gute Geschichte.</i>	This is a good story.
c) nom-def-det	U7T1	<i>Kommt der Taxi an, <u>den</u> langsamer geht und stoppt.</i>	<i>Das Taxi, <u>das</u> [neut, nom] langsamer geht und stoppt, kommt an.</i>	The taxi, which slows down and stops, arrives.
d) nom-pron	F52T1	<i>Sie sind im <u>eines</u> Großstadt, weil <u>_____</u> viel Taxi sehen.</i>	<i>Sie sind in <u>einer</u> Großstadt, weil <u>wir</u> [pl, nom] viele Taxis sehen.</i>	They are in a big city, because we see a lot of taxis.
2. Genitive case errors				
a) gen-own	U17T2	<i>Ich denke alle Geschenke <u>des</u> Familie öffnen konnte.</i>	<i>Ich denke, ihr könnt alle Geschenke <u>der</u> [fem, gen] Familie öffnen.</i>	I think you could open all presents of the family.
b) gen-part	U17T3	<i>die Tur <u>den</u> Taxi</i>	<i>die Tür <u>des</u> [neut, gen] Taxis</i>	the door of the taxi
c) gen-qual	U07T3	<i>Später kam der Vetter <u>der</u> Erzähler zu Hause.</i>	<i>Später kam der Vetter <u>des</u> [masc.gen] Erzählers zu dessen Haus.</i>	Later, the cousin of the storyteller came to his house.
d) gen-prep	C34T2	<i>trotz <u>die</u> frühe Uhr</i>	<i>trotz <u>der</u> [fem, gen] frühen Stunde</i>	despite of the early hour
e) gen-noun-end	U17T3	<i>die Tur <u>den</u> <u>Taxi</u></i>	<i>die Tür <u>des</u> <u>Taxis</u> [neut, gen]</i>	the door of the taxi

3. Dative case errors				
a) dat-recipient	C33T3	<i>Er möchte <u>der</u> Erzähler die Lokomotive verkaufen.</i>	<i>Er möchte <u>dem</u> [masc, dat] Erzähler die Lokomotive verkaufen.</i>	He wants to sell the locomotive to the storyteller.
b) dat-pos	C29T3	<i>Denn, <u>der</u> Erzähler liest in die Tageszeitung, dass die Lokomotive er kauft abhanden <u>der</u> französischen Staatsbahnen war.</i>	<i>Denn <u>der</u> Erzähler liest in der Tageszeitung, dass die Lokomotive, die er gekauft hat, <u>den</u> [pl,dat] französischen Staatsbahnen abhanden gekommen war.</i>	Because the storyteller read in the newspaper that the locomotive he bought was lost by the French railroads.
c) dat-verb	U07T1	<i>Dann winkt ein Mann <u>der</u> Taxi auch.</i>	<i>Dann winkt ein Mann <u>dem</u> [neut, dat] Taxi auch.</i>	Then the man waves at the taxi too.
d) dat-prep	F04T3	<i>Er ging zurück zu <u>der</u> Verkäufer.</i>	<i>Er ging zurück zu <u>dem</u> [masc, dat] Verkäufer.</i>	He went back to the seller.
e) dat-stat-prep	U11E4F	<i>...sah ich ein Preisschild auf <u>ein</u> Geschenke.</i>	<i>...sah ich ein Preisschild auf <u>einem</u> [neut, dat] Geschenk.</i>	...I saw a price tag on a present.
f) dat-adj	U11E4F	<i>Wann wurde ich Alter Weihnachtsmann war <u>ich</u> nicht so glaubwürdig.</i>	<i>Als <u>ich</u> älter wurde, war <u>mir</u> [pron.dat] <u>der</u> Weihnachtsmann nicht mehr so glaubwürdig.</i>	When I got older, Santa was no longer believable to me.
g) dat-noun-end	U11E5F	<i>Er <u>Beamte</u> sagt, die Antwort auf alle Fragen wissen.</i>	<i>Er sagt <u>dem</u> <u>Beamten</u> [masc, dat], dass er die Antwort auf alle Fragen kennt.</i>	He told the clerk, that he knows the answer to all questions.
4. Accusative case errors				
a) acc-obj	C33T2	<i>Sie sind nicht arm und haben <u>kein</u> Hunger.</i>	<i>Sie sind nicht arm und haben <u>keinen</u> [masc, acc] Hunger.</i>	They are not poor and have no hunger.
b) acc-prep	U9E4F	<i>Was wäre Weihnachten sind ohne <u>der</u> Weihnachtsmann?</i>	<i>Was wäre Weihnachten ohne <u>den</u> [masc, acc] Weihnachtsmann?</i>	What would be Christmas without Santa?
c) acc-dir-prep	U11T1	<i>Der Taxi kommt vor <u>dem</u> Mann.</i>	<i>Das Taxi kommt vor <u>den</u> [masc, acc] Mann.</i>	The taxi comes in front of the man.
d) acc-noun-end	C30E2D	<i>In die Geschichte „Verfahren“ bringt der Taxifahrer den <u>Student</u> zu einer Parkbank.</i>	<i>In der Geschichte „Verfahren“ bringt <u>der</u> Taxifahrer den <u>Studenten</u> [masc, acc] zu einer Parkbank.</i>	In the story, 'Lost', the taxi driver took the student to a park bench.
5. Adjective ending errors				
a) adj-str	C33T2	<i>Es gibt ein <u>große</u> Feuer.</i>	<i>Es gibt ein <u>großes</u> [neut, acc] Feuer.</i>	There is a big fire.

b) adj-weak	C30T3	<i>Er fand ein <u>dummer</u> Mann die zu kaufen.</i>	<i>Er fand einen <u>dummen</u> [masc, acc] Mann die zu kaufen.</i>	He found a dumb man to buy it.
c) adj-uninf	C30T2	<i>Die Eltern haben ein großes Haus und <u>vieles</u> Geld.</i>	<i>Die Eltern haben ein großes Haus und <u>viel</u> [neut, acc] Geld.</i>	The parents have a big house and lots of money.

#### 4.2.4. Obligatory occasions taxonomy

The categories for the obligatory occasions in the current study are the same as the error categories. But there is one more subcategory in the occasion taxonomy than in the error taxonomy. This is because there was an occasion subcategory of genitive as adverbial [gen-adv] which was used to express time (e.g. *Er besuchte seinen Vetter eines [gen-adv] Tages*. ‘He visited his cousin one day.’ F52T3), however, there was no error in this subcategory. Therefore, this subcategory was not included in the error taxonomy table.

#### 4.2.5. Frequency of obligatory occasions

One of the limitations of the morpheme studies has been that they restrict their investigations to a small set of grammatical morphemes (Ellis & Barkhuizen, 2005). However, this restriction can be removed “if the researcher was able to identify instruments that ensured a sufficient number of obligatory contexts for each morpheme” (Ellis & Barkhuizen 2005, p. 78). Krashen (1977) is of the opinion that there need to be a minimum of seven obligatory occasions for the analysis of morpheme acquisition orders. Following this criterion, for the quantitative analysis of the current study, when the annotation of any subcategory in the case taxonomy (which will be presented in the next chapter) yielded fewer than seven obligatory occasions for the corpus, the subcategory was either collapsed with other subcategories with similar semantics in the same case or it was not analyzed for change over time for the subcategory for the purpose of the quantitative analysis. For instance, the occasion for [gen-own] was 0 in T1 and only 1 in T2 which does not allow meaningful comparison of the error rate longitudinally, even though the

total occasions for the three tests is seven. The occasions for [gen-part] were also fewer than 7, therefore, these three subcategories - [gen-own], [gen-part] and [gen-qual] - were combined to form one subcategory [gen-own-part-qual] as they are similar in semantics (i.e., they are all used to qualify or describe a noun). The other subcategories in genitive - [gen-adv], [gen-prep] and [gen-noun-end] - which did not yield at least 7 occasions were not combined because they are not similar in semantic concepts. They were not analyzed for change over the semester individually because of the small number of the occasions. However, they were included the general count for the genitive case both for the occasion and errors category. Following the same principle, the subcategories of [dat-poss] were integrated into the subcategory [dat-recipient] because they are interrelated in semantic concepts as the dative subject which suffered the loss of possession can be perceived as the maleficiary which is related to the concept of beneficiary or recipient.

#### **4.2.6. Additional annotation rules**

##### **4.2.6.1. Structure and word choice errors**

Sometimes, it is difficult to define an error because some errors appear to be case errors but they are actually structural errors or word choice errors in essence as the following sentence [4.2] shows:

Ex. [4.2], C29E2D

E2D: *Auch die Aktionen hilft die Sprachbarriere.*

TH: *Auch helfen die Aktionen, die Sprachbarriere zu überwinden.*

Meaning: The actions also help to overcome the language barrier

From the context, it is clear that the student wanted to say ‘The actions also help to overcome the language barrier’ which should be translated into German using an infinitive

phrase. Without regard to structure, it is clear that the writer did not know how to use the verb *helfen* ‘to help’ and did not know that the verb requires the dative object. Therefore, *die* is counted as one error in the *dative in connection with verb* [dat-verb] category.

#### 4.2.6.2. Superfluous or inappropriate preposition

In some cases, the ambiguity in coding occurred because of a superfluous preposition:

Ex. [4.3], (C27T1)

T1: *Die Frau winkt für dem [neut, acc] Taxi.*

TH: *Die Frau winkt dem Taxi.*

Meaning: The woman waves at the taxi.

Here, the preposition *für* is superfluous because in German to express “to wave for something” is *etwas* ‘something’ [dat] *winken* ‘wave’. If the preposition is removed, the usage of the dative case *dem* is correct. However, it was decided to preserve as much students’ text as possible, and the form *dem* was counted as a case error because the preposition *für* ‘for’ requires the accusative case.

#### 4.2.6.3. Determining the cases

Determining the cases sometimes involves deciphering writers’ intentions as shown in the following example.

Ex. [4.4], U17T3

T3: *Hermann nickt der Taxifahrer ein.*

TH: *Hermann nickt dem Taxifahrer zu.*

Meaning: Hermann gives the taxi driver a nod.

It was clear that the writer wanted to say ‘Hermann gives the taxi driver a nod’ even though in German the verbal phrase would be *jemandem* [dat] *zunicken* ‘to nod to somebody’

since *einnicken* means ‘to nod off’. In this case, the incorrect use of the verb *einnicken* ‘to nod off’ is ignored. However *der Taxifahrer* should be in the dative case in conjunction with the verb *zunicken* ‘to nod’. Hence, an error in the dative verb category is counted. Another example highlights how the case is determined when an incorrect conjunction is used:

Ex. [4.5], C31T2

T2: *Er bringt der Drache, wegen der Drache bringt warm.*

TH: *Er bringt den [masc, acc] Drachen, weil der Drache Wärme bringt.*

Meaning: He brings the dragon because the dragon brings warmth.

From the context, the preposition *wegen* ‘because of’ was erroneously used as the conjunction ‘because’, this error was ignored and the words after it *der Drache* ‘the dragon’ was not counted as error. However, the nominal phrase *der Drache* ‘the dragon’ in the main clause was counted as an error in the accusative object category.

If a phrase was incomprehensible and no reasonable target hypothesis for case use could be inferred, the phrase was not annotated:

Ex. [4.6], C29T3

T3: *Die Paar haben dem Regal retten die Kindern.*

For this sentence, only the first definite determiner *die* was annotated and the rest of the sentence was not annotated for either occasion or error.

#### 4.2.6.4. Oversuppliance of morphemes

There are two methods for calculating the error rate under obligatory occasion analysis: the *suppliance in obligatory context* (SOC) analysis and *target-like use* (TLU) analysis. SOC “is used to determine accurate suppliance of morphemes in linguistic environments in which the morphemes are *required*” (Pica, 1984, p. 70). This method was used in classic studies such as

Brown (1973) and Dulay and Burt (1974). In other words, *no* obligatory occasion was created for linguistic environments where the morpheme is *not required*, i.e., there are no zero morpheme obligatory occasions. For instance, in English, there is no obligatory occasion for the morpheme *s* for verb endings in agreement with nouns other than the third singular pronoun (*he*, *she*).

The *target-like use* (TLU) analysis takes errors of oversuppliance into consideration (Pica, 1984). Under the TLU analysis, as in SOC method, no obligatory occasions are created for contexts where the morpheme is not required, i.e. for zero morpheme occasions; however, oversuppliances are counted as errors. Thus, TLU generally produces a lower accuracy score than the SOC analysis (Pica, 1984) because oversuppliances are counted as errors without creating corresponding occasions for those *not required* occasions. According to Pica (1984), taking oversuppliances into account does not necessarily imply that TLU is a more sensitive indicator of learner's proficiency than SOC, but merely that these two methods (e.g. counting oversuppliance vs. ignoring oversuppliance) are measuring different aspects of the learner's morpheme production.

In the corpus of the present study, oversuppliance was only an isolated phenomenon, and its occurrence did not necessarily constitute a case error as in the next example:

Ex. [4.7], U3T3

T3: *Mann war im Dorfwirthehaus sein und hatte das Bier trinken.*

TH: *Der Mann war im Dorfwirthehaus und trank Bier.*

Meaning: The man was in the village pub and was drinking beer.

Another example is oversuppliance of noun ending in the nominative case:

Ex. [4.8], F53T2

T2: *dieses Kinderem kan also haben ein Räd.*

TH: *dieses Kind hat also einen Puppenwagen.*

Meaning: This child has a doll carriage.

In the last sentence, since the nominal noun ending is not part of the German case paradigms, this kind of oversuppliance was only considered to infer the pronominal determiner. In this case, the noun *Kinderem* was not intended to express the plural, thus the demonstrative pronoun adjective *dieses* was used correctly. There was no obligatory occasion created for noun endings in the nominative case and zero-articles. In general, for the present study, the oversuppliance was not counted either as error or occasion.

### 4.3. Annotation procedures

To operationalize the obligatory occasion analysis, the researcher followed the basic procedures proposed by Ellis and Barkhuizen (2005), with minor modifications made to fit with the features of the UAM corpus analysis software Version 2.7 (O'Donnell, 2011):

1) Determine which morpheme is to be investigated.

This step was accomplished by the development of the error taxonomy described above.

2) Go through the data and identify obligatory occasions for the use of the case morphemes.

Count the total number of occasion for all morphemes.

For that purpose, students' original texts were exported into the UAM thus creating an electronic learning corpus. Electronic learner corpora (electronic collections of learner texts) have been used for analyzing learner interlanguage since the late 1980s (Granger, 2004), however there are very few corpora of L2 learner German (Belz, 2005). As Leech (1997) points out, corpora are useful only if we can extract knowledge or information from them by means such as adding annotations (p. 4). One of the typical types of corpus annotation is



grammatical tagging which refers to the process of associating a word in the corpus with a label or tag indicating its grammatical class (Leech, 1997). The researcher performed this procedure in UAM by creating one layer for obligatory occasions and populating the layer with the occasion coding scheme.

UAM is not yet capable of automatically analyzing texts written in German (unlike English). Therefore, the researcher went through all the files to identify the *obligatory case occasions* where the grammatical structure of the sentence written by the student required them and labeled them with the occasion categories. After the occasions of all files were annotated, the UAM statistics tool supplied total counts of the number of occasions for all case morphemes.

- 3) Establish whether the correct morphemes are supplied in each obligatory context. Count the number of times they are not supplied.

Instead of counting the correct usage, incorrect usage was counted since it was assumed that errors would be less frequent than accurate uses of the cases and therefore easier to annotate. Analogous to the annotation of the occasions, the researcher went through all the files to identify the errors in each text and labeled them with the error categories. After the errors of all files were annotated, the UAM statistics tool supplied total counts of the number of errors for all case morphemes.

- 4) Calculate the percentage of error rate.

As in Frantzen's (1995) study, accuracy score was determined with this formula:

$$Accuracy\ Rate = \frac{\text{Number of correct suppliance in contexts}}{\text{Total obligatory contexts}} \times 100$$

Computing the ratio of incorrect to correct forms of the case errors was indispensable for the researcher to represent language performance in the use of German cases at a given time.

With this information, the researcher could investigate whether the error rate scores of the particular case's morpho-syntactic form provide enough information to determine the effect of WCF treatments practiced over the semester. Overall case error rate and error rate on each case subcategory was calculated by dividing the number of errors by the number of the occasions and then times the result by 100 to arrive at the percentage of error rate. The accuracy rate used in the discussion of the result section was then computed by subtracting the error rate from 100. The data of the obligatory occasions and errors in each category was arranged in the way that was required by the statistician and subjected to statistical analyses.

#### **4.4. Annotation reliability**

As mentioned above, there were 99 files from the testing instruments. In order to ensure annotation reliability, inter-annotation agreement was performed on a sample of nine files which constituted 10% of the total texts. For that purpose, an ordinal number was assigned to each text and three files from each exam batch were randomly selected by the computer using random selector from the website <http://www.random.org>. The resulting nine files were annotated by another University of Kansas graduate student in German using the error and occasions classifications for this study. The second annotator did not simply double check the researcher's annotations; rather, she independently completed the occasion and error annotation on a data subset. This procedure is considered more robust for learner error annotation (Meurers, 2011).

Following Brants (2000) and Lu (2010), inter-annotator agreement was computed using the metrics of precision, recall, and F-score, as in [4.9] through [4.11]. A1 and A2 denote the analysis by the first annotator (the researcher) and the second annotator respectively with the following formulas:

$$[4.9] \textit{ Precision} = \frac{\textit{Number of identical structures in A1 and A2}}{\textit{Number of structures in A1}}$$

$$[4.10] \text{ Recall} = \frac{\text{Number of identical structures in A1 and A2}}{\text{Number of structures in A2}}$$

$$[4.11] F - \text{score} = \frac{2 * (\text{Precision} * \text{Recall})}{\text{Precision} + \text{Recall}}$$

The result of the inter-annotator agreement is displayed in the Table 4.2.

**Table 4.2. Inter-annotator agreement on case category occasions and errors**

Occasion Category	Counts			Inter-annotator agreement		
	A1	A2	Identical	Precision	Recall	F-score
nom-indef-det-masc-neut	9	8	8	0.89	1.00	0.94
nom-indef-det-fem-pl	5	9	5	1.00	0.56	0.71
nom-def-det	55	57	55	1.00	0.96	0.98
nom-pron	18	20	18	0.92	1.00	0.95
gen-part	1	2	1	1.00	0.50	0.67
gen-qual	2	1	1	0.00	1.00	0.67
gen-prep	2	2	2	1.00	1.00	1.00
gen-noun-end	4	4	4	1.00	1.00	1.00
dat-verb	3	3	3	1.00	0.50	1.00
dat-prep	11	9	9	0.82	1.00	0.90
dat-stat-prep	16	16	16	1.00	1.00	1.00
dat-noun-end	1	2	1	1.00	0.50	0.67
acc-obj	37	28	28	0.76	1.00	0.86
acc-prep	4	4	4	1.00	1.00	1.00
acc-dir-prep	4	5	4	1.00	0.80	0.89
acc-noun-end	6	6	6	1.00	1.00	1.00
adj-str	6	5	5	0.83	1.00	0.91
adj-weak	6	7	6	1.00	0.86	0.92
<b>Total</b>	190	188	176	0.93	0.94	0.93
Error category	Counts			Inter-annotator agreement		
	A1	A2	Identical	Precision	Recall	F-score
nom-indef-det-fem-pl	0	2	0	0.00	0.00	0.00
nom-def-det	4	5	4	1.00	0.20	0.33
gen-part	1	1	1	1.00	1.00	1.00
gen-noun-end	2	2	2	1.00	1.00	1.00
dat-verb	3	3	3	1.00	1.00	1.00
dat-prep	11	7	7	0.64	1.00	0.78

dat-stat-prep	12	15	12	1.00	0.80	0.89
dat-noun-end	2	0	0	0.00	0.00	0.00
acc-obj	10	10	10	1.00	1.00	1.00
acc-prep	3	2	2	0.67	1.00	0.80
acc-dir-prep	0	3	0	0.00	0.00	0.00
acc-noun-end	0	2	0	0.00	0.00	0.00
adj-str	2	0	0	0.00	0.00	0.00
adj-weak	4	4	4	1.00	1.00	1.00
<b>Total</b>	54	56	45	0.83	0.80	0.82

According to Lu (2010), the most useful measure to look at is the F-score. As the results from Table 4.2 show, the inter-annotator agreement on categories with fair number of frequencies (over 12) were quite high, ranging from 0.89 to 1.00. In the categories with small number of frequencies, one discrepancy could lower the F-score substantially because of the small overall numbers. To resolve the discrepancies, the researcher marked the words missed by the second annotator, highlighted the discrepancies, and asked the second annotator to go over the discrepancies for a second time. By the second count, the second annotator remedied the annotations missed or coded wrong inadvertently in the first count. The remaining discrepancies were mostly due to ambiguous errors. In the end, all discrepancies were resolved by agreement. It must be noted that in most cases, the second annotator agreed with the researcher; and in other cases, both kinds of annotation were decided upon as equally valid. This confirms the validity of the taxonomy developed by the researcher. Examples of the mismatches from the first count are displayed in Appendix 13.

## Chapter 5. Quantitative Data Analysis

### 5.1. Introduction

The previous two chapters presented the methods and tools used to collect, annotate, and analyze the data for this study. This chapter presents the results of the quantitative analyses in order to answer the first three research questions formulated in chapter 2.

RQ 1. Does focused WCF have a positive or a negative effect (if any) on the acquisition of German case morphology and use? If so, to what degree?

RQ 2. How do three WCF methods (focused, unfocused, and no correction) compare in regard to their efficacy on learner writing accuracy in the use of German cases?

RQ 3. Does WCF have a negative impact on the fluency of learner writing?

The quantitative analyses were performed using the two-way repeated measures analysis of variance (ANOVA). The first set of ANOVA was performed in order to test for differences among the three groups in the performance level between the groups at the three test measurements: T1 on Feb. 13, T2 on of March 13, and T3 at May 13 (section 5.2). These three snapshots were linked longitudinally to provide a picture for the comparison of the development patterns for each group in the acquisition of case marking over the course of the semester. The second set of ANOVA analyses looked at the development of each of the three groups when compared with themselves over the course of the semester in terms of their error rate in case-marking over the semester (section 5.3). The third ANOVA was used to determine if WCF had a negative impact on the fluency of the students writing (section 5.4).

## 5.2. Between-group analyses

### 5.2.1. Group comparison for T1

The first research question concerns the effectiveness of different WCF types. It asks whether the focused group which received focused WCF on case errors performed better at the end of the semester in comparison to the unfocused group which received WCF on all kinds of errors, and the control group which did not receive WCF.

In order to answer this question, the baseline level with regard to case accuracy in performance had to be established from which all groups started. Thus, for the first step, the researcher verified whether any initial difference existed in the error rate scores at T1 among the three groups. As a reminder, error rate was measured as the error tokens count divided by obligatory occasion tokens counts. For example, on any one text, three incorrect uses of case forms from ten obligatory occasions meant a 0.3, or 30% case error rate. The results of the mean error rate (*M*) with accompanying standard deviation (*SD*) for T1 are summarized in Table 5.1. The univariate between-groups effects for T1 are displayed in Table 5.2.

**Table 5.1. Descriptive statistics for the whole sample (n=33) at T1**

T1 error rate	N	M	SD	95% Confidence Interval for <i>M</i>		Minimum	Maximum
				Lower Bound	Upper Bound		
Focused	11	.356987	.1948038	.226116	.487858	.0667	.7000
Unfocused	12	.266160	.1615753	.163500	.368820	.0000	.5385
Control	10	.306810	.1613508	.191387	.422234	.1176	.6154
Total	33	.308754	.1721521	.247711	.369796	.0000	.7000

**Table 5.2. Univariate between-groups effects for T1**

Source	Sum of Squares	DF	Mean square	<i>F</i>	<i>p</i>
Between groups	.047	2	.024	.789	.463

As displayed in Table 5.1, the descriptive statistics in SPSS included indicators such as means, standard deviations, and outliers. Table 5.2 denotes that, at T1, the focused group had a higher case error rate (35.6987%) than both the control group (30.681%) and the unfocused group (26.616%). The ANOVA shows that the mean error rate scores between the three groups were not significantly different ( $F = .789, p = .463$ ). The results of this ANOVA indicate that, at the beginning of the semester, the participants were initially at the equivalent level of competency in the use of the German case morphology.

### 5.2.2. Group comparison for T2

The descriptive statistics and univariate between-groups effects for T2 are summarized in Table 5.3 and Table 5.4.

**Table 5.3. Descriptive statistics for the whole sample (n=33) at T2**

T2 error rate	N	M	SD	95% Confidence Interval for <i>M</i>		Minimum	Maximum
				Lower Bound	Upper Bound		
Focused	11	.265239	.1406866	.170724	.359753	.0455	.7000
Unfocused	12	.328844	.1694131	.221204	.436484	.0556	.7000
Control	10	.243005	.1684375	.122512	.363497	.0667	.6154

**Table 5.4. Univariate between-groups effects for T2**

Source	Sum of Squares	DF	Mean square	<i>F</i>	<i>p</i>
Between groups	.045	2	.022	.870	.429

These comparisons of the mean error rate indicated that, at T2, the focused group performed better (26.5239%) than the unfocused group (32.8844%); their error rate was just a little higher than the control group (24.3%). However, Table 5.4 shows that the differences among these three groups' mean error rate scores at T2 ( $F = 0.87$ ,  $p = 0.429$ ) were statistically not significant.

### 5.2.3. Group comparison for T3

The descriptive statistics ANOVA results and univariate between-groups effects for T3 are summarized in Table 5.5 and Table 5.6.

**Table 5.5. Descriptive statistics for the whole sample (n=33) at T3**

T3 error rate	N	M	SD	95% Confidence Interval for <i>M</i>		Minimum	Maximum
				Lower Bound	Upper Bound		
Focused	11	.204421	.1588429	.097709	.311133	.0741	.7000
Unfocused	12	.260022	.1479377	.166027	.354017	.0625	.5385
Control	10	.287568	.1044960	.212816	.362320	.0857	.6154

**Table 5.6. Univariate between-groups effects for T3**

Source	Sum of Squares	DF	Mean square	<i>F</i>	<i>p</i>
Between groups	.038	2	.019	.968	.391

The above Table 5.3 indicates that, at T3, the focused group (20%) outperformed both the unfocused group (26%) and the control group (29%). The focused group made, on average, 5.56%



fewer case errors than the unfocused group, and 8.31% fewer case errors than the control group. The unfocused group made 2.75% fewer case errors than the control group. The ANOVA results show that, at T3, the difference between the three groups in terms of the mean error rate in case marking was statistically not significant ( $F = .968, p = .391$ ).

Table 5.7 summarizes the mean error rate of the three groups with accompanying standard deviations over the three testing occasions.

**Table 5.7. Descriptive statistics for the whole sample across three tests**

	T1 (Feb 13)		T2 (Mar 13)		T3 (May 13)	
	M	SD	M	SD	M	SD
Focused	.356987	.1948038	.265239	.1406866	.204421	.1588429
Unfocused	.26616	.1615753	.328844	.1694131	.260022	.1479377
Control	.30681	.1613508	.243005	.1684375	.287568	.104496

In sum, the results from the three tests data revealed no significant differences between the three groups with respect to their German case marking accuracy at T1, T2, and T3.

### 5.3. Within-group analysis

Although no overall significant results were found among the three groups at each testing point, post hoc multiple comparison tests were performed to statistically examine whether there were differences between specific pairs of variables. Repeated measures ANOVA was performed to examine the over time differences within each of the three groups from T1 to T2 and T3 or from the beginning of the course to its end.

#### 5.3.1. Within-group analysis for the focused group

The following table 5.8 shows the ANOVA result for the focused group.

**Table 5.8. ANOVA for the focused group**

Source	Type III Sum of Squares	DF	Mean Square	F	p	
factor1	Sphericity Assumed	.130	2	.065	3.536	.048
	Huynh-Feldt	.130	2.000	.065	3.536	.048

The focused group produced the target case forms with decreasing error rates, from 35.69% at T1 to 26.52% at T2 and 20.44% at T3. The ANOVA result shows that the focused group evinced significant improvement,  $F(2, .065) = 3.536, p = .048$ , on both *Sphericity Assumed* and *Huynh-Feldt measure* from the beginning to the end of the semester. The partial eta squared statistic ( $\eta_p^2 = 0.261$ ) implies a small effect size. The 2 tailed t-test of the means for T1 and T3 shows significant change with  $p < .05$  (.036). The 1 tailed t-test shows significant change with  $p < .05$  as well. The pairwise comparison also shows a statistically significant difference between T1 and T3 ( $p = .007$ ) for the focused group. The significant gain achieved by the focused group suggests that the WCF had a positive impact on the accuracy of the case morphology. In other words, the answer to our first research question is that focused WCF did help learners to become more accurate in the use of German case morphology over time.

### 5.3.2. Within-group analysis for the unfocused group

Table 5.9 shows the over time development result for the unfocused group.

Table 5.9. ANOVA for the unfocused group

Source	Type III Sum of Squares	DF	Mean Square	F	p	
factor1	Sphericity Assumed	.035	2	.017	2.541	.102
	Huynh-Feldt	.035	1.705	.020	2.541	.112

The above table 5.9 shows that the case error rate for the unfocused group did not change significantly over the semester ( $F = 2.541, p = .102 - .112$ ). T1 – T3 difference cannot be significant because the values are the same: .26 (Table 5.7).

### 5.3.3. Within-group analysis for the control group

The following table 5.10 shows the ANOVA result for the control group.

Table 5.10. ANOVA for the control group

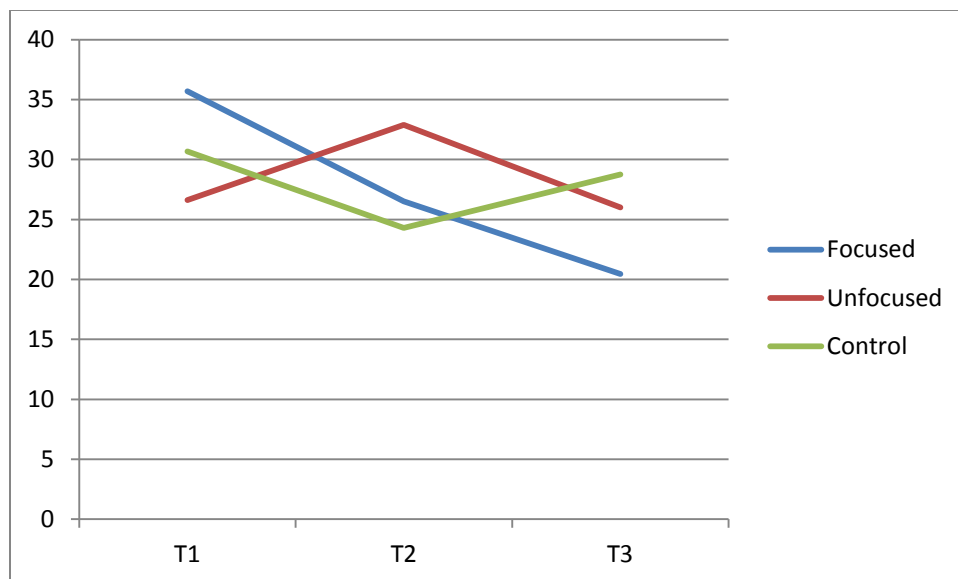
Source	Type III Sum of Squares	DF	Mean Square	F	p	
factor1	Sphericity Assumed	.021	2	.011	.482	.625
	Huynh-Feldt	.021	1.552	.014	.482	.581

Similar to the unfocused group, the ANOVA result for the control group shows that the control group did not change significantly over the semester when compared with itself ( $F = .482, p = .625 - .581$ ). The pairwise comparison between T1 and T3 also shows no significant difference ( $p = .329$ ). The control group performed better at T2 by reducing the error rate of 30.68% from T1 to 22.33% at T2. However, at T3, the mean case error rate for the control group (28.76%) was barely below the error rate at T1 (30.68%), four months earlier.

### 5.3.4. Between-group longitudinal analysis

The three synchronic snapshots between the groups did not reveal any significant differences. However, with three points in time, we could determine the general progression for the three groups, which did reveal differences in the patterns of the development. The performance trend for each group over time is depicted in the line graph below (Fig. 5.1).

**Figure 5.1. Error rate across the three tests**



As Figure 5.1 illustrates, the development of the case error rate for the focused group (blue line) is a straight downward line. In contrast, the general progression in terms of the case error rate for the unfocused group (red line) is an up and down curve, and the progression for the control group (green line) is a down and up curve. In particular, the longitudinal analysis established the following:

1. Opposed to the unfocused and the control group, only the focused group has been found to have a linear progression. The focused group started with the highest error rate, but tended to move toward a lower error rate steadily, decreasing their error rate from T1 to T2 and T3,

going from 35.69% at T1 to 26.52% at T2, and 20.44% at T3. By reducing their case error rate continuously, the focused group reversed its position as the worst performing group at the beginning of the semester to the best performing group at the end of the semester.

2. The unfocused group showed an up and down curve: They started at T1 as the best performing group, but increased their mean error rate from T1 (going from 26.61% to 32.88%), becoming the worst performing group at T2. However, they reduced their mean error rate from T2 to T3 (going from 32.88% to 26%), ending in the second place with less error rate than the control group at T3.
3. The control group showed a down and up curve: They started at the second place at T1, with a higher error rate than the unfocused group. But, at T2, they dropped the error rate from 30.68% at T1 to 24.30% at T2, thus outperforming both the unfocused group and the focused group at T2. However, they were not able to retain the progress made from T1 to T2. At T3, they regressed back to the about same error rate at T1 (26.61% at T1 and 28.7568% at T3), ending the semester as the worst performing group.
4. The progression of both the unfocused and control group could not be represented with gradual straight lines. They either increased or decreased their case error rate at T2 in comparison with T1. The results for these groups at T3 were, again, different from T2 results. However, both groups barely changed their performance level at T3 when compared with their error rate scores at T1.

#### **5.4. Analysis of fluency**

ANOVA tests were performed to answer the 3<sup>rd</sup> research question as to whether the WCF treatment has any negative effect on the writing fluency. Following Hartshorn (2008) and Vyatkina (2010), fluency was defined in this study as the total number of words written on the

tests. The researcher measured the length of each student text in words given by Microsoft Word and performed ANOVAs for these frequencies. The descriptive statistics for the mean text length are presented in Table 5.11.

**Table 5.11. Descriptive statistics for fluency**

	T1		T2		T3	
	M	SD	M	SD	M	SD
Focused	42	8	71	14	86	17
Unfocused	41	12	70	17	82	26
Control	45	8	68	18	95	32

**Table 5.12. Univariate between-groups effects for T1 fluency**

	Sum of Squares	DF	Mean Square	F	p
Between Groups	71.908	2	35.954	.397	.676

For T1,  $p > 0.05$  (0.676), this means that there is no significant difference among the three groups.

**Table 5.13. Univariate between-groups effects for T2 fluency**

	Sum of Squares	DF	Mean Square	F	p
Between Groups	59.774	2	29.887	.113	.894

For T2,  $p > 0.05$  (0.894), this means that there is no significant difference among the three groups.

**Table 5.14. Univariate between-groups effects for T3 fluency**

	Sum of Squares	DF	Mean Square	<i>F</i>	<i>p</i>
Between Groups	916.038	2	458.019	.716	.497

For T3,  $p > 0.05$  (0.497), which means that there is no significant difference among the three groups. The higher mean length for the control group at T3 was mostly due to one outlier who wrote 170 words.

In sum, the ANOVAs revealed no interaction effect between time and treatment in terms of the length of texts written on each of the three tests.

### 5.5. Summary of the quantitative results

The between-group comparisons of the mean case error rate revealed no significant difference between the three groups at the three testing occasions.

The within-group time contrasts (i.e., differences within each group in performance across testing times) showed unsystematic development for the unfocused group and the control group: both the unfocused group and the control group displayed variance at T2, going from lower to higher, or higher to lower error rate scores. However, at the end of the semester, both groups reversed back to their performance level at T1. Only the focused group significantly reduced their case error rate over the course of the semester, suggesting that the provision of focused WCF did have a positive impact on case accuracy, while not negatively impacting fluency.

From the aggregate results, it may be interpreted that focused WCF had a moderate positive influence on the students' acquisition of the German case morphology. The types of WCF condition did not interfere with fluency suggesting that students did not shorten their texts as a reaction to corrective feedback.



## Chapter 6. Qualitative Data Analysis

### 6.1. Introduction

This chapter consists of four sections. The current section presents an overview of the chapter. Section 6.2 examines the error rate and its change over time for the main case categories established in the error taxonomy in order to answer the 4th research question:

RQ 4: Is any category in the German case morphology more amenable to WCF?

The analysis for this question was excluded from chapter 5 (quantitative analysis), because the small number of tokens in the case categories makes the quantitative analysis unreliable. Thus, this research question is explored from the qualitative perspective in this chapter.

Section 6.3 looks at students' behavior in revising their essay drafts, thus answering the 5th research question:

RQ 5: How did learners respond to different types of WCF in revising their essays?

As noted in Chapter 3, all three groups received summative feedback on content and form. In addition, the focused group received WCF on German case errors and the unfocused group received WCF on a variety of German grammar errors. The focused and unfocused WCF was mainly in the form of editing codes which indicated the location and the nature of the errors. The aim of this section is to investigate qualitatively how learners responded to these types of teacher intervention through feedback in the form of summative comments to content and form, and through coded WCF. The editing pattern of three students, one from each group, is profiled.

Learners' response to feedback and the immediate repair of error following the feedback are often referred to in the literature as learner uptake (Panova & Lyster, 2002). The justification

for monitoring learners' varied responses to feedback lies in the fact that knowing how learners responded to these interventions is essential for understanding the short-term and long-term effect of providing WCF. The qualitative analysis of individual student behavior is intended to complement the quantitative statistical analysis which described the overall and standardized picture of the results where the effect of WCF was averaged and viewed from the pooled results of the different groups.

In Section 6.4, the researcher explores the students' attitude toward WCF as revealed in the survey completed by the students at the end of the semester, thus answering the 6<sup>th</sup> research question:

RQ 6: How did the WCF treatment methods affect learners' attitude toward WCF?

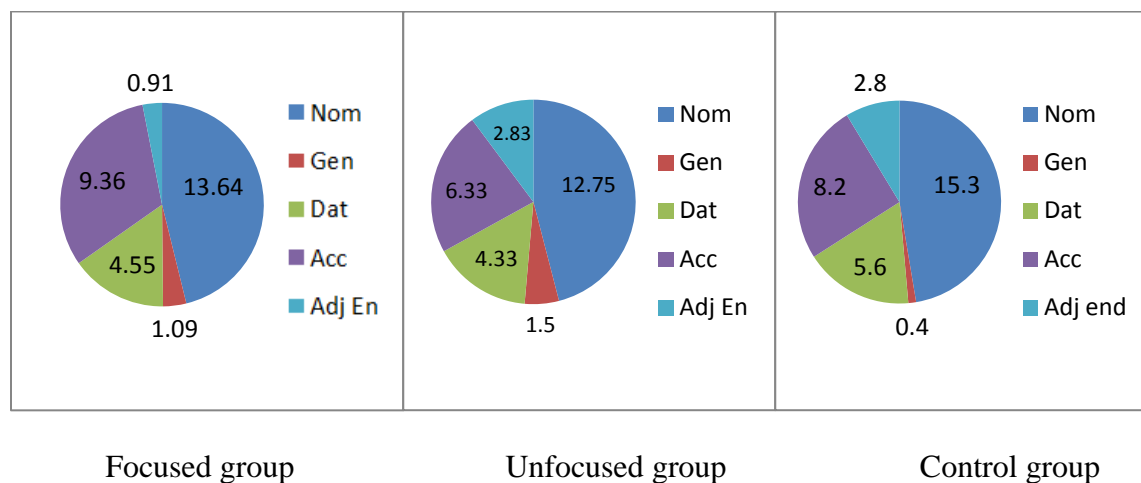
Students' survey answers shed light on their preferences towards the scope and methods of WCF practiced in this study.

Section 6.5 concludes this chapter with a summary and discussion of the qualitative results.

## **6.2. Development of case categories**

### **6.2.1. Between group case usage rate comparison at T3**

Prior to analyzing patterns of case error rate changes, the obligatory occasion counts at T3 were compared to establish whether there were avoidance trends in response to WCF. Figure 6.1 below illustrates the results of the case usage data for the mean obligatory occasion for the five main categories at T3.

**Figure 6.1. Mean obligatory occasion for cases for the three groups at T3**

The above pie charts show that, at T3, all three groups' writings had similar obligatory case occasion make-up: the nominative had the most obligatory occasions in students' writings, and the accusative occasions were more frequent than the dative occasions. There were very few genitive occasions. These usage rates suggest that, compared with the control group, the two treatment groups did not avoid the use of any particular case because of the WCF treatment.

### 6.2.2. The development of the error rate for the main categories

In this section, change of error rate in the five main categories in the case taxonomy (nominative, genitive, dative, accusative, and adjective endings) is examined to look for developmental patterns in case use by the students. Table 6.1- 6.3 and Figures 6.2- 6.4 display the mean error and occasion tokens, and the error rate (percentage of error counts divided by obligatory occasion counts) in the three groups for each of the five main case categories from the three tests.

**Table 6.1. Mean error and occasions tokens and error rate for the focused group**

Category	Error			Occasion			Error rate %		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Nom	0.91	2.27	0.73	6.91	9.91	13.64	13.00	23.00	5.00
Gen	0.00	0.09	0.27	0.18	0.73	1.09	0.00	12.50	25.00
Dat	2.91	1.27	1.64	4.09	4.91	4.55	71.11	25.93	36.00
Acc	0.64	1.73	2.27	1.91	3.82	9.36	33.00	44.24	24.27
Adj. end.	0.27	0.91	0.36	0.73	3.36	0.91	37.50	27.02	40.00

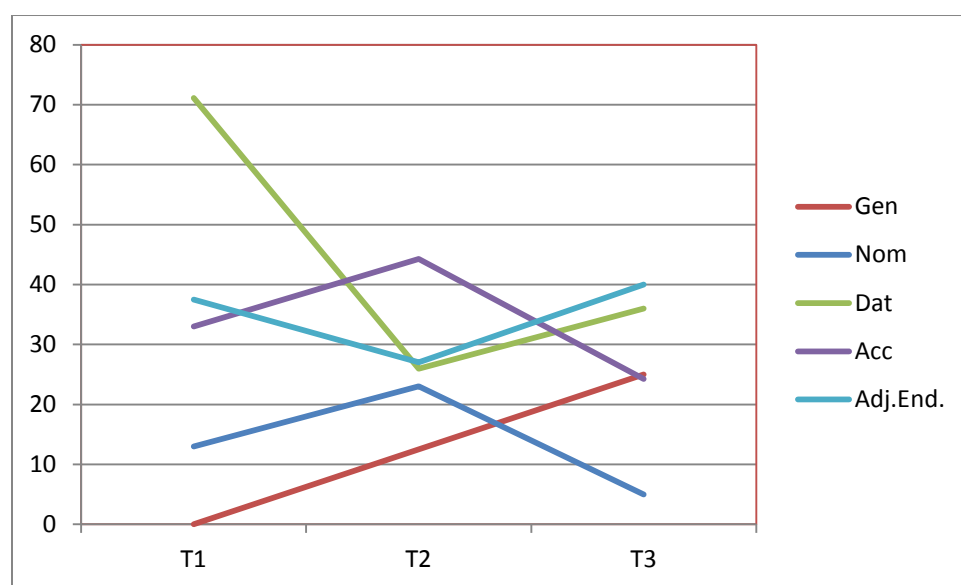
**Figure 6.2. Error rate change in the main categories for the focused group**

Table 6.1 and Figure 6.2 indicate that the focused group decreased its mean error rate in three out of the five categories. The reduction is especially pronounced in the dative category, with 74.75% error rate at T1 dropping to 37.32% at T3. The error rate in the adjective endings category remained about the same; however, with 40% at T3, it is the highest in all categories. The only tangible increase of error rate was in the genitive category where the occasion numbers were especially low.

**Table 6.2. Mean error and occasions tokens and error rate for the unfocused group**

Category	Mean Error			Mean Occasion			Mean Error rate %		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Nom.	0.25	1.25	1.33	6.67	10.25	12.75	4.00	12.00	10.00
Gen.	0.42	0.08	0.58	0.50	0.08	1.50	83.33	100.00	38.89
Dat.	2.33	3.00	2.33	3.08	5.00	4.33	76.00	60.00	54.00
Acc.	0.75	1.33	2.17	1.92	4.17	6.33	39.13	32.00	34.21
Adj. end.	0.00	1.58	1.25	0.58	3.42	2.83	0.00	46.00	44.00

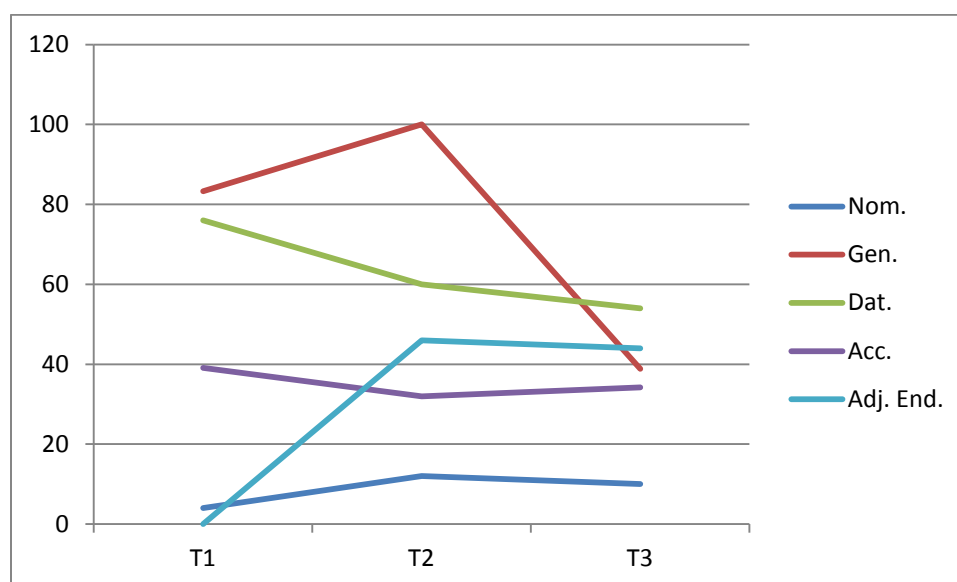
**Figure 6.3. Error rate change in the main categories for the unfocused group**

Table 6.2 and Figure 6.3 above indicate that the unfocused group also decreased its error rate in the dative category over time from 73% at T1 to 54% at T3, though to a lesser degree than the focused group. It also decreased the error rate in the accusative category. However, it increased its mean error rate in the nominative case and adjective endings category. Again, the difference in the genitive category appears big due to the very small number of occasions.

**Table 6.3. Mean error and occasions tokens and error rate for the control group**

Category	Error			Occasion			Error rate %		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Nom	0.30	1.30	1.20	7.40	9.50	15.30	4.05	13.68	7.84
Gen	0.00	0.10	0.10	0.00	0.30	0.40	n/a	33.33	25.00
Dat	2.70	0.90	3.30	4.00	2.50	5.60	67.50	36.00	58.93
Acc	0.90	1.10	3.00	2.20	4.6	8.20	40.91	23.91	36.59
Adj end	0.82	0.83	0.85	1.00	0.97	0.95	82.00	83.00	85.00

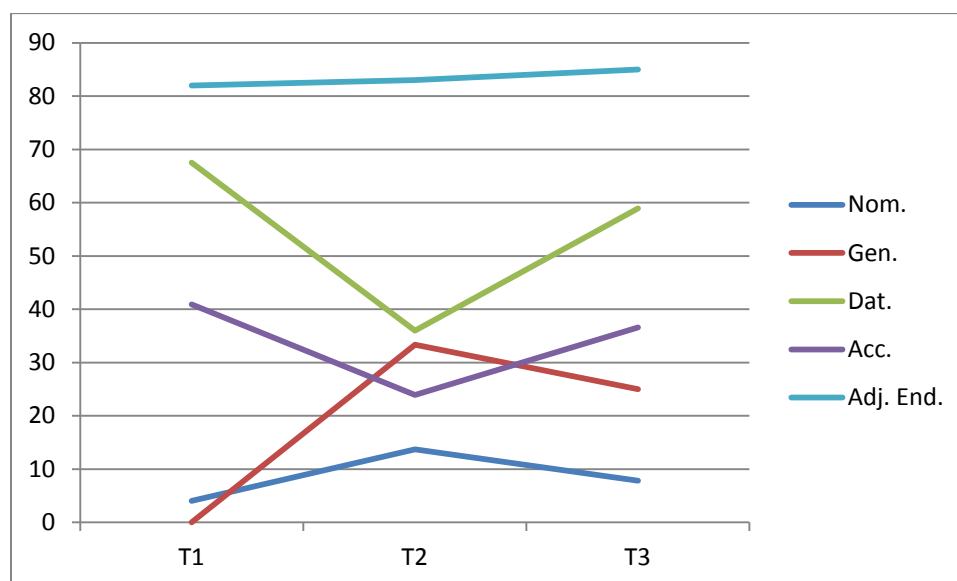
**Figure 6.4. Error rate change in the main categories for the control group**

Table 6.3 and Figure 6.4 demonstrate show that the control group slightly decreased its error rate in the dative and accusative categories. It increased its error rate in the nominative and adjective endings categories. Compared to the two treatment groups, the error rate in the adjective endings is very high for the control group (85% versus 40% for the focused group and 44% for the unfocused group), probably due to the small number of occasions.

### 6.2.3. Mean error rate for functional and lexical categories

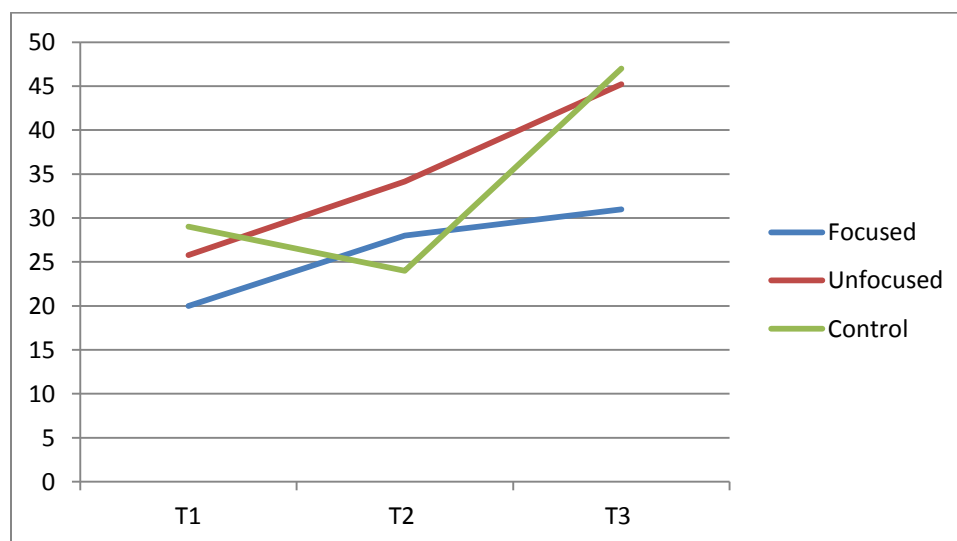
As mentioned in Chapter 3, viewed from the principle of form-meaning association, the German case system is comprised of two broad categories: functional morphology based on the thematic function of the case and lexical categories based on surface grammar properties.

Zaenen, Maling, and Thrainsson (1985) referred to default case assignments of nominative on subjects, the accusative on objects, and the dative on indirect objects as functional or regular case marking. The functional projections for stationary location and directional motion in German prepositional phrase can be deemed as structural (Gutzman & Turgay, 2011). Many German dative uses can be taught from the semantic perspective (Liamkina, 2008). In contrast, the lexical case assignment is decided by a verb, preposition, or adjective.

To examine whether the use of deviant case morphology reflects any gap between rule-driven and lexical-driven learning processes and whether students made more progress in the categories which carry more semantic and functional weight, the researcher has collapsed all the categories which could be considered functional or structural on the one side, and all categories which are deemed formal or lexical on the other side. Thus, the functional categories include: Nom-pron, gen-own, gen-part, gen-qual, dat- recip, date-adj, dat-stat-prep, acc-obj, acc-dir-prep. The rest was lumped into the lexical categories. Table 6.4 presents the mean error rate and standard deviation for the functional categories and Figure 6.5 shows the mean error rate comparison between the three groups at the three tests. Table 6.5 lists the mean error rate and standard deviation for the lexical categories and Figure 6.6 shows the mean error rate comparison between the three groups at the three tests.

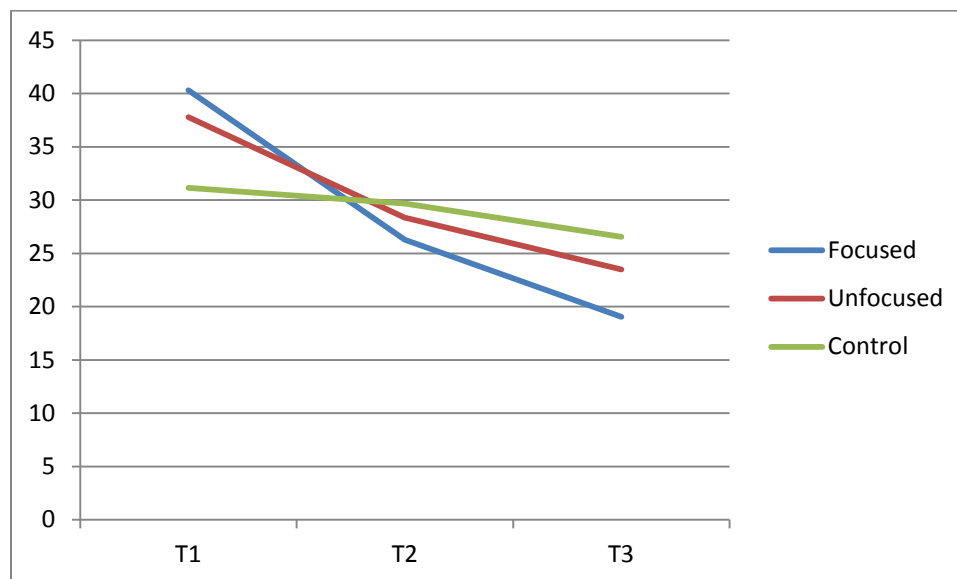
**Table 6.4. Mean error rate and standard deviation for functional categories**

	T1 (Feb 13)		T2 (Mar 13)		T3 (May 13)	
	Error rate	SD	Error rate	SD	Error rate	SD
Focused	20.00	23.53	28.00	29.44	31.00	27.42
Unfocused	25.76	33.82	34.16	22.65	45.21	28.66
Control	29.00	27.85	24.00	21.53	47.00	17.26

**Figure 6.5. Error rate changes for functional categories****Table 6.5. Mean error rate and standard deviation for lexical categories**

	T1 (Feb 13)		T2 (Mar 13)		T3 (May 13)	
	Error rate	SD	Error rate	SD	Error rate	SD
Focused	40.29	22.15	26.29	13.4	19.03	12.71
Unfocused	37.77	25.74	28.34	15.22	23.5	22.89
Control	31.13	20.40	29.68	22.19	26.54	13.13



**Figure 6.6. Error rate changes for lexical categories**

Interestingly, all three groups increased the mean error rate for the functional categories over time, whereas all three groups decreased the mean error rate for the lexical categories over time. However, the focused group showed the smallest error rate increase in the former case and the most drastic progress in the latter case. This result does not support the claims by several researchers (e.g. Bardovi-Harlig, 1995; Doughty & Williams, 1998; VanPatten, 1996, 2003; White, 1998) that code-based grammatical forms with little semantic values are more difficult items for the students to notice and retain than grammatical features with more semantic value.

### **6.3. Students' response to the WCF**

#### **6.3.1. Students' response to summative feedback**

##### **6.3.1.1. Summative feedback on content**

The students' response to summative feedback on content can be illustrated by following examples.

Ex. [6.1], U11E2D

Draft: *Wann der Taxifahrer macht seine Geldbörse auf, dass wann er eine Aussage zu der Student geben ist.*

Revision: *Wenn der Taxifahrer seine Geldbörse macht auf, dass wenn er eine verlockender Vorschlag zu der Student geben.*

TH: *Der Taxifahrer macht seine Geldbörse auf, weil er dem Studenten einen verlockenden Vorschlag machen will.*

Meaning: The taxdriver opens his wallet because he wants to make a tempting suggestion to the student.

The revised sentence was written in response to the instructor's content negotiation: "*Let me know what you wanted to say here!*" It seems that the student's priority was to get the meaning across. But he was not successful in doing so because, without external help, he did not know what conjunction words to use to express his idea.

Even when the instructor's comments were more specific, or in the form of a question, students sometimes chose to ignore parts of the comments. For example, the researcher wrote in a summative remark in an essay (F45E3D): "*Please write more. How is the beginning and the end of the story different in mood?*" This student (F45) did write a little more, however, he did not provide the answer to the instructor question in the revised draft.

### **6.3.1.2. Summative feedback on form**

Students' immediate response to written CF as shown in revisions suggest that summative comments about ungrammaticality in students drafts, in most cases, did not initiate any substantial corrective actions on the part of the learners in the present study. Many students did not incorporate the summative feedback into their revision process. The following examples attest to this behavior.

Ex. [6.2], C27E2D

Draft: *Der Student ist in eine fremde Stadt... Der Taxifahrer entscheidet ihn in ein Park zu verlassen...In das Bild streckt der Taxifahrer seine Hand aus...Es sollt nicht zu hart für dem Student zu gehen irgendwo anderes sein.*

Revision: *Der Student ist in eine fremde Stadt ... Der Taxifahrer entscheidet ihn in einen Park zu verlassen ... In das Bild streckt der Taxifahrer seine Hand aus...Es sollt nicht zu hart für dem Student zu gehen irgendwo anderes sein.*

TH: *Der Student ist in einer fremden Stadt... Der Taxifahrer entscheidet sich, ihn in einem Park zu verlassen...In dem Bild streckt der Taxifahrer seine Hand aus...Es sollte nicht zu hart für den Studenten sein, irgendwo anders hinzugehen.*

Meaning: The student is in a foreign city... The taxi driver decides to leave him in a park ... In the picture, the taxi driver stretches out his hand... It should not be hard for the student to go somewhere else.

The instructor made a summative comment at the end of the essay: “*certain prepositions (i.e. mit, in ...) take specific case*”. The revision shows that this student was not totally indifferent to the instructor's comment as evidenced by his attempt to change *Der Taxifahrer entscheidet ihn in ein Park zu verlassen* to *Der Taxifahrer entscheidet ihn in einen* (Akk, Masc) Park zu verlassen. However, not only was his attempt unfruitful (it should be in the dative, not the accusative case), but he also left other errors (underlined) after the prepositions *in* and *für* unchanged. The following sentences offer more examples of responses to summative WCF.

Ex. [6.3], C29E2D

Draft: *Nachdem der Student er nur dreißig hatte gesagt, brauchte der Taxifahrer zu einem Park der Student.*

Revision: *Nachdem der Student er nur dreißig hatte gesagt, brauchte der Taxifahrer zu einem Park der Student.*

TH: *Nachdem der Student sagte, dass er nur dreißig hatte, brachte der Taxifahrer den Studenten zu einem Park.*

Meaning: After the student said that he only had 30, the taxi driver took the student to a park.

For the above sentence from an essay written by a student (C29) in the control group, the instructor did not mark the errors but made a general comment according to the treatment policy for the control group at the end of the essay: "Watch for case (direct object takes *akk*. Make sure that you always have a second position verb!" However, the student left the sentence unchanged in the revised draft of the essay. The following is another example written by the same student.

Ex. [6.4], C29E2D

Draft: *Obwohl der Taxifahrer ist vertraut mit das, weil er ein Taxifahrer ist.*

Revision: *Obwohl der Taxifahrer ist vertraut mit das, weil er einen Taxifahrer ist.*

TH: *Obwohl der Taxifahrer damit vertraut ist, weil er ein Taxifahrer ist.*

Meaning: Even though the taxi driver was familiar with it, because he is a taxi driver.

For 6.4, the student was not able to change the verb position as reminded by the instructor. Instead, in the revised draft, he used the instructor's reminder about the case at the wrong place and changed the correct nominative case in his original sentence *ein Taxifahrer* in the draft to the incorrect accusative form *einen Taxifahrer*.

These examples show that even if the instructor's summative comments were not totally ignored, students were often not able to utilize them effectively and benefit from this kind of general WCF that was not marked at or near the location where the errors occurred. Without teacher's corrective intervention to each specific error, the same verb position error and the

overuse of the accusative case (underlined below) continued, as evidenced in the fourth essay written by the same student (C29) a month later and at T3 at the end of the semester:

Ex. [6.5], C29E4

Draft: *Obwohl ich war nett, meinen Gesichtsausdruck sagte alles.*

Revision: *Obwohl ich war nett, meinen Gesichtsausdruck sagte alles.*

TH: *Obwohl ich nett war, sagte mein Gesichtsausdruck alles.*

Meaning: Even though I was polite, my facial expression said it all.

Ex. [6.6], C29T3

T3: *Offensichtlich, war dies einen böse Handel.*

TH: *Offensichtlich war dies ein schlechtes Geschäft.*

Meaning: Obviously, this was a bad deal.

Ex. [6.7], C29T3

T3: *Am Ende der Verkäufe zeige eine Ansichtskarte.*

TH: *Am Ende zeigt der Verkäufer eine Ansichtskarte.*

Meaning: At the end, the seller shows a picture.

Another student (C30) in the control group was asked by the instructor to pay special attention to the word order because of the numerous word order errors in her first draft, but she did not correct one single word order error in the revised draft. This does not mean that instructor's general comments about grammar were totally a waste of effort for all students. For example below, in [6.8], even though the student (C30) did not propose any replacement for word order errors, she did attempt some revisions to her essay drafts with the general WCF provided for the first two drafts shown in [6.8].

Ex. [6.8], C30E2

Draft: *Die Bedeutung auf die Geschichte ist....:*

Revision: *Die Bedeutung der Geschichte ist ...*

TH: *Die Bedeutung der Geschichte ist*

Meaning: The meaning of the story is ....

For [6.8], the instructor did not mark the error according to the established WCF policy for the control group, but she made a general remark at the end of the essay: “*to say ‘of’ there is no need for a preposition, just use genitive construction*”. The students paid attention to this remark and successfully replaced the wrong prepositional phrase with a genitive construction in the second draft.

### **6.3.2. Students’ response to coded metalinguistic feedback**

This section examines whether and where students were able to profit from the coded metalinguistic feedback in the revision process and what types of case errors are not amenable to correction if indicated by codes.

#### **6.3.2.1. Successful revisions in response to coded metalinguistic feedback**

The search for the answer to this question yielded a mixed result. It is evident that many students were able to self-correct many German grammar errors with the code alone as examples below show.

Ex. [6.9], U4E4

Draft: *Ich ernannt ihr Gracie.*

Revision: *Ich ernnant sie Gracie.*

TH: *Ich nannte sie Gracie.*

Meaning: I named her Gracie.

Ex. [6.10], U11E2

Draft: *Er lief geradeaus nach die U.S. Botschaft in der Stadt.*

Revision: *Er lief geradeaus zu der U.S. Botschaft in der Stadt.*

TH: *Er lief geradeaus zu der U.S. Botschaft in der Stadt.*

Meaning: He ran directly to the US embassy in the city.

Ex. [6.11], F49E4

Draft: *Ich wurde so aufgeregt, um zu sehen, was mein Onkel mich für Weihnachten kaufte.*

Revision: *Ich wurde so aufgeregt, zu sehen, was mein Onkel mir für Weihnachten kaufte.*

TH: *Ich wurde so aufgeregt weil ich sehen wollte was mein Onkel mir für Weihnachten gekauft hatte.*

Meaning: I got very excited because I wanted to see what my uncle bought me for Christmas.

Ex. [6.12], F53E1

Draft: *Dieses Gesichte zu die Welt ziegen das der Vergangenheit ist fertig, und zusammen sollen in die Gegenwart leben. Es ist besser zu verzeihen und vergessen für das Herz, als ein Groll gegen deinen Landsmann gemacht.*

Revision: *Diese Gesichte zu der Welt ziegen, die Vergangenheit ist fertig, und zusammen sollen in der Gegenwart leben. Es ist besser zu verzeihen und vergessen für das Herz, als einem Groll gegen deinen Landsmann gemacht.*

TH: *Diese Gesichte zeigt der Welt, dass die Vergangenheit vorbei ist und die Menschen sollen zusammen in der Gegenwart leben. Es ist besser zu verzeihen und zu vergessen für das Herz, als einen Groll gegen deinen Landsmann zu heben.*

Meaning: This study shows the world that the past is over and people should live together in the present. It is better to forgive and to forget for the heart, then to keep a grudge against your contryman.

Most replacements made by students were successful. The revision in [6.12] shows that this student (F53) was able to correct four out of the five case errors in response to coded WCF.

### **6.3.2.2. Unsuccessful revisions in response to coded metalinguistic feedback**

On the other hand, coded WCF turned out not to be adequate in some cases because learners were not able to self correct some errors with the editing code alone. The patterns of unsuccessful revisions that emerged are analyzed below.

#### **6.3.2.2.1. Unsuccessful revisions due to the lack of self-monitoring**

This pattern is demonstrated in the following examples.

Ex. [6.13], F53E3

Draft: *In der Anfang von die Geschichte die Familie war sehr frustriert und bedrückt.*

Revision: *Am Anfang des Geschichte, die Familie war sehr frustriert und bedrückt.*

TH: *Am Anfang der Geschichte war die Familie sehr frustriert und bedrückt.*

Meaning: In the beginning of the story, the family was very frustrated and depressed.

In the revised draft, the student (F53) was able to correct one of the two case errors contained in the draft. He also attempted to correct the second case error but was not able to do it successfully. From the unsuccessful revision *des Geschichte*, it can be surmised that the student knew the gender of the noun *Geschichte* is feminine, but used its default nominative form after a dative case preposition in the draft. However, when trying to (appropriately) supply the genitive morpheme after removing the preposition, he either forgot that this noun is feminine, or



he was not sure about the genitive morpheme for feminine nouns. So he used the genitive morpheme for the masculine noun in the revised draft.

Ex. [6.14], U13E2

Draft: *Der Student hat keine Geld ... Der Studenten ist durchschnitt College Student und hat keine Geld.*

Revison: *Der Student hat keinen Geld ...Der Student ist ein Student und hat kein Geld.*

TH: *Der Student hat kein Geld ...Der Student ist ein Student und hat kein Geld.*

Meaning: The student has no money...The student is a student and has no money

For [6.14], at first, we could surmise from the revised sentence that the student (U13) may not know the gender of the noun. But a few sentences later, this assumption was proven wrong because the same student used the right accusative gender marker for *Geld*.

These examples show that, in spite of WCF through metalinguistic cues, even when students know the gender of the noun and the required case marker, they still have to monitor their use of case morphology every time they encounter a noun phrase. If they let their guard down, a mistake occurs. In other words, they have not achieved automaticity in connecting articles/determiners with the case forms of the nouns that they need.

#### **6.3.2.2.2. Unsuccessful revisions due to the conflation of case errors with lexical and structural errors**

Many types of errors, including case errors, do not lend themselves to coded metalinguistic WCF because the intention of the student writer is not clear as shown in [6.15].

Ex. [6.15], U9E2D

E2D: *Ins das Taxi, der Student und der Taxifahrer hätten ein Gespräch.*

TH: *Im Taxi hatten der Student und der Taxifahrer ein Gespräch.*

Meaning: In the taxi, the student and the taxi driver had a conversation.

For the above example, the student might have wanted to use the accusative case with a directional prepositional phrase to express the meaning of ‘after getting into the taxi’. In that case, the direct deletion of the article *das* might be more appropriate. However, because no verb was used, the phrase has to be in the stationary dative. In this case, the instructor might need to add a comment.

Additionally, some errors are seemingly case errors, but they are actually structural errors or word choice errors in nature and, therefore, also are not easily identified with metalinguistic code as the following examples show.

Ex. [6.16], U9E2

E2: *Er hat mit der Student braucht ein billig Hotel angefahren.*

TH: *Es hat mit dem Studenten angefangen, der ein billiges Hotel brauchte.*

Meaning: It began with the student, who needed a cheap hotel.

Ex. [6.17], U11E1

E1: *Auch ein Person wurden „Ordnung muss sein“ hören wann im deiner Job Sie haben schmutzig Arbeit.*

TH: *Auch würde man „Ordnung muss sein“ hören, wenn man in seinem Job schlampig arbeitet.*

Meaning: A person can also hear *Be neat!* if he is sloppy in his work.

Ex. [6.18], U9E2D

Draft: *Die Geschichte ist über einen Jung wen hat sein Geldböse gestohlen.*

Revision: *Die Geschichte ist über einen Jung wen Geldböse hat sein gestohlen.*

TH: *Die Geschichte ist über einen Jungen, dessen Geldbörse gestohlen wurde.*

Meaning: The story is about a boy, whose wallet was stolen.

The revision [6.18] made in response to the WO code under the underlined words not only did not result in the right correction, it made the original sentence even worse by rendering the sentence unintelligible.

### 6.3.2.2.3. Unsuccessful revisions due to the lack of underlying grammatical knowledge

Sometimes, the failure to use the metalinguistic feedback might be due to the lack of underlying grammar knowledge. In such situations, simply indicating the error type was not specific enough, because students did not analyze their errors as indicated by the codes, or they did not know how to correct themselves with coded WCF as [6.19] demonstrates.

Ex. [6.19], U10E1

Draft: ... *aber Achmed ist sehr deutsch trotz seine türkisch Geburt.*

Revision: ... *aber Achmed ist sehr deutsch trotz seinen türkischen Geburt.*

TH: ... *aber Achmed ist sehr deutsch trotz seiner türkischen Abstammung.*

Meaning: ... but Achmed is very German despite of his Turkish heritage.

For [6.19], the student (U10) might not have learnt that the preposition *trotz* requires the genitive case or he might not have acquired the inflectional morphology for the genitive case and therefore could not benefit from the editing code cue.

Ex. [6.20], F44E4D

Draft: *Die junge Frau ist zu Hause und weist ihre Mann die Puppenwagen.*

Revision: *Die junge Frau ist zu Hause und zeigt ihren Mann den Puppenwagen.*

TH: *Die junge Frau ist zu Hause und zeigt ihrem Mann den Puppenwagen.*

Meaning: The young woman is at home and shows her husband the doll carriage.

Although this student (F44) was provided with the error type for the two incorrect case forms in the draft, she was able to correct only one error (*den Puppenwagen* ‘the doll carriage’, Akk, Masc). She was not able to use the dative form to express the beneficiary concept, but used accusative case instead. It appears that the student acquired the notional concept of accusative object, but lacked the understanding of the underlying concept and function of the dative indirect object, and therefore, was not able to use the dative morphology to supply the correct alternative. Because accusative as well as dative convey the concept of an object in German, students in the current study seem to have difficulty distinguishing this semantic function common to both cases as [6.21-6.24] show.

Ex. [6.21], U11E4

E4: *Das Weihnachtsgeschenk dass mir am meisten überrascht und gefreut war meine Katze!*

TH: *Das Weihnachtsgeschenk, das mich am meisten überrascht und gefreut hat, war meine Katze!*

Meaning: The Christmas gift that had surprised and delighted me the most was my cat.

Ex. [6.22], U15E4

E4D: *Ich habe nein zu Angeboten gesagt, wenn ich sie mich nicht leisten kann.*

TH: *Ich habe nein zu Angeboten gesagt, wenn ich sie mir nicht leisten kann.*

Meaning: Ich have said no to offers when I could not afford them.

Ex. [6.23], U6E4D

E4D: *Wenn Leute bieten mich etwas an, wird ich höflich sollten.*

TH: *Wenn Leute mir etwas anbieten, soll ich höflich sein.*

Meaning: When people offer me something, I should be polite.

Ex. [6.24], F45E4

E4: *Ich würde ihn Milch und Plätzchen verlassen.*

TH: *Ich würde ihm Milch und Plätzchen hinstellen.*

Meaning: I would leave him milk and cookies.

#### 6.3.2.2.4. Unsuccessful revisions due to substitutions of noun phrases with prepositional phrases

Students sometimes resorted to lexical means instead of using case morphology to signal the patienthood relations, probably due to the fact that the notion of benefactive indirect object is often conveyed with a prepositional phrase in English. As shown in [6.25-6.27], the students used the preposition *zum* (to) or *für* (for) like it is often used in English, although in German there is no need to use the preposition to express the beneficiary objects. In these cases, if no direct correction was provided, students often were not able to self-correct the errors in the revised draft.

Ex. [6.25], C33E1

E1: *Man muss zum Lehrer oder dem Chef zuhören.*

TH: *Man muss dem Lehrer oder dem Chef zuhören ,*

Meaning: One must listen to the teacher or the boss.

Ex. [6.26], U4E4

E4: *Wenn Leute hatte etwas zu mir anbieten, will ich „Ja, danke!“ sagen.*

TH: *Wenn Leute hatte mir etwas anbieten, will ich „Ja, danke!“ sagen.*

Meaning: Wenn people offer something to me, I will say ‚Yes, thanks‘.

Ex. [6.27], F44E4

E4D: *Eine alte Frau hat einen Puppenwagen für ihre Töchte geschenkt.*

TH: *Eine alte Frau hat ihrer Tochter einen Puppenwagen geschenkt.*

Meaning: An old woman gave a doll carriage to their daughter as a present.

#### 6.3.2.2.5. Unsuccessful revisions due to multiple types of errors

Another situation where coded WCF was not adequate is when one sentence contained multiple types of error, as shown in [6.28].

Ex. [6.28], U4E4

Draft: *Im Grundschule, ich schreibte eine Geschichte über den Ursprünge der Platypus.*

Revision: *Im Grundschule, schriebte ich eine Geschichte über des Ursprünge der Platypus.*

TH: *In der Grundschule habe ich eine Geschichte über die Ursprünge des Schnabeltiers geschrieben.*

Meaning: In the elementary school, I wrote a story about the origins of the platypus.

In the draft [6.28], the instructor underlined ich schreibte with the editing code WO written above the underlined words and also underlined den with C written above the underlined word indicating that this is a case error. This student (U4) was able to correct the word order in the revised draft. But the instructor's code did not alert the student about her tense error in the underlined verb so she left the wrong verb form (*schriebte*) unchanged. She did try to change the case error but made another case error in the process.

#### 6.3.2.2.6. Unsuccessful revisions due to missing prepositions

In the sentences [6.29] and [6.30] shown below, students omitted the prepositions which could be indicated by 'preposition missing' but would be hard to indicate with a code.

Ex. [6.29], C29E1

E1D: *Mit seiner Arbeit dem Ziel, der Taxifahrer macht seine Geldbörse auf, so daß er sein Geld putzen konnte.*

TH: *Mit seiner Arbeit am Ziel angekommen, macht der Taxifahrer seine Geldbörse auf, so dass er sein Geld darin stecken konnte.*

Meaning: With his work at the destination, the taxi driver opened his wallet, so that he could put his money in.

Ex. [6.30], U14E4F

E4F: *Als ich ein Kind war, das habe ich das Weihnachtsmann geglaubt.*

TH: *Als ich ein Kind war, habe ich an den Weihnachtsmann geglaubt.*

Meaning: When I was a child, I believed in Santa.

### **6.3.2.2.7. Unsuccessful revisions due to the lack of WCF on repeated occurrences of the same error**

Most students were not inclined to correct sentences or phrases if they were not marked as shown in [6.31].

Ex. [6.31], U11E2

Draft: *Das ist warum er der Student zu einer Parkbank bringen. Der Taxifahrer möchte der Student nicht.*

Revision: *Das ist warum er den Studenten zu einer Parkbank brachte. Der Taxifahrer möchte der Student nicht.*

TH: *Das ist warum er den Studenten zu einer Parkbank brachte. Der Taxifahrer mochte den Studenten nicht.*

Meaning: This is why he brought the student to a park bench. The taxi driver did not like the student.

For [6.31], the instructor provided two coded corrections (C for Case and E for Ending error) and one direct correction for the verb (*brachte*) in the first sentence but did not mark

anything for the second sentence, probably in the hope that the student might see the correction for the first case errors and would provide correction for the same kind of case error in the following sentence. In response, the student offered in the revised draft the replacement for the two marked errors in response to the coded WCF. However, he left the same kind of incorrect forms (case error and accusative noun ending error) in the following sentence unchanged just because they were not marked. This example demonstrates that this student did not reflect upon the nature of the error that was marked previously.

### **6.3.2.3. Patterns in revision behavior of selected participants**

Overall, the revision behavior of participant U11 (described above) corresponds to the performance curve of the *unfocused* group as a whole. He increased his case error rate from T1 (50%) to T2 (70%), probably due to the fact that he did not reflect upon the WCF. Additionally, because his essays contained many different types of errors besides case, he might not have paid special attention to the case errors. However, he was able to reduce his case error rate from T2 (70%) at T3, going from 70% to 49%, which was just barely under his error rate at T1 (50%). Judging from his test scores, the unfocused WCF had negligible effect on his performance in case marking over the semester.

Student C30 from the control group (described in section 6.2.1.2) is very representative of the editing behavior of the *control* group. She changed her 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> essay drafts only minimally and provided few replacements. She started with a fairly low case error rate at T1 (13%). At T2, her case error rate increased to 17%. At T3, her case error rate was 29% compared to 13% at T1. Oftentimes, the students in the control group left their drafts entirely unchanged, even in cases when the instructor reminded the students to pay attention to certain aspects of the grammar.



In contrast, the observation from the data is that some students in the *focused* group did attain the gains made in response to the focused WCF in revised drafts, even though one time correction was not enough. For example, student F51 wrote in the 1st essay draft:

Ex. [6.32], F51

E1D: *In die Geschichte sehr viele wichtige Themen wird ueber reden ...*

TH: *In der Geschichte werden sehr viele wichtige Themen angesprochen.*

Meaning: In the story, many very important topics are discussed.

The student was able to supply the correct article in the dative case after coded WCF in the revised draft. However, in the 2nd essay draft, he again wrote:

Ex. [6.33], F51E2

Draft: *In die Geschichte "Verfahren" ein Student von Ausland kommt nach ein deutsch-spraechiger Land.*

Revision: *In das Geschichte "Verfahren" kam ein Student vom Ausland nach einem deutsch-spraechigen Land.*

TH: *In der Geschichte „Verfahren“ kommt ein Student vom Ausland in ein deutschsprachiges Land.*

Meaning: In the story "Lost", a student from foreign country comes to a German-speaking country.

After focused WCF, the student was not only able to change the two case errors indicated by the code, but he was also able to change the verb position not highlighted by the instructor. However, he was not able to change the first case error this time.

In the 3rd essay draft, this student finally used the correct article for the noun *Geschichte* in the dative even though he made two accusative case errors:

Ex. [6.34], F51E3

E3: *In der Geschichte Die drei dunklen Koenige hat Borchert dunkelen Themen benutzt, eine hoffnungsvolle Ton zu machen.*

TH: *In der Geschichte „Die drei dunklen Könige“ hat Borchert dunkle Themen benutzt, um einen hoffnungsvollen Ton zu machen.*

Meaning: In the story “The Three Dark Kings”, Borchert used dark themes to make a hopeful tone.

However, in the 4<sup>th</sup> essay draft, the student relapsed and wrote:

Ex. [6.35], F51E4

E4: *In die Geschichte Die Silbergeschite war die reale Geschithte des silbernen Zimmer für Julchen schwer zu verstehen.*

TH: *In der Geschichte „Die Silbergeschichte“ war die reale Geschichte von dem silbernen Zimmer für Julchen schwer zu verstehen.*

Meaning: In the story „The Siver Story“, the real story about the silver room was difficult for Julchen to understand.

Like many students, this student (F51) repeated some of the errors, seemingly randomly. Despite these kinds of frustrating relapses, this student generally responded to almost all of the focused WCF annotations and sometimes even proposed alternatives to unmarked errors in the second drafts throughout the course of his study. His essays manifested an observable decrease in the correction marks with each essay. Fortunately, there is not a corresponding decrease in fluency. His engagement and his receptive behaviors to WCF might be the reason that he was becoming more accurate with respect to case morphology. He reduced his case errors from 27% at T1 to 11% at T3 at the end of the semester.

#### 6.4. Students' attitude analysis

The answers students provided to the attitude questionnaire are presented both in percentages and in actual counts in Table 6.6.

**Table 6.6. Students' answers to the exit questionnaire**

Group	F	U	C	F	U	C	F	U	C
Count	(11)	(12)	(10)	(11)	(12)	(10)	(11)	(12)	(10)
1. Do you carefully read your teacher's comments and corrections?	Yes			Sometimes			No		
	73%	92%	90%	27%	8%	10%			
	(8)	(11)	(9)	(3)	(1)	(1)			
2. What does your teacher comment the most about?	Content			Writing			Grammar		
				9%		10%	82%	100%	90%
				(1)		(1)	(9)	(12)	(9)
3. Do you use your teacher's suggestions when you revise your paper and write the final draft?	Yes			Sometimes			No		
	82%	100%	100%	9%			9%		
	(9)	(12)	(10)	(1)			(1)		
4. Do you use your teacher's suggestions when you write your next paper?	Yes			Sometimes			No		
	73%	100%	60%	18%		20%	9%	8%	20%
	8	12	6	(2)		(2)	(1)	(1)	(2)
5. Do you usually understand your teacher's comments and corrections?	Yes						No		
	91%	100%	90%					8%	10%
	10	(12)	(9)					(1)	(1)
6. What do you do if you do not understand your teacher's comments?	Ask teacher			Guess			Ignore it		
	82%	75%	80%		25%	20%	9%		
	9	9	8		3	2	1		
7. Do you feel that your teacher's comments have helped you to succeed in this course and improved your writing?	Yes			Somewhat			No		
	82%	92%	80%		8%		9%		20%
	9	11	8		1		1		2
8. Do you agree with the following statement: "I found it demoralizing to have each and every one of my errors pointed out to me"?	Agree/Somewhat agree			Somewhat disagree			Strongly disagree		
	9%	8%	10%	8%	10%		72%	83%	90%
	(1)	(1)	(1)	(1)	(1)		(8)	(10)	(9)

9. In what ways do you wish your teacher would change or improve her comments?	Focus on content			Focus on a few grammar errors			Correct all errors		
	9%		40%	27%	17%		27%	58%	40%
	(1)		(4)	(3)	(2)		(3)	(7)	(4)
10. Do you believe that your writing has improved because of the writing practice?	Yes			Somewhat			No		
	91%	92%	40%	9%	8%	30%			30%
	(10)	(11)	(4)	(1)	(1)	(3)			(3)
11. Do you believe that your general language skills have improved because of the writing?	Yes			Somewhat			No		
	91%	75%	40%	9%	17%	40%		8%	20%
	(10)	(9)	(4)	(1)	(2)	(4)		(1)	(2)

In response to the first question (*Do you carefully read your teacher's comments and corrections?*), all students in three groups claimed that they either always or sometimes read the teacher's comments and corrections carefully. To the second question (*What does your teacher comment the most about?*), several students in the unfocused group responded that their instructor corrected the word order errors the most. Most students claimed that they used their teacher's suggestions when they revised their essays. There are also no dramatic contrasts to the questions of 4-7.

It is noteworthy that most students strongly disagree with the statement that correcting every error would be demoralizing to them. This result is similar to the survey conducted by Lalande (1982). 58% of the students in the unfocused group and 40% of the students in the control group also wanted to have comprehensive corrections as a way of improving the WCF, whereas 27% of the students in the focused group suggested comprehensive correction. In other words, these students felt they did not get enough WCF.

It seemed that the most of students in the focused group did not realize that the WCF they received was focused. This is not surprising as there were many case errors in some students' writings. Three students out of 11 students (27%) in the focused group even suggested *focused*

*treatment* as a way to improve the WCF provided. Most of the students in the focused and unfocused group believe that their writing and general language skill improved because of the writing practice, whereas only 40% of the students in the control group answered positively to this question. Three students in the control group expressed the opinion that their writing did not improve because of the writing practice. While no student in the two WCF groups complained, two students in the control group lamented the lack of WCF. One of them commented to the 7<sup>th</sup> question (*Do you feel that your teacher's comments have helped you to succeed in this course and improved your writing?*): *"I'd prefer the old, more critical way of grading because otherwise I go on thinking I did fine with minimal mistakes."* Another student in the control group wrote to the same question: *"No, because she couldn't tell me exactly what I did wrong so I didn't learn anything."*

### **6.5. Summary and discussion of the qualitative results**

This chapter examined the development of accuracy in case categories, student responses to the scope and methods of WCF, their revision behavior, and students' attitude to WCF.

First, the usage rates at T3 (section 6.2.1) suggest that, compared with the control group, the two treatment groups did not avoid the use of any particular case because of the WCF treatment.

Next, with regard to specific case categories, the results (section 6.2.2) showed that all three groups decreased their mean error rate in the dative categories over time. The focused group made the biggest progress in the dative case category. The study by Schulz (2002) shows that US students in even advanced German courses (above 4th semester) have great difficulty with dative construction and achieve only about 50-54% of accuracy rate in dative cases. The dative error rate in the current study ranges from 26%-73%, although the small number of

occasion tokens did not warrant any statistical analysis. Similar to Liamkina's (2008) students, students in this study used prepositions in lieu of dative morphology to circumvent this difficulty. In addition, the findings of this study are consistent with L1 studies by Clahsen (1984), Mills (1985), and Tracy (1986), who found that not only were the accusative forms used more frequently than dative by German children, the former were also used in context in which dative was required. This might suggest that the L2 learners are tapping into some kind of underlying development block for noticing the dative.

With regard to the error rates in the functional and lexical categories (section 6.2.3), consistent with the finding by Born (1985), the error rate in the adjective endings category is relatively high as a percentage of total case errors. The researcher is unable to offer any definitive explanation as to why all three groups increased their error rate in the functional categories and why all three groups decreased their error rate in the lexical categories. Part of the reason lies in the fact that, in order to supply the exact case morphemes for a noun determiner, a student first has to know the gender of a noun. A small portion of the German nouns have clear morpho-phonological or semantic cues to gender class in affixes of the nouns. For instance, most nouns that end in *-ung*, *-keit*, *-heit* are feminine; a noun denoting a person with the suffix *-in* signals that the person is a female (e.g. *die Studentin*). These rules were taught to students in the first semester. Wrong article assignments for these nouns indicate that some students have not fully internalized these rules evidenced by the following examples:

Ex. [6.36], U4T3

T3: *Als kurz darauf der Meldung durch die Tageszeitung ging, ...*

TH: *Als kurz darauf die Meldung durch die Tageszeitung ging, ...*

Meaning: As shortly after the report went through the daily news ...

Ex. [6.37], F53E1

E1: *Dieses Gesichte zu die Welt ziegen das der Vergangenheit ist fertig, und zusammen sollen in die Gegenwart leben.*

TH: *Diese Gesichte zeigt der Welt, dass die Vergangenheit vorbei ist und die Menschen zusammen in der Gegenwart leben sollen.*

Meaning: This story shows the world that the past is over and people should live together in the present.

Previous studies have shown that L2 learners frequently make errors in the acquisition of German noun gender even after considerable exposure to the target language (Born, 1985; Grebe, 1973; Rogers, 1984). Grammatical gender system can be called *transparent* if it adheres to the semantic principle which dictates that “nouns are assigned to a gender according to their meaning”, and the formal principle which dictates that “nouns are assigned to gender according to their form” (Comrie, 1999, p. 458-459). German noun gender assignment, to a large extent, conforms neither to the semantic principle nor to the formal principle. Although there are occasional cues as mentioned above, the gender assignment in German is mostly arbitrary and idiosyncratic (Grebe, 1973). The insecurity regarding gender assignment also directly affects case use in the functional categories. In addition, learners have difficulty expressing appropriate gender agreement marking even if they know the gender of a noun (Spinner & Juffs, 2008). This is because the case forms are “*portmanteau*” (Wittek & Tomasello, 2005). The definite article has six differentiated formatives which lead to morphological variation and uncertainty (Durrell, 1979). However, this study’s findings indicate that focused WCF may lead to greater improvements in the use of German lexical case than other WCF types, which could be explored by future quantitative studies.

Section 6.3 analyzed students' reactions to instructor interventions in the form of summative feedback to content and form, on the one hand, and focused and unfocused WCF with metalinguistic code, on the other hand.

Previous studies suggest that summative comments on students' drafts, in general, are not effective (Ferris 1997; Hillocks, 1986; Hyland, 2000; Muncie, 2000). As noted by McGarrell (2011), "students are frequently unclear on how to use the comments to improve their writings" (p. 140). The comportment of the students in the present study supports this consensus. Even though students did not totally ignore comments to the content, most of them did not edit their drafts based on the instructor's summative comments.

Contrary to Semke's (1980) finding, Ferris (1997) noted that positive comments on content almost never led to any changes for the ESL students in her study. Ferris' (1997) observation also holds true for the current study which found that responding positively with short praise to the content of the writing did not result in more fluency and accuracy. This finding lends support to Cardelle and Corno's (1981) conclusion that praise alone is not effective; it should be combined with suggestions for improvement.

With regard to summative feedback to form, Clark (2007) found that, when instructor markings are less explicit, students sometimes incorrectly incorporated or did not incorporate instructor feedback. The observations of the present study agree with Clark's (2007) findings. It was found that summative feedback on form usually fails to facilitate the learner's ability to identify the location or nature of an error.

The study by Thouësny (2011) found that learners often did not access the assistance in form of the metalinguistic feedback provided to them. Hartshorn (2008) commented that it was not uncommon for a student in his study to fail to provide an acceptable correction or to miss an



error marked by the teacher. The researcher found that these findings are compatible with the findings of this study. According to the three general stages of learner development outlined by Aljaafreh and Lantolf (1994), students are in the stage of *other-regulation* in the Vygotskian sense, if they not able to notice or correct their errors. Most students in the present study required explicit assistance and were not able to propose a replacement to their incorrect forms if no explicit WCF was provided. One probable reason might lie in the fact that summative WCF usually demands more work from learners. Since the individual errors were not marked, students had to look for each error themselves. As Ferris and Hedgcock (1998) noted, not providing any feedback will possibly discourage students to take the need of editing seriously. This kind of general feedback required that the students take a more active role which was probably beyond what the students were willing to assume. Therefore, students in the control group, who did not receive concrete WCF, changed their essay drafts the least. Another possible reason might be that, without concrete assistance, the students either did not notice most of the errors or did not know how to correct them. This is also the reason that students in the focused group generally did not correct other type of grammar errors besides the case errors. In sum, the corrective function of the summary comments was rather weak in light of the fact that this kind of feedback prompted minimal revisions.

Consistent with Ferris' (2006) conclusion, this study also found that students did not ignore teacher's WCF. When WCF annotations were explicit and concrete, students acted upon them in most cases. Most students have tried to incorporate WCF if it was provided at the location of the error. However, they were not able to correct all the marked errors, especially if one sentence contained multiple types of errors. Students' ability also played a role in profiting

from WCF. Some students did not use the metalinguistic cues to reflect on the nature of their errors.<sup>5</sup>

The revision behavior that emerged in the editing process in response to WCF was inevitably different from individual to individual. Some learners appeared receptive to WCF, although quite a few manifested little effort in the revision process if WCF was not specific. Despite of the differences in the corrective feedback incorporation, from the patterns of the three profiled students, it seemed that focused WCF had a positive effect, unfocused WCF had negligible effect on students' acquisition of the case forms. It is also gratifying that the improvement in case morphology shown by the students in the focused group was not accompanied by a drop in fluency.

The qualitative analysis also looked at what types of errors can and cannot be corrected with coded WCF. This undertaking is worthwhile because “[e]xploring what sorts of errors are difficult or easier to correct is extremely informative to language teachers” (Nakazawa, 2006, p. 37). Most students in the study reported that they usually understood teacher's annotations. However, the qualitative analysis of the revisions revealed that metalinguistic WCF cannot be applied effectively to many case errors, which is in line with Vyatkina's (2010) conclusions. For example, it was found that, when students lack the conceptual knowledge of the case function, coded WCF is not effective because students need more explanation and review of the rules. The errors illustrated in section 6.3.2.2 usually did not get corrected by the students if they did not receive direct correction. The examples show that many German grammar errors could not

---

<sup>5</sup> Some remarks about providing WCF with the comment feature of the Microsoft Word processor are in order. On the positive side, using Microsoft Word allows the electronic version to be saved, which is convenient for the instructor to compare changes in revised drafts with the original text. On the negative side, Word comment has a disadvantage in that students might not be familiar with how to edit the commented version.

be indicated by coded WCF and called for direct correction. As a result, even though the WCF policy for the department was to use code for WCF, almost half of the WCF was provided in the form of the direct WCF, especially in the second draft. Just as Nakazawa (2006) commented, “teachers utilize direct feedback more often on the final draft than the preliminary draft” because they “first try to give students an opportunity to correct errors themselves. If students cannot correct errors, then, they provide students with help, direct feedback” (p. 133). In most cases, direct WCF led to successful revision in the second draft because student only had to copy the corrections.

As to the students’ attitudes toward the scope of WCF (section 6.4), most students reported that they took teacher’s WCF seriously and preferred comprehensive error correction. The answers of students suggest that error treatment on German case errors or unfocused WCF did not seem to negatively affect students’ attitude. This notion is strengthened by the fact that most students believed WCF helped them with their writing; and a few students in the control group reported that they did not learn much because they received no WCF.

## **Chapter 7. Discussion and Conclusion**

### **7.1. Introduction**

To conclude this dissertation, the current chapter reviews and discusses the major results obtained through the quantitative and qualitative analyses in light of the research questions. In addition to a reflective discussion of these findings, this chapter pinpoints some constraining factors that need to be addressed when interpreting the results. In consideration of these limitations, recommendations for future research are proposed. Following the discussion of the pedagogical implications of the findings, the chapter concludes the dissertation with the summary of the contributions of the study.

### **7.2. Discussion of the results**

#### **7.2.1. The research questions**

In this section, the results are summarized and discussed vis-à-vis the six research questions. To recapitulate, the six research questions that motivated this study were:

RQ 1. Does focused WCF have a positive or a negative effect (if any) on learner use of German case morphology over the course of a semester? If so, to what degree?

RQ 2. How do three WCF methods (focused, unfocused, and no correction) compare in regard to their efficacy on student writing accuracy in the use of German cases?

RQ 3. Does WCF have a negative impact on the fluency of learner writing?

RQ 4. Is any category in the German case morphology more amenable to WCF?

RQ 5. How did the learners in different groups respond to different WCF types in revising their essays?

RQ 6. How do different treatment methods affect learners' attitude towards WCF?

#### **7.2.2. Focused WCF is effective**

The quantitative and qualitative analyses revealed that focused WCF did not have any negative effect on accuracy of the German case forms in students' writings. Students in the focused group did not write less, nor did they complain about the lack of comprehensive correction. Moreover, students in the two WCF groups did not avoid the use of a particular case category when compared with the students in the control group.

The between-group and within-group analyses revealed that focused WCF was positively correlated with case acquisition development over time. Students in the focused group moved from the worst performing group at T1 to the best performing group at the end of the semester. They significantly decreased their error rate after focused treatment on five two-draft essays.

Truscott (2010) claims that the existing research on grammar instruction shows that “[w]hen learners’ gains are measured by tests of explicit knowledge (formal grammar tests), the treatment is found to be highly effective; when they are measured in terms of ability to use that knowledge in speaking or writing, it is found ineffective” (p. 628). The current study disproved the latter claim by showing improved student performance in writing after receiving focused WCF. Truscott (1996) also suggested that grammar correction is inefficient because it wastes valuable time and resources that could be used for more productive learning activities. However, in this study, the instructor did not engage in any extensive follow up activities concerning WCF and, therefore, did not add to the normal instruction time for the sake of WCF. The students in the present study were not monitored when editing their texts, thus it was not clear how much time and effort each student actually devoted towards responding to the WCF. However, writing and editing activities were assigned as homework in accordance with common foreign language education practices. Thus, the present study exemplifies typical WCF conditions for general foreign language courses. Moreover, it can be argued from a pedagogical standpoint that

allocating only a short period of time to the treatments through focused WCF was a strength of the study.

### **7.2.3. Unfocused WCF is not effective**

The comparison of the three WCF methods (focused, unfocused, and no correction) in regard to their efficacy on student writing accuracy in the use of German cases showed that the unfocused group and the control group did not make much progress whilst the focused group significantly decreased case error rates over the span of four months after 5-10 times of WCF on case errors. In other words, these between-group comparisons informed us that unfocused WCF is not much better than no provision of WCF on the acquisition of German cases. These results for the unfocused WCF are consistent with study by Vyatkina (2010), who found no significant improvements in grammar accuracy in texts written by the beginner learners' of German over the course of a semester when students received comprehensive WCF.

However, in another aspect, this finding of non-efficacy of unfocused WCF does not agree with Semke (1980) and Lalande (1982), whose participant population was similar to the population in the present study.

Semke (1980) reported that all groups including the group who received no WCF made progress in the writing accuracy. By comparison, the unfocused and the control group in the present study did not make much progress in the use of case forms. Part of the reason for this difference could be that in Semke's (1984) study, the writing assignments were in the form of diaries with free writing topics and the test was also in the form of a free writing sample. In other words, students could write on the test what they wrote during practice. Thus, Semke's (1984) result might have been influenced by practice effects. In the present study, the writing topic varied for each assignment and test. The use of different materials for treatment and testing

purposes sets a more conservative standard for evidence of development because it requires learners to generalize any changes that occurred as a result of the treatment tasks to the new contexts presented through the testing tasks (Swain, 2000).

Lalande (1982) reported that, in his study, the group receiving coded unfocused WCF improved their overall accuracy, especially in the German case category. Besides the difference in error categories and in the way that Lalande counted case errors, the divergence of the results might in part be due to the fact that Lalande's coded WCF group also monitored their errors with an error log, whereas the current study isolated WCF as the only factor to be examined.

In the present study, the unfocused group performed similar to the control group in that their case error rate barely changed from the beginning to the end of the semester. This is not surprising because most students in the study have experienced difficulty with the basic types of German morphological and syntactic features. In one short sentence, there could be multiple errors like the following examples show:

Ex. [7.1], C26E5D

E5: *Der Student abgerüft die Polizei. Als der Taxifahrer Gefängnis im war, der Taxifahrer habt der Student Haus ausgeraubt. Er scheint, wie er Freunde nicht hat.*

TH: *Der Student hat die Polizei angerufen. Der Taxifahrer war im Gefängnis, weil er das Haus des Studenten ausgeraubt hat. Es scheint, dass er keine Freunde hat.*

Meaning: The student called the police. The taxi driver was in prison because he robbed the student's home. It seems that he has no friends.

Had the teacher corrected every error, the whole paper would have been covered with red. The researcher holds the view that focused WCF of the kind practiced in this study was manageable and has high ecological validity for GFL students. It has eased the workload for

both the instructor and the students but still triggered a significant improvement in accuracy. Even though the survey indicates that most of the students did not perceive comprehensive WFC as demoralizing, focused WCF was more effective than unfocused WCF especially since students' writing contained many types of errors.

#### **7.2.4. Discussion of small effect size**

This study shows that teacher-provided focused WCF had a positive effect on students' acquisition of German case morphemes. The small effect size and the non-significance of the between the groups results could be attributed to the complexity of German case marking and the educational context which dictated that focused WCF was not purely focused on case forms.

##### **7.2.4.1. Complexity of the German case morphology**

The German case morphology is a difficult aspect of German grammar that is not easily improved (Born, 1985; Diehl, Leuenberger, Pelvat, & Studer, 2000; Kempe & MacWhinney, 1998; Marouani 2006; Müller, 1990; Spinner & Juffs, 2008). The following factors contribute to the complexity of German case morphology.

1) Not only do learners of German need a conceptual understanding of the case functions in order to select the right case morpheme, a German learner must know the case, number, and gender of the noun and the morphemes for that particular case. A breakdown in any step of this process could lead to an error in production (MacWhinney, 1978, Spinner & Juffs, 2008).

2) If a grammatical form is weak in the semantic function it serves, it is harder for L2 learners to notice and to acquire (Slobin, 1973, 1985). Many German case morphemes carry low functional or communicative value (Marouani 2006). Chavez (2007) found that the students in her study “gave short shrift to nominal morphology without a lexical load. Accuracy in case endings was considered especially unimportant” (p. 548). In terms of the degree of form-



meaning correspondence which is called *iconicity* by Giacalone Ramat (1995), German case morphology exhibits a low degree of iconicity. Furthermore, perceptual salience entails the one-to-one principle, whereas forms that have many functions or have some overlap in function would lead to less distinct form-function association (Andersen, 1984). As Blevins (1995) commented: “The nominal declensions of modern German clearly illustrate the rampant syncretism” (p. 117) because some case forms are used in multiple functions (Blevins, 1995; Durrell, 1979; Kempe & MacWhinney, 1998; Wittek & Tomasello, 2005). Because of this kind of *polysemy* (Menzel, 2006), there are no fixed “one-to-one correspondences” of one particular case form with one particular grammatical function (Spinner & Juffs, 2008, p. 326).

3) The orthographic and phonologic closeness of German case morphemes offers weak auditory and visual stimuli (Taeschner, 1983; Tracy, 1986).

Many studies (Mills, 1985; Müller, 1990; Szagun, 2004) have shown that, even for German children, the acquisition of case system takes a long time due to the above factors. Takens (2008) points out: “It is widely known in linguistics that when first language acquirers have problems acquiring a certain phenomenon, the problems second language acquirers encounter can be expected to be even more serious” (p. 9). In sum, the German case morphemes cannot be taught with succinct rules or explanations. Even though the target of the WCF in the current study was wrapped under one overarching term of *case*, the German case system has so many thematic aspects and linguistic forms that the focus on the whole German case system is probably too broad. In light of this complexity, the finding of this study is very encouraging. It shows that focused WCF on the German case forms in only five essays can cause significant improvement for the learners.

#### **7.2.4.2. Learning context**

The progress the focused group achieved in case accuracy is all the more noteworthy considering the educational context, in which the present study was carried out. Not only were the writing tasks imbedded in a broader curriculum, but the grade for the essay assignments also constituted only 20% of the total course grade. In addition, because the goal of the course was not solely the acquisition of the German cases, the researcher did not explicitly tell the students in the focused group that they had to pay attention to German cases only which, in turn, might have decreased the potential effect of the WCF on German case errors. Explicit and repeated reminders could have raised the level of learner attention necessary for more significant improvement. However, it was the intention of the researcher to conduct the study as unobtrusively to the course as possible and to restrict the variable to the provision of WCF. The researcher did not want students to pay attention only to case at the expense of other aspects of grammar during the writing process. It was not the objective of the study to measure the effect of awareness on learning.

In addition, the researcher believes that the primary purpose for writing is to communicate ideas through the creation of meaningful sentences and texts, especially in the GFL case, where the instructor was the only member of the audience with whom the student writer interacted. As Hinkel (2002) said, “to engage in a meaningful interaction or writing, one has to be understood, as well as be able to understand” (p. 196). Therefore, students in the focused and unfocused group also received WCF on some lexical choice errors that impaired meaning. In other words, the feedback provided to the students in this study was not purely form-related. This fact might have lessened the effect of the corrective feedback on case errors.

In sum, it is not surprising that the effect size is small especially given the fact that the German case system involves multiple components that cannot be fully addressed with five essays. The fact the focused group outperformed the other two groups despite of these constraining factors might be interpreted as evidence for the facilitative effect of focused WCF on German case acquisition.

#### **7.2.5. WCF was not ignored by learners**

Truscott (1996) pointed out that even when feedback is given, students are often unwilling or unable to utilize it effectively. The examination of revision behavior revealed that most students in the focused and the unfocused groups did not disregard the WCF since they responded to the majority of the underlined errors and made efforts to correct them, even though not always successfully. Learners' revision patterns in the focused group displayed receptive behaviors to WCF and evinced improvement in accuracy of case forms on tests. The focused group, as manifest in performance, thus appeared permeable to the positive influences of WCF. In contrast, most students in the control group did not seriously attempt to correct their essay drafts based on the summative WCF. For the unfocused group, because of the numerous types of the grammar errors in the writings, students may have not remembered the corrections of the case errors for them to make a tangible difference.

The responses of the students to the attitude questionnaire are consistent with many studies investigating students' preference toward WCF reviewed in Chapter 2. Not only did the students welcome WCF, some of them in the control group complained that they did not get enough WCF and blamed the lack of WCF as the reason for not have benefited from the writing practices.

### **7.3. Limitations of this study**

Since this study took place with the participation of students in actual GFL classes, which were part of a more comprehensive general language program, this study encountered a number of practical constraints.

First, the size of the treatment groups was dependent upon the enrollment number and the willingness of the students to sign the consent forms. The student sample with thirty-three participants was small. A small sample size could have affected not only the results but also the generalizability of the study. In addition, the results of this study may be unique to this particular population under investigation, and may not be universal in nature.

Second, the finding of this study is limited to German case morphology only and cannot be generalized to other features of the German grammar. As Schachter (1991) points out, corrective feedback likely has different degrees of effectiveness for different aspects of language or even different grammatical structures.

The third limitation concerns the testing instruments. The length of the students' writing at the three testing occasions was short due to time limitations of an in-class test. Longer texts containing more occasions for the obligatory use of the German cases could provide a better insight into learner's language development. In addition, because the writing portion of the test and the five essays only made up a small portion of the overall grade for the course, students might not have attached too much value to the writing tasks.

Fourth, given the time span of the study over a semester, there may have been other intervening variables such as participants' individual study efforts, variability in classroom instruction and teaching style, and participants' motivation, which may have influenced how students responded to WCF.

#### **7.4. Recommendations for future research**

Considering the above limitations, future researchers should consider employing incentives to invite more learners to participate in the study. They may also benefit from anticipating the possibility of high attrition rates of the participants, especially if the study lasts over a longer period of time, such as several months as in the current study. It is better not only to have a larger sample size but also a larger data size. A larger sample size and more data not only would make the quantitative analyses more reliable, it would also allow more fine-grained comparisons in the various subcategories of the case taxonomy, thus potentially giving deeper insights into L2 learners' acquisition of German case morphology. Therefore, future researchers might want to create some incentive devices to elicit more writing from the students both on the testing occasions and on writing tasks. It would be ideal to have testing instruments that consist only of writing.

The testing instruments in the present study did not offer any grammatical gender cues. Future studies on case acquisition may give students gender information for the nouns they want to use, thus allowing researcher to eliminate gender errors if they want to pursue study of only the case errors.

### **7.5. Pedagogical implications**

Exploring the effect of different kinds of WCF is of practical significance. As Thouësny (2011) pointed out, “[i]dentifying learners' behaviour in terms of access to feedback may assist students and teachers alike in reframing the type of assistance that is required in order for learners to self-edit their incorrect forms in the long term, that is, to help them perform beyond their level of current performance” (p. 165). Several pedagogical implications could be drawn from the findings of the present study.

First, the current study found that focused WCF on five two-draft essays was effective in bringing about significant improvement in the use of German case forms over five months with the target student population. This result provides evidence that even complex German case morpheme errors are treatable. In addition, it was found that WCF has no stifling effect on fluency since both the focused and unfocused group wrote about the same amount in the tests as the control group. The positive result found for the focused WCF suggests that focused WCF is doable, it is not very time consuming, and is beneficial if accuracy in writing is one of the pedagogical goals. These promising results give reason for supporting the practice of providing focused WCF to students' written work. When instructors lack time, even summative WCF is superior to no WCF at all, given the fact that students were not inclined to correct themselves without WCF.

Second, the provision of WCF should be applied consistently on the targeted grammar features. However, the methods of WCF need to be flexible. For example, coded WCF is often not adequate in identifying and correcting all case errors. It is more effective if learners have a solid grasp of concepts of the grammar features. Learners who lack such knowledge would require more direct explanations than metalinguistic cues to be able to integrate WCF into their revision process. Still, because of the benefits of providing coded WCF as a tool to prompt reflection and active learning by the students, GFL teachers should provide coded WCF as much as possible, but they also should be prepared to give explicit explanations and examples if learners showed difficulty in incorporating coded WCF in editing.

Third, the result of the study supports the instructional emphasis on structural case morphemes through WCF to stimulate German case acquisition. That is, if instructors want to

further fine-tune case error treatment, they may focus on functional categories. Improvement in these categories is especially desirable, since they carry more communicative value.

Fourth, teachers of German should be patient with the results of WCF since some of grammar items like German case forms might require an extended period of time for WCF to reveal any effect. 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. Recall from Chapter 2 that one of the arguments against WCF is that WCF may not last beyond the immediate revision. The example of the use for a dative prepositional phrase described in section 6.3.2.3 demonstrates how tenacious a simple case error can be, sometimes seemingly impervious to the influence of WCF. The editing behavior of the student from the focused group profiled in the last chapter also confirms what had been elaborated by many SLA researchers, namely that language learning is a gradual process and this process is often not linear. As Taeschner (1983) said of the children learners of German: “every morphological rule goes through a long process from its first appearance to the stage of correct adult usage” (p. 115). Nevertheless, as Lightbown (2000) reasoned, “[l]earners’ spontaneous language use does not suddenly change when they are told that they have made an error. This does not mean, however, that feedback on error is not beneficial” (p. 446). Every repetition and instance of language use prompted by WCF can enhance the memory effect: “as memory traces get stronger with additional exposures” (Clahsen et al., 2001). The improvement made by the focused group in this study demonstrates that recurring errors in students’ writing after WCF do not indicate that the provision of WCF is worthless. Just because some errors seem to be hard to eradicate with a few times of WCF does not mean that the provision of WCF is an exercise of futility. Whether it is because of the heightened awareness of the grammar rules or more

knowledge they gained through responding to WCF, the progress the students from the focused group demonstrated in case marking over the course of the semester was tangible. In our case, only a few times of focused WCF already led to qualitative progress over time.

### **7.6. Contributions of the study**

The present study examined the differential effects of focused WCF versus unfocused WCF on German case forms in German as a foreign language context. The effect of written feedback types in relation to German case error types is not well researched. The study extended the narrow focus of the WCF studies performed so far (mostly on the two functional uses of the English articles) to the German case system and demonstrated that the focused WCF condition brought about significant improvement in the acquisition of German case morphology, which implies that German case errors are to some extent treatable. Students in the focused group made the most significant progress in the dative category. The overall effect size was modest because of the acquisitional difficulties of the German case forms and the constraining factors of the learning context. To the knowledge of the researcher, this study is the first study in the literature which reported positive results for focused WCF on German cases for GFL students.

It was also found that unfocused WCF had little effect on case forms because the effect of WCF was probably diluted by the variety of the grammar errors. However, this study cannot confirm Truscott's (1996) position that provision of WCF might be harmful since WCF neither discouraged students nor affected their writing fluency. In fact, the quantitative and qualitative analysis showed that students benefited from WCF both in editing and in the subsequent writings. These benefits were also confirmed by the opinions expressed by the students in the exit questionnaire. Thus, GLF teachers should provide focused WCF if they want to help students effectively improve their accuracy.



From the methodological perspective, the establishment of the German case morphology taxonomy in this study offers a valuable tool for future studies to process and evaluate the accuracy in case usage and performance for learners of German. The taxonomy can be condensed or modified to fit other research purposes. By devising the taxonomy for classifying and coding German case morphology, which can be implemented to fine-tune the analysis in different aspects of L2 German case acquisition, this dissertation contributes to the arsenal of tools available for future research in this area.

This study not only analyzed students' collective performance as a group, it also examined the students' individual responses to different types of WCF methods. It described the effect of summative feedback on content and form and concluded that summative WCF had a weak effect on the improving the content of the essays. The possible pedagogical implications of the fact that summative corrective feedback was, for the most part, not acted upon is that concrete WCF near the errors is necessary. This study also described situations where coded metalinguistic WCF was not sufficient. The examination suggests that, in cases when students lack the conceptual understanding of a grammar item or when case errors are caused by structural deficiencies, direct WCF coupled with explanations and examples is sometimes necessary.

The current study has shed light on the value of focused WCF for students' learning of the highly complicated German case forms and demonstrated that the WCF did not have a detrimental effect of the fluency of the student writing. Thus, it contributes to the empirical body of research on the effectiveness of WCF in instructed foreign language learning settings.

## REFERENCES

- Aljaafreh, A. & Lantolf, J. P. (1994). Negative feedback as regulation and second language learning in the zone of proximal development. *The Modern Language Journal*, 78, 465-483.
- Allwright, R. (1975). Problems in the study of language teacher's treatment of error. In M. Burt & H. Dulay (Eds.), *New directions in second-language learning, teaching and bilingual education* (pp. 96-109). Washington, DC.
- Andersen, R. W. (1984). The one to one principle of interlanguage construction. *Language Learning*, 34, 77-95.
- Applebee, A. N. (1981). *Writing in the secondary school: English and the content areas*. Urbana, IL: National Council of Teachers of English.
- Ashwell, T. (2000). Patterns of teacher response to student writing in a multiple-draft composition classroom: Is content feedback followed by form feedback the best method? *Journal of Second Language Writing*, 9, 227-257.
- Ausubel, D. (1964). Adults vs. children in second language learning: Psychological considerations. *Modern Language Journal*, 48, 420-424.
- Ayoun, D. (2001). The role of negative and positive feedback in the second language acquisition of the passé composé and imparfait. *Modern Language Journal*, 85, 226-243.
- Bardovi-Harlig, K. (1995). A narrative perspective on the development of the tense/aspect system in second language acquisition. *Studies in Second Language Acquisition*, 17, 263-291.

- Baten, K. (2011). Processability theory and German case acquisition. *Language Learning*, 61, 455–505.
- Belz, J. A. (2005). Corpus-driven characterization of pronominal *da*-compound use by learners and native speakers of German. *Unterrichtspraxis / Teaching German*, 38, 44-59.
- Bernhardt, E. B. (1991). *Reading development in a second language: Theoretical, research, and classroom perspectives*. Norwood, NJ: Ablex.
- Bialystok, E. (1979). Explicit and implicit judgment of second language grammaticality. *Language Learning*, 29, 81-103.
- Bierwisch, M. (1967). Syntactic Features in Morphology: General Problems of So-Called Pronominal Inflection in German. In: *To Honour Roman Jakobson* (pp. 239-270). The Hague/Paris: Mouton.
- Birch, B. M. (2007). *English L2 reading: Getting to the bottom*. (2nd ed.). Mahwah, NJ: Lawrence.
- Bitchener, J. (2008). Evidence in support of written corrective feedback. *Journal of Second Language Writing*, 17, 102-118.
- Bitchener, J. (2009). Measuring the effectiveness of written corrective feedback: A response to “Overgeneralization from a narrow focus: A response to Bitchener (2008)”. *Journal of Second Language Writing*, 18, 276-279.
- Bitchener, J. & Knoch, U. (2008). The value of a focused approach to written corrective feedback. *ELT Journal*, 63, 204-211.
- Bitchener, J. & Knoch, U. (2008). The value of written corrective feedback for migrant and international students. *Language Teaching Research*, 12, 409-431.

- Bitchener, J. & Knoch, U. (2009). The relative effectiveness of different types of direct written corrective feedback. *System*, 37, 322-329.
- Bitchener, J. & Knoch, U. (2010). Raising the linguistic accuracy level of advanced L2 writers with written corrective feedback. *Journal of Second Language Writing*, 19, 207-217.
- Bitchener, J., Young, B., & Cameron, S. (2005). The effect of different types of corrective feedback on ESL student writing. *Journal of Second Language Writing*, 9, 227-258.
- Blevins, J. P. (1995). Syncretism and paradigmatic opposition. *Linguistics and Philosophy*, 18, 113-152.
- Bloomfield, L. (1961). *Language*. New York: Holt, Rinehart and Winston.
- Born, R. (1985). Transfer in compositions of third, fourth, and fifth semester German students. *Unterrichtspraxis*, 2, 246-251.
- Brannon, L. & Knoblauch, C. H. (1982). On students' rights to their own text: A model of teacher response. *College Composition and Communication*, 33, 157-166.
- Brants, T. (2000). Inter-Annotator agreement for a German newspaper corpus. *Proceedings of the Second International Conference on Language Resources and Evaluation*. Athens, Greece: ELRA.
- Britton, J. (1970). *Language and learning*. Portsmouth, NH: Boynton/Cook.
- Broadbent, D. (1958). *Perception and Communication*. London: Pergamon Press.
- Brooks, N. (1960). *Language and language learning. Theory and practice*. New York: Harcourt, Brace & World.
- Brown, D. H. (2007). *Principles of language learning and teaching* (5<sup>th</sup> ed.). NY: Pearson Educations, Inc.
- Brown, R (1973). *A first language: The early stages*. Cambridge, MA: Harvard University Press.

- Brown, R., & Hanlon, C. (1970). Derivational complexity and order of acquisition in child speech. In J. Hayes (Ed.), *Cognition and the development of language* (pp. 11-54). New York: Wiley.
- Bruton, A. (2009). Designing research into the effects of grammar correction in L2 writing: Not so straightforward. *Journal of Second Language Writing, 18*, 136-140.
- Burkland, J., & Grimm, N. (1986). Motivating through responding. *Journal of Teaching Writing, 5*, 237-247.
- Burt, M. & Kiparsky, C. (1972). *The gooficon: A repair manual for English*. Rowley, MA: Newbury House.
- Burt, M. (1975). Error analysis in the adult EFL Classroom. *TESOL Quarterly, 9*, 53-63.
- Cambourne, B. (1986). Process writing and non-English speaking background children. *Austrian Journal of Reading, 9*, 126-138.
- Cardelle, M., & Corno, L (1981). Effects on second language learning of variations in written feedback on homework assignments. *TESOL Quarterly, 15*, 251–261.
- Carroll, J. B. (1966). The contributions of psychological theory and educational research to the teaching of foreign languages. In A. Valdman (Ed.), *Trends in language teaching* (pp. 93-106). New York: McGraw-Hill.
- Carroll, S. E. (2001). *Input and evidence: The raw material of second language acquisition*. Amsterdam: John Benjamins.
- Carroll, S. E. & Swain, M. (1993). Explicit and implicit negative feedback: An empirical study of the learning of linguistic generalizations. *Studies in Second Language Acquisition, 15*, 357-386.

- Casciani, S. & Rapallino, L. (1991). "Pronouns in the oven," or the correction of errors in teaching Italian. *Italica*, 68, 457–472.
- Celce-Murcia, M. (1985). Making informed decisions about the role of grammar in language teaching. *Foreign Language Annals*, 18, 297–301.
- Celce-Murcia, M. (1991). Grammar pedagogy in second and foreign language teaching. *TESOL Quarterly*, 25, 459-480.
- Celce-Murcia, M. (1992). Formal grammar instruction: An educator comments ..." *TESOL Quarterly*, 26, 406-409.
- Chandler, J. (2003). The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. *Journal of Second Language Writing*, 12, 267–296.
- Chandler, J. (2004). A response to Truscott. *Journal of Second Language Writing*, 13, 345–348.
- Chandler, J. (2009). Dialogue. Response to Truscott. *Journal of Second Language Writing*, 18, 57–58.
- Chapin, R. & Terdal, M. (1990). Responding to our response: Student strategies for responding to teacher written comments [Electronic Version Abstract]. (ERIC Document Reproduction Service No. 328098)
- Chaudron, C. (1977). A descriptive model of discourse in the corrective treatment of learner's errors. *Language Learning*, 27, 29-46.
- Chaudron, C. (1985). Intake: On methods and models for discovering learners' processing of input. *Studies in Second Language Acquisition*, 7, 1-14.

- Chaudron, C. (1986). Teachers' priorities in correcting learners' errors in French immersion classes. In R. R. Day (Ed.), *"Talking to learn": Conversation in second language acquisition* (pp. 327–351). Rowley, MA: Newbury House.
- Chaudron, C. (1988). *Second language classrooms*. New York: Cambridge University Press.
- Chavez, M. (1996). Non-revised writing, revised writing, and error detection by learner characteristics. *International Journal of Applied Linguistics*, 6, 163-198.
- Chavez, M. (2007). Students' and teachers' assessments of the need for accuracy in the oral production of German as a foreign language. *The Modern Language Journal*, 91, 537-563.
- Clahsen, H. (1984). Der Erwerb von Kasusmarkierungen in der deutschen Kindersprache. *Linguistische Berichte*, 89, 1–31.
- Clahsen, H., Eisenbeiss, S., Hadler, M., & Sonnenstuhl, I. (2001). The mental representation of inflected words: An experimental study of adjectives and verbs in German. *Language*, 77, 510-543.
- Clark, H. (2007). Students' noticing and incorporation of written feedback: A snapshot of ESOL writing instructors' commentary on adult ESOL students' essays. Master Thesis, University of Texas.
- Cohen, A. D. (1975). Error correction and the training of language teachers. *The Modern Language Journal*, 59, 414-422.
- Cohen, A. D. (1987). Student processing of feedback on their compositions. In A. L. Wenden & J. Rubin (Eds.), *Learner strategies in language learning* (pp. 57–69). Englewood Cliffs, NJ: Prentice-Hall.

- Cohen, A. D. (1990). *Writing as process and product. Language learning insights for learners, teachers and researchers* (pp. 103-310). New York: Newbury House.
- Cohen, A. D. (1991). Feedback on writing: The use of verbal reports. *Studies in Second Language Acquisition*, 13, 133–159.
- Cohen, A. D. & Cavalcanti, M. (1990). Feedback on written compositions: Teacher and student verbal reports. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp. 155–77). Cambridge: Cambridge University Press.
- Cohen, A. D. & Robbins, M. (1976). Toward assessing interlanguage performance: the relationship between selected errors, learners' characteristics, and learners' expectations. *Language Learning*, 26, 45-66.
- Comer, W. J. (2012a). The role of grammatical knowledge in reading for meaning in Russian, *Slavic and East European Journal*, 56, 232- 255.
- Comer, W. J. (2012b). Communicative language teaching and Russian. In V. Makarova (Ed.), *Russian language studies in North America: New perspectives from theoretical and applied linguistics* (pp. 133-159). London: Anthem Press.
- Comrie, B. (1999). Grammatical gender systems: A linguist's Assessment. *Journal of Psycholinguistic Research*, 28, 457-466.
- Corder, S. P. (1967). The significance of learner's errors. *International Review of Applied Linguistics*, 5, 149-159.
- Corder, S. P. (1981). *Error analysis and interlanguage*. Oxford University Press.
- Crookes, G. (1989). Planning and interlanguage variation. *Studies in Second Language Acquisition*, 11, 367-83.



- de Bot, K. (1996). The psycholinguistics of the output hypothesis. *Language Learning*, 46, 529–555.
- DeKeyser, R. M. (1993). The effect of error correction on L2 grammar knowledge and oral proficiency. *Modern Language Journal*, 77, 501-14.
- DeKeyser, R. M. (1998). Beyond focus on form: Cognitive perspectives on learning and practicing second language grammar. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 42-63). Cambridge: Cambridge University Press.
- DeKeyser, R. M. (2003). Implicit and explicit learning. In C. J. Doughty & M. H. Long (Eds.), *Handbook of second language acquisition* (pp. 313-348). Oxford: Blackwell.
- DeKeyser, R. M. (2007). Skill acquisition theory. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (pp. 97-113). London: Lawrence Erlbaum Associated, Publishers.
- DeKeyser, R. M. (2010). Practice for second language learning: Don't throw out the baby with the bathwater. *International Journal of English Studies*, 10, 155-165
- Dickens, D. B. (1983). Teaching attributive adjective endings and adjectival nouns: An attempt at simplification. *Unterrichtspraxis*, 16, 103-106.
- Di Donato, R., Clyde, M., & Vansant, J. (2008). *Deutsch, na klar! An introductory German course*. Boston: McGraw-Hill.
- Diehl, E., Leuenberger, H., Pelvat, I., & Studer, T. (2000). *Grammatikunterricht: Alles für der Katz? Untersuchungen zum Zweitsprachenerwerb Deutsch*. Tübingen: Max Niemeyer Verlag.

- Diehl, E. & Studer, T. (2001). Grenzen und Möglichkeiten des Grammatikunterricht: Ergebnisse des Genfer Forschungsprojekts DIGS. XII. International Conference for German teachers, Luzern, Schwitzerland, 30. Juli- 4. August. 2001.
- Doughty, C. & Williams, J. (1998). Pedagogical choices in focus on form. In C. J. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 197-261). Cambridge: Cambridge University Press.
- Dulay, H. & Burt, M. (1974). Natural sequences in child second language acquisition. *Language Learning*, 24, 37-53.
- Dulay, H. & Burt, M. (1977). Remarks on creativity in language acquisition. In M. Burt, H. Dulay, & M. Finocchiaro (Eds.), *Viewpoints on English as a second language* (pp. 95-126). New York: Regents.
- Durrell, M. (1979). Some problems in the morphology of the German noun phrase. *Transactions of the Philological Society*, 77, 66-88.
- Durrell, M. (2002). *Hammer's German grammar and usage* (4th ed.). McGraw Hill.
- Egi, T. (2007). Interpreting recasts as linguistic evidence: The role of linguistic target, length, and degree of change. *Studies in Second Language Acquisition*, 29, 511–537.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Ellis, R. (1998). Teaching and research: Options in grammar teaching. *TESOL Quarterly*, 32, 39-60.
- Ellis, R. (2001). The place of grammar instruction in the second/foreign language curriculum. In E. Hinkel & S. Fotos (Eds.), *New perspectives on grammar teaching in second language classrooms* (pp. 17-34). New York: Routledge.

- Ellis, R. (2001). Methodological options in grammar teaching materials. In E. Hinkel & S. Fotos (Eds.), *New perspectives on grammar teaching in second language classrooms* (pp. 155-179). New York: Routledge.
- Ellis, R., & Barkhuizen, G. (2005). *Analysing learner language*. Oxford: Oxford University Press.
- Ellis, R., Basturkmen, H., & Loewen, S. (2001). Learner uptake in communicative ESL lessons. *Language Learning, 51*, 281-318.
- Ellis, R., Sheen, Y., Murakami, M., & Takashima, H. (2008). The effects of focused and unfocused written corrective feedback in an English as a foreign language context. *System, 36*, 353–371.
- Emig, J. (1971). *The composing processes of twelfth graders*. Urbana, IL: NCTE.
- Emig, J. (1977). Writing as a mode of learning. *College Composition and Communication, 28*, 122–128.
- Enginarlar, H. (1993). Student response to teacher feedback in EFL writing. *System, 21*, 193-204.
- Esteban, N. M. (2010). The Use of models as a form of written feedback to secondary school pupils of English. *International Journal of English Studies, 10*, 183-187.
- Evans, N.W., Hartshorn, K.J., & Tuioti, A. E. (2010a). Written corrective feedback: the practitioners' perspective. *International Journal of English Studies, 10*, 47-77.
- Evans, N.W., Hartshorn, K. J., McCollum, R. M., & Wolfersberger, M. (2010b). Contextualizing corrective feedback in L2 writing pedagogy. *Language Teaching Research, 14*, 445–463.
- Evans, N.W., Hartshorn, K. J., & Strong-Krause, D. (2011). The efficacy of dynamic written corrective feedback for university matriculated ESL learners. *System, 39*, 229-239.

- Fathman, A. K., & Whalley, E. (1990). Teacher response to student writing: Focus on form versus content. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp. 178-190). Cambridge, UK: Cambridge University Press.
- Fazio, L. (2001). The effect of corrections and commentaries on the journal writing accuracy of minority- and majority-language students. *Journal of Second Language Writing, 10*, 235–249.
- Ferris, D. R. (1995). Student reactions to teacher response in multiple-draft composition classrooms. *TESOL Quarterly, 29*, 33-53.
- Ferris, D. R. (1996). The case for grammar correction in L2 writing classes. A response to Truscott (1996). *Journal of Second Language Writing, 8*, 1-10.
- Ferris, D. R. (2002). *Treatment of error in second language student writing*. Ann Arbor: University of Michigan Press.
- Ferris, D. R. (2004). The “Grammar Correction” debate in L2 Writing: Where are we, and where do we go from here? (and what do we do in the meantime ...?). *Journal of Second Language Writing, 13*, 49-62.
- Ferris, D. R. (2006). Does error feedback help student writers? New evidence on the short-and long-term effects of written error correction. In K. Hyland & F. Hyland (Eds.), *Feedback in second language writing: Contexts and issues* (pp. 81-104). Cambridge: Cambridge University Press.
- Ferris, D. R. (2007). Preparing teachers to respond to student writing. *Journal of Second Language Writing, 16*, 165-193.
- Ferris, D. R. (2008). Feedback: Issues and Options. *Teaching Academic Writing, 14*, 93-124.

- Ferris, D. R. (2010). Second language writing research and written corrective feedback in SLA. *Studies in Second Language Acquisition*, 32, 181–201.
- Ferris, D. R., Chaney, S., Komura, K., Roberts, B., & McKee, S. (2000). Perspectives, problems, & practices in treating written error. Colloquium presented at International TESOL Convention, Vancouver, BC.
- Ferris, D. R. & Hedgcock, J. (1998). *Teaching ESL composition: purpose, process, and practice*. Mahwah, NJ: Erlbaum.
- Ferris, D. R. & Helt, M. (2000). Was Truscott right? New evidence on the short- and long-term effects of written error correction. In K. Hyland & F. Hyland (Eds.), *Perspective on response*. Cambridge: Cambridge University Press.
- Ferris, D. R. & Roberts, B. (2001). Error feedback in L2 writing classes: How explicit does it need to be? *Journal of Second Language Writing*, 10, 161-184.
- Flower, L., & Hayes, J. (1981). A cognitive process the theory of writing. *College Composition and Communications*, 32, 365-387.
- Fotos, S. (1993). Consciousness and noticing through focus on form: Grammar tasks performance versus formal instruction. *Applied Linguistics*, 14, 385-407.
- Fotos, S. (2001). Structure-based interactive tasks for the EFL grammar learner. In E. Hinkel & S. Fotos (Eds.), *New perspectives on grammar teaching in second language classrooms*. New York: Routledge.
- Frantzen, D. (1995). The effects of grammar supplementation on written accuracy in an intermediate Spanish content course. *Modern Language Journal*, 79, 329-344.

- Frantzen, D. & Rissel, D. (1987). Learner self-correction of written compositions: What does it show us. In B. VanPatten, T. R. Dvorak, & J. F. Lee (Eds.), *Foreign language learning: A research perspective* (pp. 92-107). Cambridge: Newbury House.
- Freedman, S. (1987). *Response to student writing*. Urbana, IL: National Council of Teachers of English.
- Frodesen, J. (1991). Grammar in writing. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (2nd ed., pp. 264–276). Boston: Heinle & Heinle.
- Furneaux, C., Paran, A., Fairfax, B. (2007). Teacher stance as reflected in feedback on student writing: An empirical study of secondary school teachers in five countries. *International Review of Applied Linguistics and Language Teaching*, 45, 69-94.
- Gass, S. (1997). *Input, interaction, and the second language learner*. Mahwah, NJ: Erlbaum.
- Gass, S. (2003). Input and Interaction. In C. J. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* (pp. 224-255). Oxford: Blackwell Publishing.
- Gass, S. & Mackey, A. (2007). Input, interaction, and output in second language acquisition. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition An Introduction* (pp.175-199). London: Lawrence Erlbaum Associates.
- Gass, S. & Selinker, L. (1994). *Second language acquisition: An introductory course*. Hillsdale, NJ: Lawrence Erlbaum.
- Gass, S. & Varonis, E. (1985). Task variation and nonnative/nonnative negotiation of meaning. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 149–161). Newbury House, Rowley, MA.
- George, H.V. (1972). *Common errors in language learning*. Newbury House Publishers, Rowley, MA.

- Giacalone Ramat, A. (1995). Iconicity in grammaticalization processes. In R. Simone (Ed.), *Iconicity in language* (pp. 119-139). Philadelphia: Benjamins.
- Goldschneider, J. & DeKeyser, R. (2001). Explaining the “natural order of L2 morpheme acquisition” in English: A meta-analysis of multiple determinants. *Language learning*, 51, 1-50.
- Goldstein, L. (2001). For Kyla: What does research say about responding to ESL writers. In T. Silva & P. K. Matsuda (Eds.), *On second language writing* (pp. 73–90). Mahwah, NJ: Erlbaum.
- Goldstein, L. (2004). Questions and answers about teacher written commentary and student revisions: Teachers and students working together. *Journal of Second Language Writing*, 13, 63–80.
- Goldstein, L. (2005). *Teacher written commentary in second language writing classrooms*. Ann Arbor: University of Michigan Press.
- Goldstein, L. (2006). Feedback and revision in second language writing: Helping learners become independent writers. In K. Hyland & F. Hyland (Eds.), *Feedback in second language writing: Contexts and issues* (pp. 185–205). New York: Cambridge University Press.
- Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. New York: Cambridge University Press.
- Granger, S. (2003). Error-tagged learner corpora and CALL: a promising synergy. *CALICO Journal*, 20, 465-480.
- Granger, S. (2004). Computer learner corpus research: current status and future prospects. *Language and Computers*, 23, 123-145.

- Greenberg, J. (Ed.). (1978). *Universals of human language* (Vols. 1-4). Stanford, CA: Stanford University Press.
- Greenslade, T., & Félix-Brasdefer, J. C. (2006). Error correction and learner perceptions in L2 Spanish writing. In C. A. Klee & T. L. Face (Eds.), *7th conference on the acquisition of Spanish and Portuguese as first and second languages* (pp. 185-194). Somerville, MA: Cascadilla Proceedings Project.
- Grigorenko, E. (2002). Foreign language acquisition and language-based learning disabilities. In P. Robinson (Ed.), *Individual differences and instructed language learning* (pp. 95-112). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Guénette, D. (2007). Is feedback pedagogically correct? Research design issues in studies of feedback on writing. *Journal of Second Language Writing, 16*, 40–53.
- Gutzmann, D. & Turgay, K. (2011). Funktionale Kategorien in der PP und deren Zweitspracherwerb. *Zeitschrift für Sprachwissenschaft, 30*, 1-53.
- Hammerly, H. (1971). Recent methods and trends in second language teaching. *The Modern Language Journal, 55*, 499–505.
- Hammerly, H. (1991). *Fluency and accuracy*. Clevedon, UK: Multilingual Matters.
- Hammond, R. (1988). Accuracy versus communicative competency: The acquisition of grammar in the second language classroom. *Hispania, 71*, 408-17.
- Hartshorn, K. J. (2008). The effects of manageable corrective feedback on ESL writing accuracy. Unpublished dissertation, Brigham Young University, Provo, UT.
- Hartshorn, K. J., Evans, N.W., Merrill, P. F., Sudweeks, R. R., Strong-Krause, D., & Anderson, N. J. (2010). Effects of dynamic corrective feedback on ESL writing accuracy. *TESOL Quarterly, 44*, 84–109.



- Hedgcock, J. & Lefkowitz, N. (1994). Feedback on feedback: Assessing learner receptivity to teacher response in L2 composing. *Journal of Second Language Writing*, 3, 141-163.
- Hedgcock, J. & Lefkowitz, N. (1996). Some input on input: Two analyses of student response to expert feedback in L2 Writing. *The Modern Language Journal*, 80, 287-308.
- Hendrickson, J. M. (1976). Error analysis and selective correction in the adult ESL classroom: An experiment. ERIC Document Reproduction Services No. ED 135 260.
- Higgs, T. & Clifford, R. (1982). The push towards communication. In T. Higgs (Ed.), *Curriculum, competence, and the foreign language teacher* (pp. 57-79). Lincolnwood, IL: National Textbook.
- High, J., Hoyer, J., & Wakefield, R. (2002). Teaching "Process Editing" skills with computers: From theory to practice on a larger scale. *Die Unterrichtspraxis / Teaching German*, 35, 154-165.
- Hillocks, G., Jr. (1986). Research on written composition: New directions for teaching. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills/National Conference on Research in English.
- Hinkel, E. (2001). Teaching grammar in writing classes: Tenses and cohesion. In E. Hinkel & S. Fotos (Eds.), *New perspectives on grammar teaching in second language classrooms* (pp. 181-198). Lawrence Erlbaum Associates.
- Horowitz, D. (1986). Process, not product: less than meets the eye. *TESOL Quarterly*, 20, 141-144.
- Housen, A., & Kuiken, F. (2009). Complexity, accuracy and fluency in second language acquisition. *Applied Linguistics*, 30, 461-473.

- Huebner, T (1983b). Linguistic system and linguistic change in an interlanguage. *Studies in Second Language Acquisition*, 6, 33-53.
- Hunt, K. (1970). *Syntactic maturity in school-children and adults*. Monographs of the Society for Research in Child Development.
- Hyland, F. (1998). The impact of teacher written feedback on individual writers. *Journal of Second Language Writing*, 7, 255–286.
- Hyland, F. (2000). ESL writers and feedback: Giving more autonomy to students. *Language Teaching Research*, 4, 33–54.
- Hyland, F. (2003). Focusing on form: Student engagement with teacher feedback. *System*, 31, 217–230.
- Hyland, F. & Hyland, K. (2006). Feedback on second language students' writing. *Language Teaching*, 39, 83–101.
- Iwashita, N. (2003). Negative feedback and positive evidence in task-based interaction: Differential effects of L2 development. *Studies in Second language Acquisition*, 25, 1-36.
- Izumi, S. & Lakshamanan, U. (1998). Learnability, negative evidence and the L2 acquisition of the English passive. *Second Language Research*, 14, 62-101.
- Jackson, C. (2005). *The sentence-level processing of case markings and word order by native speaker and non-native speakers of German*. Doctoral dissertation, University of Wisconsin, Madison.
- James, C. (1998). *Errors in language learning and use: Exploring error analysis*. London: Longman.
- Jiang, N. (2004). Morphological insensitivity in second language processing. *Applied Psycholinguistics*, 25, 603–634.

- Johns, A. (1995). Teaching classroom and authentic genres: Initiating students into academic cultures and discourses. In D. Belcher & G. Braine (Eds.), *Academic writing in a second language* (pp. 277-291). Norwood, NJ: Ablex.
- Johnson, D. & Roen, D. (Eds.). (1992). *Richness in writing: Empowering ESL students* (pp. 177–192). New York: Longman.
- Kempe, V. & MacWhinney, B. (1998). The acquisition of case marking by adult learners of Russian and German. *Studies in Second Language Acquisition*, 20, 543–587.
- Kern, R. (2000). *Literacy and language teaching*. Oxford: Oxford University Press.
- Kirmann, E. (1961). A practical approach to the adjective ending rules. *The German Quarterly*, 34, 274-276.
- Klapper, J. & McMahon, T. (1997). *Neue kommunikative Grammatik: A communicative grammar worktext with written and oral practice*. Glencoe/McGraw-Hill.
- Kepner, C. (1991). An experiment in the relationship of types of written feedback to the development of second-language writing skills. *Modern Language Journal*, 75, 305–313.
- Klein, W. & Perdue, C. (1982). *Utterance structure: Developing grammars again*. Amsterdam: John Benjamins.
- Knoblauch, C. & Brannon, L. (1981). Teacher commentary on student writing: The state of the art. *Freshman English*, 10, 1-4.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. New York: Cambridge UP.
- Komiya, S. (1991). Suikoo ni yoru sakubun shidoo no kannosee – gakushuusha no nooryoku o ikashita teesee (Teaching a composition in Japanese that makes the best of the students' ability). *Journal of Japanese Language Teaching*, 75, 124-135.

- Kowal, M. & Swain, M. (1994). Using collaborative language production tasks to promote students' language awareness. *Language Awareness*, 3, 73-94.
- Krashen, S. (1977). The monitor model for adult second language performance. In M. Burt, M. Dulay, & M. Finocchiaro (Eds.), *Viewpoints on English as a second language* (pp. 151-156). New York: Regents.
- Krashen, S. (1981). *Second language acquisition and second language learning*. Oxford: Pergamon Press.
- Krashen, S. (1982). *Principles and practice in second language acquisition*. New York: Pergamon Press.
- Krashen, S. (1984). *Writing: Research, theory, and applications*. Oxford: Pergamon Press.
- Krashen, S. (1985). *The input hypothesis*. Harlow, UK: Longman.
- Krashen, S. (1992). Formal grammar instruction: Another educator comments... *TESOL Quarterly*, 26, 409-11.
- Krashen, S. (1993). The effect of formal grammar teaching: Still peripheral. *TESOL Quarterly*, 26, 409-411.
- Krashen, S. (1999). Seeking a role for grammar: A review of some recent studies. *Foreign Language Annals*, 32, 245-257.
- Krashen, S. (2003), *Explorations in language acquisition and use*. Portsmouth: NH: Heinemann.
- Krashen, S. & Selinger, H. (1975). The essential contributions of formal instructions in adult second language learning. *TESOL Quarterly*, 9, 173-183.
- Krashen, S. & Terrell, T. (1983). *The natural Approach: Language acquisition in the classroom*. New York: Pergamon.

- Kufner, H. (1962). *The grammatical structures of English and German*. Chicago: Univ. of Chicago Press.
- Lalande, J. (1980). *A study of the combined effects of student error awareness and problem-solving/active-correction strategies on the development of writing skills in the intermediate level German classroom*. Doctoral dissertation, Pennsylvania State University.
- Lalande, J. (1981). An error in error-correction policies? *ADFL Bulletin*, 12, 45-47.
- Lalande, J. (1982). Reducing composition errors: An Experiment. *Modern Language Journal*, 66, 140-149.
- Lantolf, J. P. & Thorne, S.L. (2007). Sociocultural theory and second language learning. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: an introduction* (pp. 201-224). Mahwah, NJ: Lawrence Erlbaum Associates.
- Lee, J. F. (1987). Morphological factors influencing pronominal reference assignment by learners of Spanish. In T. Morgan, J. F. Lee, & B. VanPatten (Eds.), *Language and language use: Studies in Spanish* (pp. 221-232). Landham, MD: University Press of America.
- Lee, I. (1997). ESL learners' performance in error correction in writing: Some implications for college-level teaching. *System*, 25, 465-477.
- Lee, I. (2005). Error correction in the L2 writing classroom: What do students think? *TESL Canada Journal*, 22, 1-16.
- Leech, G. (1997). Introducing corpus annotation. In R. Garside, G. Leech, & A. McEnery (Eds.), *Corpus annotation: linguistic information from computer text corpora*. London: Addison Wesley Longman.

- Leeman, J. (2003). Recasts and second language development: beyond negative evidence. *Studies in Second Language Acquisition*, 25, 37-64.
- Leki, I. (1991). The preferences of ESL students for error correction in college-level writing classes. *Foreign Language Annals*, 24, 203–218.
- Leki, I. (2000). Understanding ESL writers: A guide for teachers. Portsmouth, NH: Boynton-Cook.
- Li, S. (2010). The effectiveness of corrective feedback in SLA: A meta-analysis. *Language Learning*, 60, 309–365.
- Liamkina, O. (2008). Teaching grammatical meaning to advanced learners. A cognitive-semantic perspective. In L. Ortega & H. Byrnes (Eds.), *The longitudinal study of advanced L2 capacities*. New York: Routledge.
- Lightbown, P. M. (2000). Classroom SLA research and second language teaching. *Applied Linguistics*, 21, 431-462
- Lightbown, P. M. & Pienemann, M. (1993). Comments on Stephen D. Krashen's "Teaching issues: Formal grammar instruction". *TESOL Quarterly*, 27, 717-722.
- Lightbown, P. M. & Spada, N. (1990). Focus on form and corrective feedback in communicative language teaching: Effects on second language learning. *Studies in Second Language Acquisition*, 12, 429-448.
- Lightbown, P. M. & Spada, N. (1999). *How languages are learned*. Oxford, UK: Oxford University Press.
- Lizotte, R. (2001). Quantifying progress in an ESL writing class. *MATSOL Currents*, 27, 7- 17.
- LoCoco, V. (1987). Learner comprehension of oral and written sentences in German and Spanish: The importance of word order. In B. VanPatten, T. R. Dvorak, & J. F. Lee (Eds.),

- Foreign language learning: A research perspective* (pp. 119-129). Cambridge, MA: Newbury House.
- Loewen, S. (2004). Uptake in incidental focus on form in meaning-focused ESL lessons. *Language Learning, 54*, 153-188.
- Loewen, S. & Erlam, R. (2006). Corrective feedback in the chatroom: An experimental study. *Computer Assisted Language Learning, 19*, 1-14.
- Loewen, S., Li, S., Fei, F., Thompson, A., Nakatsukasa, K., Ahn, S., & Chen, X. (2009). Second language learners' beliefs about grammar instruction and error correction. *The Modern Language Journal, 93*, 91-104.
- Long, M. H. (1977). Teacher feedback on learner error: Mapping cognitions. In H. D. Brown, C. Yorio, & R. Crymes (Eds.), *Teaching and learning English as a second language: Trends in research and practice* (pp. 278-294). Washington, DC: Teachers of English to Speakers of Other Languages.
- Long, M. H. (1980). "Inside the black box": Methodological issues in classroom research on language learning. *Language Learning, 1*, 1-42.
- Long, M. H. (1983). Does second language instruction make a difference? A review of research. *TESOL Quarterly, 17*, 35-82.
- Long, M. H. (1985). Input and second language acquisition theory. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 377-393). Rowley, MA: Newbury House.
- Long, M. H. (1991). Focus on form: A design feature in language teaching-methodology. In K. de Bot, D. Coste, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in Cross-cultural perspective* (pp. 39-52). Amsterdam: John Benjamins.

- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 413-468). San Diego, CA: Academic Press.
- Long, M. H. (2000). Focus on form in task-based language teaching. In R. Lambert & E. Shohamy (Eds.), *Language policy and pedagogy. Essays in honor of A. Ronald Walton* (pp. 179-192). Philadelphia: John Benjamins
- Long, M. H. (2007). Recasts in SLA: The story so far. In M. H. Long (Ed.), *Problems in SLA* (pp. 75–116). Mahwah, NJ: Erlbaum.
- Lu, X. (2010). Automatic analysis of syntactic complexity in second language writing. *International Journal of Corpus Linguistics*, 15, 474–496.
- Lüdeling, A., Walter, M., Kroymann, E., & Adolphs, P. (2005). Multi-level error annotation in learner corpora. *Proceedings of Corpus Linguistics*. Birmingham, UK.
- Lyster, R. (1998). Negotiation of form, recast, and explicit correction in relation to error types and learner repair in immersion classrooms. *Language Learning*, 48, 183-218.
- Lyster, R. (2004). Differential effects of prompts and recasts in form-focused instruction. *Studies in Second Language Acquisition*, 19, 37–66.
- Lyster, R., & Mori, H. (2006). Interactional feedback and instructional counterbalance. *Studies in Second Language Acquisition*, 28, 269–300.
- Lyster, R. & Ranta, E. (1997). Corrective feedback and learner uptake: negotiation of form in communicative classroom. *Studies in Second Language Acquisition*, 19, 37-61.
- Lyster, R. & Saito, Y. (2010). Oral feedback in classroom SLA: A meta-analysis. *Studies in Second Language Acquisition*, 32, 265–302.



- Mackey, A., Gass, S. M., & McDonough, K. (2000). How do learners perceive interactional feedback? *Studies in Second Language Acquisition*, 22, 471-497.
- Mackey, A. & Gass, S. M. (2006). Pushing the methodological boundaries in interaction research: An introduction to the special issue. *Studies in Second Language Acquisition*, 28, 169-178.
- MacWhinney, B. (1978). The acquisition of morphophonology. In *Monographs of the Society for Research in Child Development*, 43 (1-2, Serial no. 174).
- Mahili, I. (1994). Responding to student writing. *English Teaching Forum*, 24-27.
- Major, R. (1988). Balancing form and function. *IRAL*, 26, 81-100.
- Makino, T. (1993). Learner self-correction in EFL written compositions. *ELT Journal*, 47, 337-341.
- Mantello, M. (1997). Error correction in the L2 classroom. *Canadian Modern Language Review*, 54, 127-131.
- Marouani, Z. (2006). *Der Erwerb des Deutschen durch arabischsprachige Kinder. Eine Studie zur Nominalflexion*. (The acquisition of German by Arabic children. A study of nominal inflexion). Doctorial dissertation, Universität Heidelberg.
- McDonough, K. (2005). Identifying the impact of negative feedback and learners' responses on ESL question development. *Studies in Second Language Acquisition*, 27, 79-103.
- McDonough, K. & Mackey, A. (2006). Responses to recasts: Repetitions, primed production, and linguistic development. *Language Learning*, 56, 693-720.
- McGarrell, H. (2011). AILA matters: Writing teacher response (WTR). *International Journal of Applied Linguistics*, 21, 140-142.

- McGirt, J. D. (1984). *The effect of morphological and syntactic errors on the holistic scores of native and non-native compositions*. Master's thesis, University of California, Los Angeles.
- McNeill, D. (1970). *The acquisition of language*. New York: Harper.
- Menzel, W. (2006). Constraint-based modeling and ambiguity. *International Journal of Artificial Intelligence in Education*, 16, 29-63.
- Meurers, D. (2011, July). *On annotating learner corpora: Why? Which annotations? How?* Paper presented at the Symposium *what's hard in German? Structural difficulties, research approaches and pedagogic solutions*. Bangor University, UK. Retrieved from <http://www.sfs.uni-tuebingen.de/~dm/presentations.html>
- Mhundwa, P. (2005). The relationship between grammar and the psychological processing of language. *African Journal Online*, 39, 149-161.
- Mills, A. (1985). The acquisition of German. In D. Slobin (Ed.), *The cross-linguistic study of language acquisition* (Vol. 1) (pp. 141-254). Hillsdale, NJ: Lawrence Erlbaum.
- Muncie, J. (2000). Using written teacher feedback in EFL composition classes. *ELT Journal*, 54, 47-53.
- Muñoz, C. (2011). *The effects of two methods of error correction on L2 writing: The case of acquisition of the Spanish preterite and imperfect*. Doctoral dissertation, Purdue University. West Lafayette, Indiana.
- Nakayama, T. (2002). Learning to write in Japanese: Writing contexts, student performance, and instructional approach. *Babel*, 37, 27-36.
- Nakazawa, K. (2006). *Efficacy and Effects of various types of teacher feedback on student writing in Japanese*. Doctoral Dissertation, Purdue University. West Lafayette, Indiana.

- Nassaji, H. & Fotos, S. (2004). Current developments in research on the teaching of grammar. *Annual Review of Applied Linguistics*, 24, 126-145.
- Nelson, G. & Carson, J. G. (1998). ESL students' perceptions of effectiveness in peer response groups. *Journal of Second Language Writing*, 7, 113-131.
- Newmark, L. & Reibel, D. A. (1968). Necessity and sufficiency in language learning. *International Review of Applied Linguistics*, 6, 145-164.
- Nobuyoshi, J. & Ellis, R. (1993). Focused communication tasks and second language acquisition. *ELT Journal*, 47, 203-210.
- Norris, J. & Ortega, L. (2000). Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning*, 50, 417-528.
- O'Donnell, M. (2011). UAM corpus tool (Version 3.2) [Computer software]. Available from <http://www.wagsoft.com/CorpusTool/>
- Omaggio-Hadley, A. (2001). *Teaching language in context*. Boston: Heinle & Heinle.
- Panova, I. & Lyster, R. (2002). Patterns of corrective feedback and uptake in an adult ESL classroom. *TESOL Quarterly*, 36, 573-595.
- Pavlenko, A. & Lantolf, J. (2000). Second language learning as participation and the (re)construction of selves. In J. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 155-177). Oxford: Oxford University Press.
- Pennington, M. (2001). Grammar and communication: new directions in theory and practice. In E. Hinkel & S. Fotos, (Eds.), *New perspectives on grammar teaching in second language classrooms* (pp. 77-98). Mahwah, NJ: Lawrence Erlbaum Associates
- Perkins, K (1983). On the use of composition scoring techniques, objective measures, and objective tests to evaluate ESL writing ability. *TESOL Quarterly*, 17, 4.

- Pica, T. (1984). Methods of morpheme quantification: their effect on the interpretation of second language data. *Studies in Second Language Acquisition*, 6, 69-78.
- Pica, T. (1994). Questions from the language classroom: Research perspectives. *TESOL Quarterly*, 28, 49-79.
- Pienemann, M. (1998). *Language Processing and Second Language development. Processability Theory*. Philadelphia: Benjamin.
- Pinker, S. (1981). A theory of the acquisition of lexical-interpretive grammars. In J. Bresnan (Ed.), *The mental representation of grammatical relations*. Cambridge, Mass.: MIT Press.
- Butler Platt, C. & MacWhinney, B. (1983). Error assimilation as a mechanism in language learning. *Journal of Child Language*, 10, 401-414.
- Polio, C. (1997). Measures of linguistic accuracy in second language writing research. *Language Learning*, 47, 101-143.
- Polio, C., Fleck, N., & Leder, N. (1998). "If only I had more time": ESL learners' changes in linguistic accuracy on essay revisions. *Journal of Second Language Writing*, 7, 43-68.
- Qi, D. S. & Lapkin, S. (2001). Exploring the role of noticing in a three-stage second language writing task. *Journal of Second Language Writing*, 10, 277-303.
- Radecki, P. M. & Swales, J. M. (1988). ESL student reaction to written comments on their written work. *System*, 16, 355-365.
- Raimes, A. (1983b). *Techniques in teaching writing*. New York, NY: Oxford University Press.
- Raimes, A. (1991). Out of the woods: Emerging traditions in the teaching of writing. *TESOL Quarterly*, 25, 407-430.
- Raimes, A. (1992). *Exploring through writing: A Process Approach to ESL composition*. New York: St. Martin's.

- Rankin, J. & Becker, F. (2006). Does reading the research make a difference? A case study of teacher growth in FL German. *The Modern Language Journal*, 90, 353-372.
- Ritterbusch, R., LaFond, L., & Agustin, M. (2006). Learner difficulties with German case: Implications from an action research study. *Unterrichtspraxis / Teaching German*, 39, 30-44.
- Robb, T., Ross, S., & Shortreed, I. (1986). Salience of feedback on error and its effect on EFL writing quality. *TESOL Quarterly*, 20, 83-93.
- Robinson, P. (Ed.) (2002). Effects of individual differences in intelligence, aptitude and working memory on adult incidental SLA. A replication and extension of Reber, Walkenfield and Hernstadt (1991). In P. Robinson (Ed.), *Individual Differences and Instructed Language Learning*. (pp. 211-266). John. Amsterdam/Philadelphia: Benjamins Publishing Company.
- Rogers, M. (1984). On major types of written error in advanced students of German. *International Review of Applied Linguistics*, 22, 1-39.
- Russell, J. & Spada, N. (2006). The effectiveness of corrective feedback for second language acquisition: A meta-analysis of the research. In J. Norris & L. Ortega (Eds.), *Synthesizing research on language learning and teaching* (pp. 133-164). Amsterdam: Benjamins.
- Rutherford, W. (1988). Aspects of pedagogical grammar. In W. Rutherford & M. Sharwood Smith (Eds.), *Grammar and second language teaching* (pp. 171-185). New York: Newbury House.
- Rutherford, W. & Sharwood Smith, M. (Eds.). (1985). *Grammar and second language teaching* (pp. 171-185). New York: Newbury House.

- Sachs, R. & Polio, C. (2007). Learners' uses of two types of written feedback on a L2 writing revision task. *Studies in Second Language Acquisition*, 29, 67-100.
- Saito, H. (1994). Teachers' practices and students' preferences for feedback on second language writing: A case study of adult ESL learners. *TESL Canada Journal*, 11, 46-70.
- Samimy, K. & Lee, Y-A. (1997). Beliefs about language learning: Perspectives of first year Chinese learners and their instructors. *Journal of the Chinese Language Teachers Association*, 32, 40-60.
- Santos, M., López-Serrano, S., & Manchón, R. M. (2010). The differential effect of two types of direct written corrective feedback on noticing and uptake: Reformulation vs. error correction. *International Journal of English Studies*, 10, 131-154.
- Sato, C. (1986). Conversation and interlanguage development: Rethinking the connection. In R. Day (Ed.). *Talking to learn: Conversation in second language acquisition* (pp. 23-48). Rowley, MA: Newbury House.
- Sauer, S. (1993). Teaching the adjective endings in 1992: A Survey. *Die Unterrichtspraxis / Teaching German*, 26, 56-61.
- Scarcella, R. C. & Oxford, R. L. (1992). *The tapestry of language learning: The individual in the communicative classroom*. Boston: Heinle & Heinle / Thomson.
- Schachter, J. (1974). An error in error analysis. *Language Learning*, 24, 205-215.
- Schachter, J. (1983). A new account of language transfer. In S. Gass & L. Selinker (Eds.), *Language transfer in language learning* (pp.98-111). Rowley, MA: Newbury House.
- Schachter, J. (1988). Second language acquisition and its relationship to universal grammar. *Applied Linguistics*, 9, 220-35.

- Schachter, J. (1991). Corrective feedback in historical perspective. *Second Language Research*, 7, 89-102.
- Schlue, K. (1977). An inside view of interlanguage. In C. Henning (Ed.), *Proceedings of the Los Angeles second language research forum* (pp. 342-348). UCLA TESL Department.
- Schmitt, D. (2006). *Lehr-und Übungsbuch der deutschen Grammatik*. Ismaning: Max Hueber Verlag.
- Schmidt, G. (1990). Teaching German adjectives: Another look. *Die Unterrichtspraxis / Teaching German*, 23, 42-46.
- Schmidt, N. (2002). *An Introduction to Applied Linguistics*. London: Arnold.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11, 129-58.
- Schmidt, R. (1995). Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In R, Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 1-63). Honolulu: University of Hawaii Press.
- Schmidt, R. (2001). Attention. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 3–32). Cambridge: Cambridge University Press.
- Schulz, R. (1996). Focus on form on the foreign language classroom: Students' and teachers' views on error correction and the role of grammar. *Foreign Language Annals*, 29, 343-364.
- Schulz, R. (2001). Cultural differences in student and teacher perceptions concerning the role of grammar instruction and corrective Feedback: USA-Colombia. *Modern Language Journal*, 85, 244–258.

- Schulz, R. (2002). Hilft es die Regel zu wissen um sie anzuwenden? Das Verhältnis von metalinguistischem Bewusstsein und grammatischer Kompetenz in DaF. *Die Unterrichtspraxis / Teaching German*, 35, 15-24.
- Schwartz, B. (1993). On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition*, 15, 147-164.
- Schwartz, M. (1984). Response to writing: a college-wide perspective. *College English*, 46, 55-62.
- Segade, G. (2004). Review of the book Response to student writing, by D. R. Ferris. Retrieved from <http://www.writingproject.org/cs/nwpp/lpt/nwpr/1990>
- Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics*, 10, 219-231.
- Semke, H. (1980). *The comparative effects of four methods of treating free-writing assignments on the second language skills and attitudes of students in college level first year German*. Doctoral dissertation, University of Minnesota.
- Semke, H. (1984). Effects of the red pen. *Foreign Language Annals*, 17, 195-202.
- Sharwood Smith, M. (1991). Speaking to many minds: On the relevance of different types of language information for the L2 learner. *Second Language Research*, 7, 118-132.
- Sharwood Smith, M. (1993). Input enhancement in instructed SLA. *Studies in Second Language Acquisition*, 15, 165-179.
- Sheen, R. (2003). Focus on form-A myth in the making? *ELT Journal*, 57, 225-233.
- Sheen, R. (2006). Comments on R. Ellis's "Current Issues in the Teaching of Grammar: An SLA Perspective" A Reader Responds. *TESOL Quarterly*, 40, 828-832.
- Sheen, Y. (2004). Corrective feedback and learner uptake in communicative classrooms across instructional settings. *Language Teaching Research*, 8, 263-300.



- Sheen, Y. (2006). Exploring the relationship between characteristics of recasts and learner uptake. *Language Teaching Research*, 10, 361–392.
- Sheen, Y. (2007a). The effect of focused written corrective feedback and language aptitude on ESL learners' acquisition of articles. *TESOL Quarterly*, 41, 255-283.
- Sheen, Y. (2008). Recasts, language anxiety, modified output, and L2 learning. *Language Learning*, 58, 835–874.
- Sheen, Y. (2010a). The role of oral and written corrective feedback on SLA. *Studies in Second Language Acquisition*, 32, 169-179.
- Sheen, Y. (2010b). Differential effects of oral and written corrective feedback in the ESL classroom. *Studies in Second Language Acquisition*, 32, 203-234.
- Sheen, Y., Wright, D., & Moldawa, A. (2009). Differential effects of focused and unfocused written correction on the accurate use of grammatical forms by adult ESL learners. *System*, 37, 556-569.
- Sheppard, K. (1992). Two feedback types: Do they make a difference? *RELC Journal*, 23, 103-110.
- Sick, B. (2006). Der Butter, die Huhn, das Teller. Accessed Feb. 20, 2012 from <http://www.spiegel.de/kultur/zwiebelfisch/0,1518,432890,00.html>
- Silva, T. (1993). Toward an understanding of the distinct nature of L2 writing: The ESL research and its implications. *TESOL Quarterly*, 27, 657–677.
- Sinclair, J. & Brazil, D. (1982). *Teacher Talk*. London: Oxford University Press.
- Skehan, P. (1996b). A framework for the implementation of task-based instruction. *Applied Linguistics*, 17, 38-61.
- Skehan, P. (1998). *A cognitive approach to language learning*. Oxford University Press.

- Skehan, P. (2002). Theorizing and updating aptitude. In P. Robinson (Ed.), *Individual Differences and Instructed Language Learning* (pp. 69-93). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Skinner, B. (1957). *Verbal Behavior*. New York: Appleton-Century-Crofts.
- Slobin, D. (1973). Cognitive prerequisites for the development of grammar. In C.A. Ferguson & D. I. Slobin (Eds.), *Studies of Child Language Development* (pp. 240-249). New York: Holt, Rinehard, and Winston.
- Sommers, N. (1982). Responding to student writing. *College Composition and Communication*, 33, 148–156.
- Spada, N. (1997). Form-focused instruction and second language acquisition: a review of classroom and laboratory research. *Language Teaching*, 30, 73-87.
- Spinner, P. & Juffs, A. (2008). L2 grammatical gender in a complex morphological system: The case of German. *IRAL* 46, 4.
- Storch, N. & Wigglesworth, G. (2010). Learners' processing, uptake, and retention of corrective feedback on writing: Case studies. *Studies in Second Language Acquisition*, 32, 303-334.
- Storch, N. (2010). Critical feedback on written corrective feedback research. *International Journal of English Studies*, 10, 29-46.
- Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235–253). Rowley, MA: Newbury House.
- Swain, M. (1993). The output hypothesis: Just speaking and writing aren't enough. *Canadian Modern Language Review, Golden Anniversary Issue.50*, 158–164.

- Swain, M. (1995). Three functions of output in second language learning. In G. Cook & B. Seidlhofer (Eds.), *Principle and practice in applied linguistics: Studies in honour of H. G. Widdowson* (pp. 125-144). Oxford: Oxford University Press.
- Swain, M. (1998). Focus on form through conscious reflection. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 64-81). Cambridge University Press.
- Swain, M. (2000). French immersion research in Canada: Recent contributions to SLA and applied linguistics. *Annual Review of Applied Linguistics*, 20, 199–212.
- Swain, M. & Lapkin, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics*, 11, 371-391.
- Szagan, G. (2004). Learning by ear: on the acquisition of case and gender marking by German-speaking children with normal hearing and with cochlear implants. *Journal of Child Language*, 31, 1-30.
- Szagan, G., Stumper, B., Sondag, N., & Franik, M. (2007). The acquisition of gender marking by young German-speaking children: Evidence for learning guided by phonological regularities. *Journal of Child Language*, 34, 445-471.
- Taeschner, T. (1983). *The sun is feminine: A study on language acquisition in bilingual children*. Berlin: Springer Verlag.
- Takens, M. (2008). *The acquisition of grammatical gender by second language learners of Dutch: Evidence from perception*. MA Thesis, Utrecht University.
- Tarone, E. (1988). *Variation in interlanguage*. London: Edward Arnold.
- Teichert, H. & Teichert, L. (2005). *Allerlei zum Lesen*. (2nd ed.). Boston: Houghton Mifflin Company.

- Thouësny, S. (2011). *Modeling second language learners' interlanguage and its variability: A computer-based dynamic assessment approach to distinguishing between errors and mistakes*. Doctoral dissertation, Dublin City University.
- Tomlin, R. & Villa, V. (1994). Attention in cognitive science and second Language acquisition. *Studies in Second Language Acquisition*, 16, 183-203.
- Tracy, R. (1986). The acquisition of case morphology in German. *Linguistics*, 24, 47-78.
- Trahey, M. & White, L. (1993). Positive evidence and preemption in the second language classroom. *Studies in Second Language Acquisition*, 15, 181-204.
- Truscott, J. (1996). The case against grammar correction in L2 writing classes. *Language Learning*, 46, 327-369.
- Truscott, J. (1998). Noticing in second language acquisition: A critical review. *Second Language Research*, 14, 103-135.
- Truscott, J. (1999). What's wrong with oral grammar correction. *Canadian Modern Language Review*, 55, 437-456.
- Truscott, J. (2004). Evidence and conjecture on the effects of correction: A response to Chandler. *Journal of Second Language Writing*, 13, 337-343.
- Truscott, J. (2007). The effect of error correction on learners' ability to write accurately. *Journal of Second Language Writing*, 16, 255-272.
- Truscott J. & Hsu, A.Y. (2008). Error correction, revision, and learning. *Journal of Second Language Writing*, 17, 292-305.
- Van Beuningen, C., De Jong, N., & Kuiken, F. (2008). The effect of direct and indirect corrective feedback on L2 learners' written accuracy. *ITL International Journal of Applied Linguistics*, 156, 279-296.

- Vandergrift, L. (1986). Second language writing and correction: Toward an improved model for composition correction. *Canadian Modern Language Review*, 42, 658-667.
- VanPatten, B. (1988). How juries get hung: Problems with the evidence for a focus on form in teaching. *Language Learning*, 38, 243-60.
- VanPatten, B. (1990). Attending to form and content in the input. *Studies in Second Language Acquisition*, 12, 287-301.
- VanPatten, B. (1996). *Input processing and grammar instruction in second language acquisition*. Norwood, NJ: Ablex.
- VanPatten, B. (2003). *From input to output: A teacher's guide to second language acquisition*. McGraw Hill.
- Vigil, F. & Oller, J. (1976). Rule fossilisation: A tentative model. *Language Learning*, 26, 281-95.
- Vyatkina, N. (2010). The effectiveness of written corrective feedback in teaching beginning German. *Foreign Language Annals*, 43, 671-689.
- Vyatkina, N. (2011). Writing instruction and policies for written corrective feedback in the basic language sequence. *L2 Journal*, 3, 63-92.
- White, L. (1987). Against comprehensible input: The input hypothesis and the development of second language competence. *Applied Linguistics*, 8, 95-110.
- White, L. (1991). Adverb placement in second language acquisition: Some effects of positive and negative evidence in the classroom. *Second Language Research*, 7, 133-61.
- Wigglesworth, G. (2008). Measuring accuracy in second language performance. Paper presented at the Annual Conference of Teachers of English to Speakers of Other Languages (TESOL), New York.

- Wingfield, R. (1975). Five ways of dealing with errors in written compositions. *English Language Teaching Journal*, 29, 311-313.
- Wittek, A. & Tomasello, M. (2005). German-speaking children's productivity with syntactic constructions and case morphology: Local cues act locally. *First language*, 25, 103-125.
- Wolfe-Quintero, K., Inagaki, S., & Kim, H. Y. (1998). *Second language development in writing: Measures of fluency, accuracy, and complexity* (Tech. Rep. No. 17). Honolulu: National Foreign Language Resource Center.
- Xu, C. (2009). Overgeneralization from a narrow focus: A response to Ellis et al. (2008) and Bitchener (2008). *Journal of Second Language Writing*, 18, 270-275.
- Yang, Y. & Lyster, R. (2010). Effects of form-focused practice and feedback on Chinese EFL learners' acquisition of regular and irregular past tense forms. *Studies in Second Language Acquisition*, 32, 235-263.
- Young, R. (1991). *Variation in interlanguage morphology*. New York: Peter Lang.
- Yoshida, N. (1983). Process-oriented instruction in composition. *ORTESOL Journal*, 4, 18-36.
- Zaenen, A., Maling, J., & Thrainsson, H. (1985). Case and grammatical functions: The Icelandic passive. *Syntax and Semantics*, 24, 95-136.
- Zamel, V. (1985). Responding to student writing. *TESOL Quarterly*, 19, 79-98.
- Zock, M., Franropoulo, G., & Laroui, A. (1988). Language learning as problem solving: Modelling logical aspects of Inductive learning to generate sentences in French by man and machine. *International Conference on Computational Linguistics. Coling Budapest* (Vol.2).

## APPENDICES

### Appendix 1. Background information questionnaire

The information you give on this sheet is for purposes of identification only. It will be used in a study about effective teaching of German as a foreign language and used in no other way.

Name: \_\_\_\_\_ Germ \_\_\_\_\_ Section \_\_\_\_\_

Phone: \_\_\_\_\_ Sex (circle): M, F Year of Birth: \_\_\_\_\_

Year (circle one): Freshman, sophomore, Junior, Senior, Graduate.

Major: \_\_\_\_\_ Minor: \_\_\_\_\_

Amount of German study previous to this semester?

\_\_\_\_\_ Semesters in college \_\_\_\_\_ years in high school

Grade you received in the last German course: \_\_\_\_\_

Does anyone in your immediate family speak German? \_\_\_\_\_ Yes \_\_\_\_\_ No

Do other family members or close friends speak German? \_\_\_\_\_ Yes \_\_\_\_\_ No

Approximately how many weeks have you spent in a German-speaking country?

\_\_\_\_\_ (Weeks) \_\_\_\_\_ (Country or Countries)

For following questions, please circle the most appropriate number on the scale:

How would you personally rate your own ability to learn another language?

Very high) 5 4 3 2 1 (very low

How would you personally rate your own ability to speak German right now?

Very good) 5 4 3 2 1 (very poor

How would you personally rate your own ability to write German right now?

Very good) 5 4 3 2 1 (very poor

Do you plan to continue your study of German after this semester?

\_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Undecided

Do you like German? Why?

### Appendix 2. Background questionnaire data

ID	Sex	Age	Ability to learn another language	Ability to speak German?	Ability to write German?	Plan to continue German study	Like German? (key words)
U3	F	21	2	3	3	No	Yes
U6	M	23	4	3	4	U	Yes
U7	F	23	4	4	3	Yes	Yes
U9	M	20	2	3	3	No	Yes. Enjoy speaking to exchange students
U10	M	20	4	2	4	No	Interesting but not my top priority
U11	M	20	4	4	4	Yes	Yes.
U12	M	24	3	2	2	No	Much of it is word memorization which is not enjoyable.
U13	M	22	4	3	4	No	Yes.
U15	M	23	3	3	4	Yes	Yes, it should help me with career goals.
U18	F	21	4	3	4	No	Yes. Grammatical structure is straight forward, many cognates. Articles aren't my favorite.
C27	F	22	4	3	4	U	Yes, enjoy other languages.
C28	F	20	4	3	2	Yes	It's fun.
C29	F	21	4	4	4	No	German is an organized language.
C30	F	21	4	2	3	Yes	I love the sound and the culture. Have family there.
C31	F	n/a	5	3	4	U	Yes. German is fun.
C33	F	34	3	3	2	Yes	Yes, similar enough to English.
C34	M	21	4	3	4	Yes	Yes, my family is mainly German. Useful for the study of psychology.
C35	F	22	3	3	3	U	Yes, it will be need if I attend grad school for art history.
C37	F	22	2	2	2	N	No. it's hard to learn.
C38	M	21	5	4	3	No	Yes.
F44	F	20	4	3	3	No	Yes. I am part German.
F46	M	23	4	2	3	Yes	Yes.



F47	M	22	3	3	3	No	Yes, interesting language to learn. I love the way it sounds. Interesting to learn the different structures.
F48	M	20	3	3	4	No	Yes, it's interesting and I like the culture.
F49	F	21	3	3	2	No	Yes, it's a very interesting and beautiful language. German culture is awesome. I want to go to Germany.
F51	M	20	3	3	4	U	Yes.
F52	M	19	2	2	2	U	Yes, I enjoy the culture. I do find it difficult to learn, though.
F53	M	27	3	3	2	U	Yes, it makes me feel like I am kind of multi-cultured.
F54	M	22	3	2	4	Yes	Yes, I am fascinated by German and enjoy learning the language.

### Appendix 3. Essay first draft grading key (70 Points Possible)

#### I. Grammar – Based on Percentage of Correctness

##### Verb Usage 7-0 pts

(Correct conjugation, correct usage of helping verbs, tenses, separable prefixes, past participles)

\_\_\_\_\_

##### Nouns and Adjectives 7-0 pts

(Case: nominative, accusative, dative & genitive; gender: *der, die, das*; endings)

\_\_\_\_\_

##### Word choice 7-0 pts

(Correct word usage, including prepositions and conjunctions)

\_\_\_\_\_

##### Sentence organization 7-0 pts

(Word order, including verb in correct position, commas, structural accuracy)

\_\_\_\_\_

##### Spelling 7-0 pts

(Including capitalization and umlauts)

\_\_\_\_\_

#### II Content and organization

##### Fluency (Amount of comprehensible words written)

Points: 7 at or beyond the required length

5 80% of required length

3 50% of required length

0 below 50 % of required length

\_\_\_\_\_

##### Complexity (Text structure, using new grammatical features)

Points: 7-6 very complex, using a lot of the new grammatical features

5-4 complex, using some of the new grammatical features

3-1 little complexity, using a few of the new grammatical features

0 no complexity, using none of the new grammatical features

\_\_\_\_\_

##### Creativity (Going beyond just answering the question, engaging narrative, richness of vocab)

Points: 7-6 very creative, innovative, using rich vocab

5-4 creative, some vocab variety

3-1 little creativity, little vocab variety

0 no creativity, limited vocab

\_\_\_\_\_

##### Relevance and meaning (Relation to topic, does it make any sense?)

Points: 7-6 everything written is meaningful and clearly related to the topic

5-4 most of the things written are meaningful and related to the topic

3-1 partially makes sense and minimally related to the topic

0 nothing makes sense, not related to the topic at all.

\_\_\_\_\_

##### Organization (Was the essay structured well)

Points: 7-6 very well organized with clear structure.

5-4 good organization, basic structure

3-1 limited organization.

0 no organization

\_\_\_\_\_

#### TOTAL POINTS

## Appendix 4: Essay second draft grading key (30 Points Possible)

**I. Grammar:** Based on the corrections made:

**Cases 3-0 pts**

(Correct usage of adjective endings:

nominative, accusative, dative & genitive cases) \_\_\_\_\_

**Word Order 3-0 pts**

(Time, Causal, Manner, Place. Verb in correct position, etc.) \_\_\_\_\_

**Verb Usage 3-0 pts**

(Correct conjugation, correct usage of helping verbs, tenses, separable prefixes, past participles) \_\_\_\_\_

**Spelling 3-0 pts**

(Includes capitalization, spelling, and punctuation when applicable) \_\_\_\_\_

**Vocabulary 3-0 pt**

(Correct word usage and correct articles) \_\_\_\_\_

**II Content:** Based on the corrections made:

**Complexity** (sentence structure, using new grammatical features)

Points: 3 very complex, using a lot of the new grammatical features

2 complex, using some of the new grammatical features

1 little complexity, using a few of the new grammatical features

0 no complexity, using none of the new grammatical features \_\_\_\_\_

**Creativity** (Going beyond just answering the question, richness of vocab)

Points: 3 very creative, innovative, using rich vocab

2 creative, some vocab variety

1 little creativity, little vocab variety

0 no creativity, limited vocab \_\_\_\_\_

**Relevance** (relation to topic and answer)

Points: 3 everything written is clearly related to the topic

2 most of the things written were related to the topic

1 minimally related to the topic

0 not related to the topic at all. \_\_\_\_\_

**Meaning** (Does it make any sense!)

Points: 3 Everything written made sense

2 Most of the things written, made sense

1 Partially made sense

0 Nothing made sense \_\_\_\_\_

**Organization** (Was the essay structured well)

Points: 3 Very well organized with clear structure.

2 Good organization, basic structure

1 Limited organization.

0 No organization \_\_\_\_\_

\_\_\_\_\_/30 + \_\_\_\_\_/70 First Draft = **TOTAL POINTS:** \_\_\_\_\_

## Appendix 5: Essay first draft grading key for the control group

**(60 Points Possible)**

**Fluency** (Amount of comprehensible words written)

Points: 20 at or beyond the required length

18 80% of required length

15 50% of required length

10 below 50 % of required length

\_\_\_\_\_

**Complexity** (Text structure, using new grammatical features)

Points: 8-6 very complex, using many new grammatical features

5-3 complex, using some of the new grammatical features

2-1 little complexity, using a few of the new grammatical features

0 no complexity, using none of the new grammatical features

**Creativity** (Going beyond just answering the question, engaging narrative, richness of vocab)

Points: 8-6 very creative, innovative, using rich vocab

5-3 creative, some vocab variety

2-1 little creativity, little vocab variety

0 no creativity, limited vocab

**Relevance** (Relation to topic)

Points: 8-6 everything written is clearly related to the topic

5-3 most of the things written were related to the topic

2-1 minimally related to the topic

0 not related to the topic at all.

**Organization** (Was the essay structured well)

Points: 8-6 very well organized with clear structure.

5-3 good organization, basic structure

2-1 limited organization.

0 no organization

**Accuracy and comprehensibility** (Do grammar mistakes impair meaning?)

Points: 8-6 few non-systematic mistakes that do not affect meaning

5-3 some mistakes that impair meaning to some extent

2-1 many mistakes that impair meaning

0 almost incomprehensible

\_\_\_\_\_/40 + \_\_\_\_\_/60 First Draft =      **TOTAL POINTS:** \_\_\_\_\_

## Appendix 6. Essay second draft grading key for the control group

**(40 Points Possible)**

**Fluency** (Amount of comprehensible words written)

Points: 10 at or beyond the required length

8 80% of required length

5 50% of required length

0 below 50 % of required length

\_\_\_\_\_

**Complexity** (Text structure, using new grammatical features)

Points: 6-5 very complex, using many new grammatical features

4-3 complex, using some of the new grammatical features

2-1 little complexity, using a few of the new grammatical features

0 no complexity, using none of the new grammatical features

**Creativity** (Going beyond just answering the question, engaging narrative, richness of vocab)

Points: 6-5 very creative, innovative, using rich vocab

4-3 creative, some vocab variety

2-1 little creativity, little vocab variety

0 no creativity, limited vocab

**Relevance** (Relation to topic)

Points: 6-5 everything written is clearly related to the topic

4-3 most of the things written were related to the topic

2-1 minimally related to the topic

0 not related to the topic at all.

**Organization** (Was the essay structured well)

Points: 6-5 very well organized with clear structure.

4-3 good organization, basic structure

2-1 limited organization.

0 no organization

**Accuracy and comprehensibility** (Do grammar mistakes impair meaning?)

Points: 6-5 few non-systematic mistakes that do not affect meaning

4-3 some mistakes that impair meaning to some extent

2-1 many mistakes that impair meaning

0 almost incomprehensible

\_\_\_\_\_/40 + \_\_\_\_\_/60 First Draft = TOTAL POINTS:

\_\_\_\_\_

## **Appendix 7. Essay correction code**

### **Verb mistakes**

**VF** – verb form, e.g. subject-verb agreement (*er gehen* instead of *er geht*)

**Aux** – inaccurate auxiliary verb (e.g. *haben* instead of *sein*)

**Sep** – separable/inseparable verb prefixes

**T** - verb tense (e.g. present instead of past tense)

**Ref** – reflexive particle missing/unnecessary/inaccurate (e.g. *dich* instead of *sich*)

### **Noun and adjective mistakes**

**C** - case, e.g. Nominativ, Akkusativ

**G** - gender, e.g. der, die, das

**E** - endings (often adjective endings)

**N** - number (singular/plural)

### **Word choice mistakes**

**W** - problem with word choice or missing word

**Prep** - inaccurate/unnecessary/missing preposition

**Conj** - inaccurate/unnecessary/missing conjunction

### **Sentence organization mistakes**

**WO** - word order (often verb position in the sentence)

**Punc** – punctuation (often missing/unnecessary comma)

**NS** – new structure needed: meaning is not clear; rewrite sentence/clause

### **Spelling mistakes**

**Sp** - spelling, also umlauts and capitalization

## Appendix 8. Example of paper-and-pencil WCF provided to the focused group

FTIE2D

German 216

02/08/09

### Interpretation ueber "Verfahren"

In die Geschichte "Verfahren" ein Student von Ausland kommt nach ein deutsch-  
 spraechiger Land. Er ist am Hafen gekommen, und der Student winkte einem Taxifahrer. Der  
 Student fragte den Fahrerauf auf ein billiges Hotel zu fahren, und wann der Fahrer hat "Billig?"  
 gefragt er sagte "Nicht zu teuer." Der Fahrer beginnt fahren, und der Student schaut die  
 Strassen und Autos aus der Wand. Er lasz die Wahleplakate dass die Strasse saeumen hat. Die  
 Wahleplakate sagte "Kreuzchen fuer ... (A oder B oder C)" und dann seine Partei. Er kam zu imm  
 Der Student war sehr muede und er nickte ein. Wann der Fahrer weckte den Student auf, das  
 Taxi war vor eine Parkbank. Er sagte "Billig". Der Student sagte "dreiszig darf es schon kosten."  
 Und dann der Fahrer macht seine Geldboerse auf. Ich denke, dass der Fahrer den Student zu  
 einer Parkbank bringt, weil entweder er wollte einen Auslander aergern und verwirren, oder er  
 missverstand den Student, wann er "billig" sagte. Am Ende macht der Fahrer seine Geldboerse  
 auf, und ich denke, dass er macht es auf weil er wollte der Student einzukaufen erstes. Ich  
 denke, der Autor wollte Verfahren *muddled* oder *hopeless* auf Englisch bedeuten. Deise  
 Bedeutung leuchtet mir ein, weil der Student war sehr verwirrt, wann der fahre weckte ihn auf.  
 Ich denke dass danach das Taxifahrer werde entweder der Student adern, oder werde ihn  
 kidnappen. Der Taxifahrer war ein Bisschen gruselig und er werde ein Kidnapping oder andere  
 boese Sachen tun. Der Taxifahrer auch koennte den Student zu ein Hotel bringen aber Ich  
 glaube dass er wird nicht.

Student is a vent now.

## Appendix 9. Example of electronic WCF provided to the focused group

Interpretation II	
<p>Warum bringt der Taxifahrer den Studenten zu einer Parkbank? Ich weiss nicht, aber vielleicht hat der Taxifahrer eine schlechtes tag. Vielleicht der Taxifahrer Studenten mögen nicht. Ich bin der meinung das, Fehlkommunikation ist schuld.</p>	<p>Comment [MSOffice1]: Akku zum nächsten Tag</p>
<p>Der Taxifahrer am Ende der Geschichte macht seine Geldbörse auf denn er will den Student bezahlen. Der Taxifahrer hat seine dienst geleistet and will Geld. In die bild es ist dunkel, vielleicht er nach hause will zu gehen.</p>	<p>Comment [MSOffice2]: C</p>
<p>Ich weiss nicht wie das geschichte weitergehen konnte. Ich persönlich glaube dass, der Student Zurück ins tai einsteigt und erklart. Wenn der Taxifahrer sein Fehler sehe ein, vielleicht fährt er den Student irgendwo mehr angemessen, zum beispiel zu einen billigen hotel.</p>	<p>Comment [MSOffice3]: die            Comment [MSOffice4]: C            Comment [MSOffice5]: C und            Comment [MSOffice6]: zu einem billigen</p>
<p>Nein, ich glaube dass, der Taxifahrer seine dienst nicht getan hat. Aber, ich glaube dass der Taxifahrer denkens er sein dienst gatan hat. Ein Park ist nicht wo der Student will zu gehen, aber der Taxifahrer hat ihm irgendwo billig fahren. Vielleicht der Student seine Lektion lernen, wenn man im einen fremd Stadt ist, benutzt man sich nicht einen Taxi mit einen bose fahrer.</p>	<p>Comment [MSOffice7]: C            Comment [MSOffice8]: C            Comment [MSOffice9]: C            Comment [MSOffice10]: in einer fremden            Comment [MSOffice11]: C</p>



## Appendix 10. Example of WCF provided to the unfocused group

Kapitel 4 Schreiben

Ich freue <sup>nich</sup> sehr einfach <sup>er</sup>. Ich muss nicht so oft „nein“ sagen. Aber ich sehr nett und freundlich <sup>bin</sup>, wenn ~~muss~~ <sup>sagen muss.</sup> ich „nein“ ~~sage~~. Viele Zeiten <sup>Mal habe ich</sup> einen schlechten Geschenk anbieten, dann ich bloß das Geschenk behalten. Es ist überaus unhöflich wenn Leute Geschenke ablehnen. Typisch <sup>verb?</sup> dieser Leute einen besser Geschenk verlangen.

Mein Lieblings <sup>one word</sup> Weihnachtsgeschenk ist meine ~~Hund~~. Als ~~hatte~~ <sup>bin</sup> ich zehn Jahre <sup>alt</sup> war, <sup>haben</sup> meinen Eltern <sup>ihn mir</sup> gegeben. Er hatte „Doggie“ geheißten. Aber meine Familie möchte dieser Name nicht. Sie hatten einige andere Namen <sup>wie</sup> „Appi“. Während freue mich nicht dieser ?

Name anbackte.

Als Kind hatte ich an den Weihnachtsmann geglaubt. Meine Eltern <sup>conj.</sup> war <sup>?</sup> ausgezeichnet bei Weihnachtsmann auftreten. Ein <sup>hat</sup> Jahr <sup>w</sup> mein <sup>W</sup> Vater an der Teppich vor der Feuerstelle Kohle bespritzte. Meine Schwester und ich glaubten dass <sup>der</sup> an ihre Schuhe Weihnachtsmann Kohle hatte. Wir <sup>in ihren Schuhen gesteckt</sup> war Überzeugung dass in den Nacht Weihnachtsmann bereiste. Wann wurde ich <sup>war ich</sup> Alter Weihnachtsmann nicht so glaubwürdig <sup>w</sup> war. Dann eine Weihnachten sah ich ein Preisschild <sup>w</sup> an ein Geschenk! Ich hatte ein Einsehen! ?

<sup>Der</sup> Weihnachtsmann kauft keine Geschenke <sup>ist</sup> an Ich glaubte „Das ist Schade“! Das war der Tag <sup>wo</sup> der Glaube <sup>SP</sup> an Weihnachtsmann für mich abbrechen.

### Appendix 11. Example of WCF provided to the control group

C28feca

German 216  
E2D

Well done with verb placement and conjunctions! 😊

Der Taxifahrer bringt der Student zu einer Parkbank, weil es der einzige billige Platz zu schlaffen ist. Ich denke, dass alles sehr teuer in dieser Stadt ist. Er macht seiner Geldbörse auf um den Student zu zeichnen, dass er ihn bezahlen muss. Es ist nötig, dass die Geldbörse leer ist. Vielleicht ist der Taxifahrer arm.

Der Titel den Geschichte ist Verfahren, weil der Studenten kein Ausgang hat; er ist in einer Stadt, die er nicht kennt gegangen. Er kennt niemand and weiß nicht was für ein Sprach man da spricht. Der Student ~~am~~ ist in eine verfahrene Position.

Ich bin der Meinung, dass der Taxifahrer nicht böse ist. Obwohl er nicht viel sagt, hat er ein großes Herz. Hoffentlich wird er der Student zu seinem Haus bringen. Am nächstem Tag wird er den Student zur Universität fahren, so dass er sich immatrikulieren kann. Am Ende werden Sie guten Freunden sein. Nach zwei Wochen, wird der Student ein sehr schönes Mädchen (Carla) kennenlernen. Er wird dieses Mädchen verlieben. Mit Zeit lernt er, dass dieses Mädchen die Tochter den Taxifahrer ist. Sie heiraten und bilden eine große Familie. Der Taxifahrer wird mit dem Ehepaar wohnen.

\* One or two spelling errors!  
\* a few adjective endings (relating to case) to watch out for)

**Appendix 12. Attitude questionnaire**

1. Do you carefully read your teacher's comments and corrections?
2. What does your teacher comment the most about (content, writing, grammar, etc.)?
3. Do you use your teacher's suggestions when you revise your paper and write the final draft?
4. Do you use your teacher's suggestions when you write your next paper?
5. Do you usually understand your teacher's comments and corrections?
6. What do you do if you do not understand your teacher's comment?
7. Do you feel that your teacher's comments have helped you to succeed in this course and improved your writing? Why and why not?
8. I found it demoralizing to have had each and every one of my errors pointed out to me.  
a. strongly agree.   b. somewhat agree.   c. somewhat disagree   d. strongly disagree
9. In what ways do you wish your teacher would change or improve her comments?  
a. focus on content   b. focus on a few grammar errors   c. correct all grammar errors  
d. other, please specify: \_\_\_\_\_
10. Do you believe that your writing has improved because of the writing practice?
11. Do you believe that your general language skills have improved because of the writing practice?

### Appendix 13. Examples of inter-annotator mismatches

(1) U3T3: *Der Mann war ein Garage für die Lokomotive stellen.*

TH: *Der Mann stellte die Lokomotive in eine Garage.*

Meaning: The man was putting the locomotive into a garage.'

A1's annotation: *Der [nom-def-det] Mann war ein [acc-dir-prep] Garage für die Lokomotive [acc-obj] stellen.*

A2's annotation: *Der [nom-def-det] Mann war ein [acc-obj] Garage für die [acc-prep] Lokomotive stellen.*

Reason for the mismatch: A1's annotation was based on the target hypothesis whereas A2's annotation was based on the surface error.

(2) F53T2: *Ich denke es ist Weihnachten.*

TH: *Ich denke, es ist Weihnachten.*

Meaning: I think it is Christmas.

A1's annotation: *Ich [nom-pron] denke es ist Weihnachten.*

A2's annotation: *Ich [nom-pron] denke es [nom-pron] ist Weihnachten.*

Reason for the mismatch: A2 counted *es* as a pronoun occasion in the nominative case.

However, the researcher did not annotate *es* when it is used as a placeholder (e.g. *Es ist kalt.*

'It is cold.' *Es gibt viele Leute.* 'There are a lot of people.') because there is no difference in cases used this way. The pronoun *es* was annotated only when it was used to refer the aforementioned noun (e.g. *Er kaufte eine Lokomotive. Es ist groß.* 'He bought a locomotive. It is big.')

(3) F46T3: *Der Erzähler fergt viele Fragen über der Lok.*

TH: *Der Erzähler fragt viele Fragen über die Lok.*

Meaning: The narrator asks many questions about the locomotive.

A1's annotation: Der [nom-def-det] Erzähler fergt [acc-obj-zero] viele [adj-str] Fragen über  
der [acc-prep] Lok.

A2's annotation: Der [nom-def-det] Erzähler fergt [acc-obj-zero] viele [adj-str] Fragen über  
der [acc-dir-prep] Lok.

Reason for mismatch: A2 coded „über“ as a two-way preposition in the accusative.

However, since it was not used here to refer to direction or space, she agreed with the researcher to code it as an error in connection with an accusative preposition instead of accusative directional preposition.

(4) F43T2: *Die Kinder spielen mit ihren Puppe und viele Bonbons essen.*

TH: *Die Kinder spielen mit ihrer Puppe und essen viele Bonbons;*

Or: *Die Kinder spielen mit ihren Puppen und essen viele Bonbons.*

Meaning: The children play with their dolls/doll and eat a lot of candy'.

A1's annotation: *Die* [nom-def-det] *Kinder spielen mit ihren* [dat-prep] *Puppe* *und viele* [adj-str] *Bonbons essen.*

A2's annotation: *Die* [nom-def-det] *Kinder spielen mit ihren* [dat-prep] *Puppe* [dat-noun-end] *und viele* [adj-str] *Bonbons essen.*

Reason for mismatch: A2 annotated *Puppe* as an error in the dative-noun-ending [dat-noun-end] category based on the hypothesis that it was a plural noun -‘dolls’. However, A1 did not code this word but instead coded *ihren* as an error in the dative-preposition [dat-prep] category based on the hypothesis that *Puppe* was used as a singular noun -‘doll’. Both kinds of annotation are valid.

## Appendix 14. IRB permission

# KU RESEARCH & GRADUATE STUDIES

The University of Kansas

12/15/08  
HSCL #17034

Nina Vyatkina  
Germanic Languages & Lit.  
2080 Wescoe Hall  
vyatkina@ku.edu

The Human Subjects Committee Lawrence reviewed your research update application for project

17034 Vyatkina (GERMANIC LANG & LIT) Collection and Analysis of a Longitudinal Corpus of Learner German

and approved it through an expedited review process according to 45 CFR 46.110 (b)(2) minor changes (or no changes) in a previously approved project. Your project has continued approval to 12/4/2009. Approximately one month prior to 12/4/2009, HSCL will send you a Status Report request, which will be necessary for you to complete in order to obtain continued approval for the next twelve months. Please note that you must stop data gathering if you do not receive continued HSCL approval. Notify HSCL of any changes you wish to make during this approval period.

HSCL approves your revised consent form.

Please use the HSCL "approval stamp" on your consent forms. Just cut and paste. You may resize and reshape the text to fit your documents.

**Approved by the Human Subjects Committee Lawrence (HSCL) on 12/15/08. Approval expires one year from 12/4/08. HSCL#17034**

If you complete your project before the renewal date, please notify HSCL. Thank you for providing us with this update information.

Sincerely,



David Hann  
HSCL Coordinator  
University of Kansas

## Appendix 15. Consent form

Approved by the Human Subjects Committee Lawrence Campus, University of Kansas. Approval expires one year from 12/4/2008. HSCL #17034

### TEAR-OFF INFORMED CONSENT STATEMENT

Name of the Study:                Collection and analysis of a longitudinal corpus of learner German  
 Principal Investigator:        Nina Vyatkina  
 Other Investigators:           Pia Zwegers, Sonja Sun, Joe Cunningham

### INTRODUCTION

The Department of Germanic Languages and Literatures at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with this unit, the services it may provide to you, or the University of Kansas.

### PURPOSE OF THE STUDY

We are conducting this study to investigate how people learn foreign languages over longer periods of time. This research is expected to provide information on typical stages of German language learning process and proficiency-level related difficulties. Based on these findings, teaching methods and materials may be improved.

### PROCEDURES

If you agree to participate, we will track your development in German as long as you stay enrolled in the KU German program. You will not be asked to complete any assignments beyond the regular course work. The researchers will examine your written and oral productions in the course such as essays, written tests, homework, audio-recordings of your oral test productions, answers to course surveys, as well as your grade information and class participation information.

Only the researchers will have access to your productions. All electronic (written and oral) recordings will be stored in the principal investigator's password-protected computer; and all paper-and-pencil productions will be stored in her locked cabinet. While the electronic data will be stored indefinitely, the manual writing samples will be destroyed after 5 years upon the project completion.

### RISKS

There are no risks in participating in this research beyond those experienced in everyday life.

### BENEFITS

There are no direct benefits to you, but you will have had the opportunity to contribute to a worthwhile research endeavor that may improve foreign language teaching and learning practices.

#### PAYMENT TO PARTICIPANTS

No compensation will be provided.

#### PARTICIPANT CONFIDENTIALITY

Your name will not be associated in any way with the information collected about you or with the research findings from this study. The researchers will use a study number or a pseudonym instead of your name. Only the principal investigator and the research assistants will have access to your information. The researchers will not share information about you unless required by law or unless you give written permission.

Permission granted on this date to use and disclose your information remains in effect indefinitely. By signing this form you give permission for the use and disclosure of your information for purposes of this study at any time in the future.

#### REFUSAL TO SIGN CONSENT AND AUTHORIZATION

You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from the University of Kansas or to participate in any programs or events of the University of Kansas. However, if you refuse to sign, you cannot participate in this study.

#### CANCELLING THIS CONSENT AND AUTHORIZATION

You may withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use and disclose information collected about you, in writing, at any time, by sending your written request to: Nina Vyatkina, Germanic Languages and Literatures, 2080 Wescoe Hall. If you cancel permission to use your information, the researchers will stop collecting additional information about you. However, the research team may use and disclose information that was gathered before they received your cancellation, as described above.

QUESTIONS ABOUT PARTICIPATION should be directed to:

Nina Vyatkina  
Principal Investigator  
Dept. of Germanic Languages and Literatures  
2080 Wescoe Hall  
University of Kansas  
Lawrence, KS 66045  
(785)864-9178

If you have any questions about your rights as a research participant you may contact the Human Subjects Committee Lawrence Campus (HSCL) office at 864-7429 or write to the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas, 66045-7563, email [dhann@ku.edu](mailto:dhann@ku.edu).



KEEP THIS SECTION FOR YOUR RECORDS. IF YOU WISH TO PARTICIPATE TEAR OFF THE FOLLOWING SECTION AND RETURN IT TO THE RESEARCHERS

-----  
Collection and analysis of a longitudinal corpus of learner German  
 (Project/Study Title)

HSCL # 17034 (Provided by HSCL office)

**PARTICIPANT CERTIFICATION:**

If you agree to participate in this study please sign where indicated, then tear off this section and return it to the investigator(s). Keep the consent information for your records.

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study and the use and disclosure of information about me for the study.

I agree to take part in this study as a research participant. By my signature I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

\_\_\_\_\_  
 Type/Print Participant's **Name**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
 Participant's **Signature** or Parent/Guardian Signature if Participant is less than 18 years old or an adult under care of a guardian.