

DISSERTATION

USING COMPUTER MEDIATION, PEER REVIEW, AND A WRITING PROCESS IN A  
JAPANESE SECOND LANGUAGE WRITING CLASS

Submitted by

Ronald L. Kibler

School of Education

In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

Summer 2015

Doctoral Committee:

Advisor: William Timpson

Co-Advisor: Don Quick

Douglas Flahive

Laurie Carlson

Copyright by Ronald L. Kibler 2015

All Rights Reserved

## ABSTRACT

### USING COMPUTER MEDIATION, PEER REVIEW, AND A WRITING PROCESS IN A JAPANESE SECOND LANGUAGE WRITING CLASS

The writing process approach has become an increasingly popular method of writing instruction in “English as a Foreign Language” (EFL) classrooms. However, in traditional, teacher fronted classrooms it is difficult to provide students with maximum opportunities and support to fully engage in the writing process approach. This quantitative study analyzed archival data collected from a Japanese university EFL composition course that used a combination of computer mediation and peer response and evaluation to maximize the amount of time the participants spent being engaged in the writing process approach. It was possible to examine four outcomes related to the course: writing improvement, engagement, motivation, and writing achievement.

The analysis first addressed whether the methods of the course lead to writing improvement by looking at the differences between pre and post-tests to measure writing improvement in terms of the complexity, accuracy, and fluency (CAF) of students’ short essay writing. The results of paired t-tests showed that there was a statistically significant increase in complexity and fluency, but not accuracy.

Then the analysis then looked at the association between writing improvement (CAF), engagement, motivation, and writing achievement, using correlations and a hierarchical multiple regression. The results showed that there was a statistically significant, positive correlation between accuracy and writing achievement, a statistically significant negative correlation

between linguistic self-confidence motivation and writing achievement, and that accuracy was a statistically significant predictor of writing achievement.

This study has practical implications for second language (L2) writing classrooms. Primary among these are the potential for using computer mediation to facilitate peer learning. It allowed for high levels of writing intensity and seamless, transparent movement through the various stages of the writing process approach. In this study the combination of computer mediation, peer work, and writing process made it possible for the teacher to step aside, allowing the students to engage in social constructivist learning that supported positive learning outcomes.

## ACKNOWLEDGEMENTS

This dissertation is a milestone for me that comes just as my path in life is set to take a new turn. It represents the culmination of many years of teaching and learning, as well my best efforts to reach just beyond my grasp. In striving to complete it I constantly found myself in over my head. Only the unflagging support and guidance of my teachers, friends and family allowed me to see this venture through to the end.

I am truly thankful to each of my committee members. My advisor, Professor Timpson always made me feel as if I was in control of the dissertation writing process, and amazed me with his fresh and creative ways of thinking through problems. He was the first one to tell me, “You can do this,” and he stuck with me all the way through. Professor Flahive, the committee’s outside expert, never failed to keep me headed in the right direction when it came to reviewing the literature and interpreting data. His command of second language acquisition theory and research is truly encyclopedic and totally awe inspiring. It played an essential role in my dissertation. I will always owe a special debt of thanks to Dr. Don Quick, who was always the first committee member to review my work and help me hammer out the details. Soon after completing the prelims it became clear that I was going to need a lot of special assistance with the writing of the dissertation. This was in no small part due to my working from such a distance. I did most my work in Japan, about as far from Colorado as one can get. To help me stay on track Dr. Quick accepted the role of working as my co-advisor, a capacity that made it possible for him to assist me not only with the actual dissertation writing, but also with all the extra paperwork that a dissertation entails. When it came to the hard work of theorizing, creating concepts and coming up with a watertight research design Dr. Laurie Carlson’s insight and

expertise was indispensable. Her understanding of what was called for made it possible for me to work with the archival data and address my research questions properly and successfully. And she was indefatigable in reading each and every sentence that went into the dissertation. Her suggestions and corrections immensely improved the dissertation. One of the most endearing memories of all my interactions with my committee members is that somehow, even when I did not really know what I was doing, they did. They always managed to get me settled down, straightened out, and back on track. They were great teachers, and the best committee ever. I will always be thankful for all that they did for me, and the wonderful experiences they afforded me in carrying out this study.

One person deserves special thanks, my good friend and professional colleague in Japan, Professor Hiroki Ishizuka. It was through his intervention that I could attain the archival data for my study. Moreover, in spite of his very busy schedule he always made time to go over my research and discuss its implications. Literally countless hours over coffee on Monday, after Monday after Monday, for as long as it took. Without his help and insight this dissertation would never have been conceived or completed.

Finally, I am thankful for the help and support of my family, which took so many forms and lasted from beginning to end.

## TABLE OF CONTENTS

ABSTRACT .....	ii
ACKNOWLEDGEMENTS .....	iv
TABLE OF CONTENTS .....	vi
CHAPTER ONE: INTRODUCTION .....	1
Background of the Problem.....	6
Statement of Problem.....	9
General Research Questions .....	10
Research Design.....	10
Significance of the Study .....	14
Theoretical Framework .....	14
Limitations .....	15
Delimitations .....	15
Researcher's Perspective.....	16
CHAPTER TWO: REVIEW OF LITERATURE .....	18
The Writing Process Approach .....	19
The Introduction of the Writing Process in Native English (L1) Classes.....	19
The Origins and Rise of Second Language Writing .....	21
Classification of Approaches to EFL Writing.....	23
Cognitive Development Theory.....	23
The Writing Process Approach as a Rejection of Current Traditional Rhetoric.....	24
A Working Definition of the Writing Process Approach.....	25
Computer Mediation.....	27
Computer Mediation in L2 Writing .....	27
Moodle as a Computer Management System.....	29
Sociocultural Learning .....	34
Sociocultural Theory.....	34
Social Constructionism Theory (Social Approach) .....	37
The Changing Role of Teacher Authority in Collaborative Learning .....	41
Writing Groups and Task .....	42
Stance as an Indicator of Student Assumption.....	43
Peer Response and Training.....	44
Peer Response and Writing Quality .....	45
Discussion as a Form of Peer Response.....	45
Effects of Peer and Teacher Feedback on Revision.....	46
Motivation and Second Language Acquisition .....	47
Integrative verses Instrumental Motivation Orientation .....	48
The Socio-Educational Model.....	50

The Attitude Motivation Test Battery .....	51
The Reopening of the Motivation Question .....	52
Intrinsic and Extrinsic Motivation .....	54
L2 Motivation Self System .....	55
The Role of Grammar and Explicit Teaching in Second Language Acquisition .....	59
Course Design Choices Made by the Instructor Based on Issues in SLA Literature .....	65
CHAPTER THREE: METHODOLOGY .....	67
Research Approach and Rationale .....	67
Archival Data .....	67
Theoretical Research Approach and Rationale .....	68
Research Rationale .....	69
General Research Questions .....	71
Research Design .....	71
Participants and Sampling .....	73
Intervention .....	74
Instruments and Measures .....	75
Pretest and Posttests of Short Narrative Writings .....	76
Peer Evaluation Scores .....	78
Student Survey – Motivation .....	79
Extended Essays .....	82
Internal Validity .....	84
External Validity .....	85
Variables .....	86
Writing Improvement .....	86
Engagement .....	86
Motivation .....	87
Writing Achievement .....	87
Research Questions .....	87
Writing Improvement .....	87
The Association between Writing Improvement, Engagement, Motivation, and Writing Achievement .....	88
Data Analysis .....	89
CHAPTER FOUR: RESULTS .....	91
Data Analysis and Findings .....	91
Participant Characteristics .....	92
Sampling and Response Rate .....	92
Descriptive Statistics .....	93
General Question #1: Writing Improvement .....	95
Specific Research Question 1: Complexity .....	95
Specific Research Question 2: Accuracy .....	96



Specific Research Question 3: Fluency.....	96
General Question #2: The Association between Writing Improvement, Engagement, Motivation and Writing Achievement.....	97
Specific Research Questions 4-9: Correlations to Writing Achievement.....	97
Specific Research Question 9: Multiple Regression.....	99
CHAPTER FIVE: DISCUSSION .....	102
Writing Improvement.....	102
The Association between Writing Improvement, Engagement, Motivation and Writing Achievement.....	105
Predicting Writing Achievement.....	109
Implications.....	111
The Effectiveness of Computer Mediation in L2 Writing Classrooms.....	111
Peer Review and Evaluation .....	113
Writing Process Approach .....	113
Explicit Instruction verses Social Constructivism .....	114
Recommendations for Future Research .....	115
REFERENCES .....	118
APPENDICES .....	140
Appendix A: 2014 JALT CALL Workshop Announcement .....	141
Appendix B: Class Schedule for the Computer Mediated Writing Course.....	142
Appendix C: Example of Guided Reading.....	143
Appendix D: Output for L2 Syntactic Complexity Analyzer.....	144
Appendix E: Output for Grammarly.com.....	145
Appendix F: Input Screen for Readabililty-Score.com .....	146
Appendix G: Course Rubric for Peer Review and Evaluation.....	147
Appendix H: Instructions for Extended Essay Writing.....	148
Appendix I: Rubric Used by the Expert Readers for Holistic Scoring .....	149
Appendix J: Jacobs et al. Rubric .....	150
Appendix K: End of Course Survey (Motivation Survey) .....	151

## CHAPTER ONE: INTRODUCTION

According to the keynote abstract for the 2014 Hokkaido JALT Computer Aided Language Learning interest group, “New data shows that almost 43% of high school students in Hokkaido do not understand what is being taught to them during English class. Furthermore, over 53% of high school students in Hokkaido dislike learning English” (see Appendix A). As a teacher with a lot of experience in Japanese classrooms, I am not surprised. A great deal of my teaching has been directed towards this exact problem. The teaching of foreign language in Japanese secondary schools is highly focused on forms and is not student centered. Clearly, there must be better ways to teach foreign languages in structured situations. One purpose of this study, in which I analyzed a secondary data set gathered from a Japanese university English composition course, was to help provide answers to the driving question, ‘Isn’t there a better way?’

The archival data that was used for this secondary study of foreign language writing came from an innovative college writing course that was held in the fall of 2013 at a large Japanese university. The course was both designed and taught by a Japanese instructor who was acutely aware of the need for improvement in structured foreign language instruction, and held very progressive views about how to make that happen. He believed that it is possible to create an online writing classroom environment that would lead to measurable improvement in students’ writing skills. He sought to achieve this through the use of computer mediation, a sociocultural approach to learning foreign language (L2) that involved peer response, and by following the cognitive stages of composition set forth in the writing process approach. L2 is commonly used to refer to a language that is not the student’s native language. In this study, L2 is used to

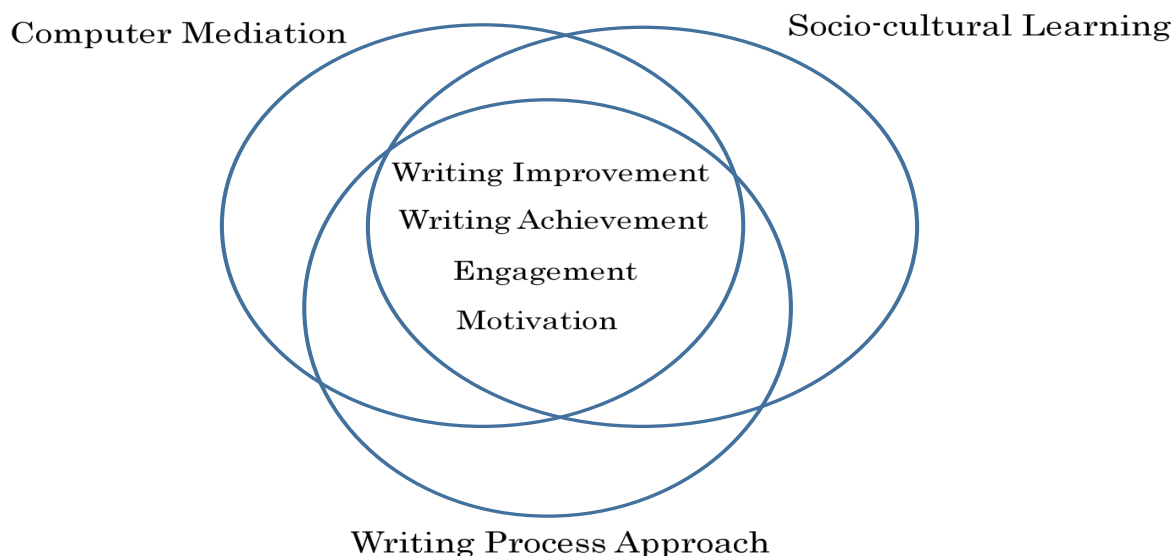
designate a language that is being acquired by someone in addition to their native language. The potential for this class to address the need for a better way to teach L2, and L2 writing in particular, seemed high. Therefore, the purpose of this study of the archival data the course provided was to come up with an effective research design that would make it possible to define the learning outcomes of the course. The need to define key concepts, quantify and measure the variables, and use inferential statistics to accurately analyze the archival data was essential to the success of the study. In the end, answers to the question, ‘Isn’t there a better way?’ will prove to be of little value unless they are based on sound reasoning and empirical evidence.

Socio-cultural learning took place in the form of peer review and peer evaluation. The terms peer review and peer evaluation were used when specifically referring to the activities that were carried out in the course or in similar classroom situations described in the literature (Berg, 1999; Carson & Nelson, 1996; Connor & Asnavage, 1994; DiPardo & Freedman, 1988; Ellis, 2011; Hedgcock, & Lefkowitz, 1992; Lan, Wang, Hsu, & Chan, 2011; Lui & Sadler, 2003; Mangelsdorf & Schulmberger, 1992; Nelson & Murphy, 1992; O’Donnell & King, 1999; Paulus, 1999; Stanely, 1992; Swain & Lapkin, 2001; Tzu & Ng, 2000; Ueno, 2010; Villa & DeGuerrero, 1996; Zhang, 1995). When discussing more sweeping aspects of such learning approaches in general the term collaborative learning was used and applied to not only pair work, but also group and team work (Brindley, Walti, & Blaschke, 2009; Bruffee, 1999; Johnson & Johnson, 2009; Lambert, 2012; Mazuar, 1997; Millward, 2013). When referring to the primary theoretical roots and principles of such teaching methodologies the term socio-cultural theory, as it specifically refers to the learning theories of Vygotsky (Cazden, 1996; Dunn & Lantolf, 1998; Gallagher, 1999; Jin, 2007; McLeod, 2007; Redd, 2014; Schinke-Llano, 1993; Vygotsky, 1962; Vygotsky, 1978) was used.

The three teaching approaches used in the L2 writing course (computer mediation, peer review and evaluation, and the writing process approach) were carried out in such a way that each pedagogy reinforced and enhanced the other. The use of computer mediation was also beneficial in that it facilitated the collecting and organization of the archival data. The archival data was then used to measure four distinct concepts which were found to be centrally important to the course; writing improvement, engagement, motivation, and writing achievement. Figure 1.1 gives a visual structure of the overlapping nature of the teaching approaches and the four main constructs that resulted from the combination of these pedagogies.

The creation of these four concepts made it possible to use the archival data to describe the learning outcomes of the course while investigating L2 writing development and writing proficiency measures. In this study writing development, which is measured in terms of complexity, accuracy and fluency (CAF) is synonymous with writing improvement. Writing proficiency, which was measured analytically using a rubric and trained raters, is synonymous with writing achievement. The results of this previously untested approach to second language (L2) writing showed that there were gains made in some levels of writing improvement (CAF), and that writing improvement, engagement and motivation can predict writing achievement.

### 3 Teaching Approaches



*Figure 1.1.* The combination of computer mediation, sociocultural learning (as manifested by peer review and evaluation) and the writing process approach, and the four concepts used to measure the effects of this methodology.

The beneficial effects of using computer mediation in the classroom are clear (Bubas, 1999; Daniels & Pethel, 2005; DeWaard, 2013; Feller & Apple, 2006; Foster, 2009; Herring, 2003; Higely, 2013; Japos, 2013; Jin, 2005; Jin, 2007; Kern, 1995; Lan, Wang, Hsu, & Chan, 2011; Lin, 2014; Liu & Sadler, 2003; Looi et al., 2010; Martinez & Jagannathan, 2008; Tzui, 2004). To introduce computer mediation into the classroom the course instructor used Moodle, an open source course management system, similar to Blackboard and WebCT (Kuwar, 2012; Martinez & Jagannathan, 2008). Computer mediation was used to enhance the participants' opportunities to engage in ongoing and authentic exchanges of ideas through L2 writing. It also facilitated spending more time on task, greater peer interaction, and a heightened engagement in the writing process to a degree that would not have been possible in a traditional, teacher-fronted classroom. This threefold teaching approach (computers, peers, writing process) made it possible for the teacher to limit the time used for explicit instruction to only 15 to 20 minutes out

of a 90-minute writing session. The rest of the time was spent online carrying out a very demanding set of interwoven assignments. The students were responsible for their own work, progress, and contributions to the course in the form of writing and editing. Using this approach a prodigious amount of work was accomplished during the course. It allowed the class to complete four writing tests, and nine writing assignments (one assignment per class). The writing assignments had many steps starting with the completion of nine out of class readings and nine out of class first draft opinion papers. Computer mediation made it possible to begin the follow up to these out of class assignments immediately at the start of class. In class students continued to work through the writing process and completing nine in class peer editing tasks, nine reviews of peer comments, nine peer evaluations and nine final writing revisions to be posted to the website. This final task for each of the nine writing interventions was to write and a reflexive journal on the week's activities. That writing was often done in Japanese. And on the last day of class, all the students, without fail, took the time to complete a self-reporting motivation survey.

All of this activity took place in an extremely stable and reliable fashion producing the entire body of work in the space of 12 classes. The classes were weekly classes, but due to interruptions in the schedule, they were not necessarily held every week. Rather, the 12 periods were spread out over 17 weeks (9/3-2/3), with some classes being canceled for school festivals, and winter break (see Appendix A for the exact class schedule). The ability of the class to maintain its productivity and intensity in spite of these interruptions is a testimony to the resilience of the pedagogy.

The course instructor sought to limit the amount of time spent lecturing because he intended this to be a course where students did the work of writing, and not simply discuss

writing. After the instructor's brief comments given at the start of class, the participants, who were already logged onto the class website, would spend the rest of the time editing, evaluating, reviewing, rewriting, and posting work to the site. By carefully following the steps of the writing process the course allowed the participants to approach writing as a connected series of cognitive functions. Approximately one hour of preparation was required outside of class. In every 90 minute class session at least 60 minutes called for the participants to be actively involved in all the stages of the writing process, and to produce results at each step along the way. In other words, this approach called on the participants to move beyond passive participation. This was a course with a clear and predictable method of delivery and many milestones. For the participants the only way to make progress was to write much more than is normally expected in typical classrooms, and in such a way that their production of text could be considered as pushed output (Birjandi & Mamaghani, 2014; Izumi & Bigelow, 2012; Russell, 2014; Swain & Lapkin 19975; Swain, 2007). With its unique combination of instruction and delivery the course was largely student driven. Finally, powered by constructivist principles of learning, the course facilitated the creation of knowledge through scaffolding and experiential learning (Kolb, 1984; Vygotsky, 1978).

### **Background of the Problem**

In Japan both the teaching and learning of English as a second language are very high-stake endeavors. Success in learning English can be paramount to success in both school, and one's career (Long & Richards, 1999). This added urgency to this study and the analysis of the secondary data taken from this innovative L2 course.

Success in English education in Japan is tied, in no small part, to the successes and shortcomings of the current national English Learning Curriculum. A sense of dissatisfaction

with learning outcomes is often shared by both students and teachers, and has been reported in the media and the literature (“A New Japan”, 2011; Clavel, 2014; Igarashi et al., 2009; Seeroi, 2012; Valentine, 2012; Yoshida, 2013). The resulting debates help pave the way for consideration of controversial issues related to how and when changes in the system should be made. For example, the introduction of English into the elementary school curriculum as a mandatory subject using prescribed textbooks and the issuance of passing and failing marks for students in the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> grade of elementary school, although complicated, seems to be a welcome development (McCurry, 2011). There has also been a move away from the grammar, translation approach of the 1960’s and 1970’s, and the audio-lingual approach of the 1980’s and 1990’s. (Abe, 2013; Sato & Kleinsasser, 1999). In their stead, the current, communicative approach seems to be another practical and meaningful attempt at change, although questions about the limitations of this approach are also being raised (Smith, 2012).

Amidst all this change, what is more striking is how much things stay the same. Many Japanese English teachers have no training in teaching English as a Foreign Language (TEFOL) and continue to rely heavily on explicit, top to bottom vocabulary and grammar instruction. The Ministry of Education, Sports, Science, Technology and Culture is attempting to improve this situation by finding ways to enhance the quality of secondary English teachers (Nakabachi, 2008). However, educational testing for entrance exams and job placement discourage the move away from English as a test subject, and impede its development as a tool for communication (Pigott, 2010). This can leave students with a superficial understanding of English and an inability to express themselves freely or meaningfully.

Another important change that is being considered is related to the convenient, and well-established tradition of using English as a test subject for various qualifying exams. In their



work examining English education from kindergarten to university, Ikegashira, Morita, and Matsumoto (2009) concluded that there are serious problems concerning English education in Japan, with the most serious one being the poor communicative ability of Japanese people in English. Among the many specific problems they define, they put the brunt of the blame on "The educational system of Japan itself, and the entrance examinations of universities" (p. 4). In response to problems related to teaching English in ways that are aimed at facilitating success in passing the national university entrance exam, an extreme form of teaching to the test, there is now a movement to end the national exam system (Hongo, 2013).

Against this backdrop of change, the intent of the Japanese university instructor, whose course provided the secondary data for this study, was to create an approach to teaching and learning L2 writing that would allow for individual expression and development in an authentic, communicative setting. This fully coincided with my interest in educational technology, social constructivism, and implicit learning and motivated me to come up with a research design to analyze the data (Kibler, 2011; Kibler, 2012; Kibler 2013; Kibler, Yamada, Cline, Samsonow & Cartwright, 2014).

In Japan there is clearly a call for change and further development in English teaching; change that will have a big effect on each and every English language student in Japan, not to mention teachers (Kroll, 2003). Obviously, the better informed and more practical such changes are, the better their chances of attaining the desired results. It was with that thought in mind that I choose to accept the Japan university instructor's offer to analyze the data from his course and examine the results. Against a backdrop of growth and change in English language learning and teaching in Japan, this study took up the investigation of L2 writing, with the intent to measure and quantify the learning outcomes that resulted from the combination of computer mediation,

sociocultural approaches, and adherence to the writing process approach. In doing so, this study adds to the existing research on theories of how L2 composition can be taught and learned more effectively, and presents concrete advice for the consideration of English as a Foreign Language, (EFL) and English as a Second Language (ESL) practitioners.

### **Statement of Problem**

Writing has a unique place among the four language skills, traditionally described by the Audio-Lingual method as listening, speaking, reading and writing. Amidst claims that instruction for Teaching English to Speakers of Other Languages (TESOL) has traditionally given priority to developing aural/oral proficiency, insufficient writing skill is often cited as a major cause for a lack of academic success by non-native speakers (NNSs) (Fujita, 2006; Uematsu, 2013). A lack of competence in L2 writing affects not only Japanese English students, but many English as a Foreign Language (EFL) students' overall performance in academic settings (Giridharan, 2012; Olivas & Li, 2006). This problem is complicated by the fact that teaching English as a Foreign Language (EFL) composition has been fraught with uncertainty and conflict regarding theory and practice. One point of contention is whether L2 writing is a matter of product, in which case teaching should focus on explicit instruction and focus on forms, or one of process, which would call for more implicit instruction and greater opportunity for experiential learning.

Historically, it has been said that EFL writing has progressed through four distinct stages, each marked by a specific approach (Silva, 1990). In order, they are “the controlled approach, the current traditional rhetoric approach, the process approach, and the social approach” (Mu, 2005, p.5). This study treated the secondary data attained from the Japanese university

EFL writing course as embodying both the process approach and the social approach to L2 writing as described by Silva.

### **General Research Questions**

The research questions put forth in this study have the potential to add to a better understanding of how and when writing improvement in writing a foreign language (designated by L2, acquired, non-native language) takes place. They also seek to define how writing improvement, engagement, motivation, and writing achievement relate to each other. To that end, the general research questions of this study examined the learning outcomes of the course while addressing both difference and association questions:

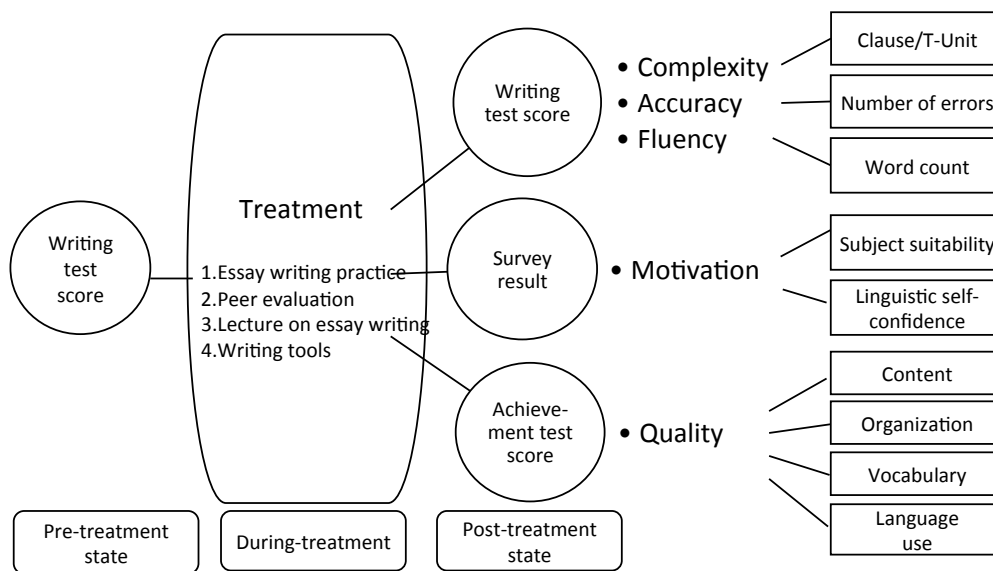
1. Would a computer mediated English writing course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation lead to improvement in L2 writing complexity, accuracy, and fluency (CAF)?
2. Upon completion of a computer mediated EFL composition course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation, what is the relationship between writing improvement (CAF), engagement, motivation, and writing achievement?

### **Research Design**

This study used a within-subjects, repeated measures design to examine change over time. Gliner, Morgan, and Leech (2009) described change over time as measuring the independent variable at several periods, and mentions pretest and posttest as “two different levels of this type of independent variable” (p. 264). In the strictest sense, a change over time design would take several measurements during the treatment. But it is possible to have a pretest, posttest design that involves an extended treatment. Such was the case regarding the archival data analyzed for

this study. This design was used to investigate the differences in writing improvement scores, as well as associations among writing improvement, engagement, motivation, and writing achievement of participants (N=62) in a computer mediated EFL English composition course designed to make use of peer review and peer evaluation and follow the writing process approach.

In doing so, this study reports the results of an L2 writing course that utilized a previously untested type of learning enhancement. The learning enhancement took place as a part of a 12-week EFL composition course carried out at a Japanese university. This unique instructional design consisted of twelve lessons as follows: one period of orientation and pretesting, nine periods (ninety minutes each/once a week) of computer mediated, peer reviewed and evaluated L2 composition instruction, one period of posttesting, and one period for the final examination and a follow up motivation survey. Figure 1.2 gives a visual of the structure of the course. Appendix: B gives the details of the class schedule for all twelve classes. Each writing period was preceded by a mandatory out of class, online reading and writing assignment. Appendix: C gives an example of one of the required readings. The work done out of class was essential to the work done in class.



*Figure 1.2.* The organization of the course. Short easy writing data was collected in the pre and posttests, engagement data was collected during the treatment, writing achievement data and motivation data were collected after the treatment.

With the exception of descriptive studies, the purpose of all quantitative studies is, according to Gliner et al. (2009), to look for relationships between variables. As figure 1.2 shows, the Japanese university L2 writing course was organized in a way that allowed for the collection and analysis data for quantitative study. It incorporated many useful instruments, in particular, short essay writing pre and posttests that could be used to measure writing improvement, peer evaluations that could be used to assess engagement, an 18 item self-reporting motivation survey, and an extended written essay that could be used to measure writing achievement.

Working with the information the instructor stored on the Moodle site yielded a data set that was rich and diverse. It provided both ‘hard’, easily quantifiable variables such as pre and posttest writing measurements of writing improvement, and measures of writing achievement, as

well as ‘soft’ variables which were of a more qualitative nature, such as self-reporting survey results and self-reported levels of engagement scores. It was possible, however, to quantify and measure these soft variables in a way suitable for a quantitative study. This data, in turn, allowed for a rigorous quantitative research design that looked for both differences and associations among the variables used to measure the learning outcomes of the course.

From the data compiled for this study, four concepts were measured, (1) writing improvement, (2) class involvement, (3) motivation, and (4) writing achievement. To measure and quantify these four concepts, 6 different variables were operationalized as shown in Table 1.1.

Table 1.1

*Concepts and Variables Created for the Study.*

Four Concepts	Six Variables to be Measured
To measure Writing Improvement	(1) complexity, (2) accuracy, and (3) fluency.
To measure Engagement	(4) engagement - self-reported peer evaluation scores.
To measure Motivation	(5) motivation - self-reported motivation scores.
To measure Writing Achievement	(6) writing achievement – essays analytically scored by trained raters.

A pretest that measured the complexity, accuracy, and fluency of student writings was given prior to the start of the intervention (9 lessons). Upon completion of the intervention a posttest was given to measure the same variables. Individual levels of engagement were based on weekly peer evaluation scores. Motivation was measured by a self-reported 18-item exit survey taken on the final day of class, and writing achievement was based on an extended essay

written at the end of the course that was analytically scored by two trained raters. This archival data allowed for an investigation of differences and relationships among the four concepts. In keeping with the tradition of post-positivist paradigm in educational research, a quantitative design was clearly the most appropriate for this study (Gliner et al., 2009).

### **Significance of the Study**

This study was important in that it helped to quantify and explain the outcomes of a Japanese university English writing course. The course used a new approach to the teaching and learning of English writing that used computer mediation to facilitate peer learning and the writing approach. In contributing new data to the discussion on L2 writing, this study provides original insight to help further pedagogical understanding in the field, both in Japan and elsewhere in the world where second language learning is the focus. The implications of the study apply to Japanese students in comparable university settings, and others who undertake the study of L2 writing in various classroom settings. By measuring and quantifying the archival data, this study has helped prepare the way for similar L2 writing studies with both remedial and advanced students of L2 writing.

### **Theoretical Framework**

The theoretical framework for this study reflects the three teaching approaches used in the course, computer mediation, sociocultural theory as it relates to collaborative learning and peer response, and the writing process approach. It shows how both sociocultural learning and the writing process approach can be enhanced and accelerated through the use of computer mediation. Moreover, it reveals that computer mediation plays an important role in class management, the delivery of course information, and the collection of data.

Sociocultural theory (STC) was developed by L. S. Vygotsky (1962, 1978) and holds that all knowledge is socially constructed. This provides the rationale for both collaborative learning and peer response. The expansion of collaborative and peer learning into a number of educational settings is discussed. This discussion shows that sociocultural theory is an especially fitting model for second language acquisition (SLA), and L2 writing in particular.

Based on the cognitive approaches to writing as set forth by Flower and Hayes (1981), the movement away from traditional contrastive rhetoric in L1 is examined. Furthermore, the delayed but largely parallel development of L2 writing as a specialized area of study is discussed. It is shown that out of necessity the L2 classroom first drew many of its approaches from L1, but over time changed them to fit the needs of L2 writing students. A recurrent theme of this discussion will be that writing is not a linear process, but a recursive process (Flower & Hayes, 1981; Grabe & Kaplan, 1996).

### **Limitations**

All case studies have limitations even if their overall value is high. This study used convenience sampling as the data was already collected and archived, so it cannot be generalized to all areas of L2 teaching. Furthermore, the motivation survey may not be appropriate for this study, as it was originally designed to be used in Motivational Orientation of Language Teaching (MOLT) studies. A survey designed to specifically measure writing motivation and anxiety, such as Cheng (2004), would have been a more suitable and meaningful measure.

### **Delimitations**

This study concentrated on the four concepts constructed from the available secondary data, those being writing improvement, engagement, motivation and writing achievement. The



data consisted of actual pretest-posttest data gathered from short essays, peer evaluation scores based on peer-reported evaluations, self-reported motivation results, and extended essays that were analytically scored by trained raters. Data related to peer reviews of written texts and revision of texts and was not presented.

This study focused on only one segment of the entire population of students involved in English writing in Japan. Secondary school students and adult learners were not represented by the sample. The three pedagogies (computer mediation, peer response, and writing process) are fundamental to modern L2 writing education, and their adaptation to a much wider range of L2 writing situations is highly conceivable.

### **Researcher's Perspective**

I began my study of second language and second language acquisition in the late 1970's at Michigan State University as a student of Japanese. In 1980 I came to Japan with the intent to teach ESL for two years in a small English school, and then return to the United States.

However, that two year teaching assignment lead to 35 years of working in many different Japanese schools as a language instructor. I have been fortunate to know and observe many excellent and dedicated teachers, and participate on some especially interesting projects with them. This dissertation, in which I participated with a colleague who provided the archival data from a previously untested L2 writing course, is one example of such associations.

This was not the first time for me to cooperate with this colleague, who was the course instructor for the L2 writing class that generated the archival data. Our last cooperation involved the promotion and development of a combined Social Networking System (SNS) and Learning Platform system to assist Japanese elementary school teachers involved in teaching English in their classrooms. The project was known as CELENET, and was funded by the Japanese

government. We presented the results of CELENET at the 2008 World CALL conference held in Fukuoka, Japan. CELENET is still being used in Japan (Yorozuna, 2008).

Upon becoming familiar with the nature of the course and the information retained on the server, I became especially interested in carrying out a quantitative study to analyze the results. This was in keeping with a long-standing interest I have in regard to the role of both affective learning factors and social learning in language acquisition.

First, I met with the instructor and familiarized myself with the Moodle course he had created, the procedures he had carried out, and the data that was available on the server. I could see that this presented an excellent opportunity to carry out a quantitative investigation of the use of computer mediation and peer review on ESL composition learning and instruction.

Because the course was already completed and the data was archival it was not easy to fully grasp what actually took place when the course was being taught and the data was being collected. It took many meetings with the course instructor, as well as an exhaustive examination of the course data stored on the server to bring the design of my own study, based on my interpretation of the results generated by the course, to fruition. I am confident that the results of this study of the archival data fully capture what took place over the twelve weeks of the course and accurately lay forth the outcomes of the instructor's initiative.

## **CHAPTER TWO: REVIEW OF LITERATURE**

All the teaching approaches used in this study of L2 writing, computer mediation, sociocultural learning as it is embodied in peer work, and the writing process approach, have been used before. All three fit into the pattern of language research and practice for native speakers (L1) being first adopted, and then reworked to fit the needs and realities of L2 writing. Each of the approaches are sound and feasible in and of themselves. However, this study of a Japanese university L2 composition course showed that the combination of these three pedagogies into a seamless approach to L2 writing offered unique, cutting edge advantages in coping with many problematic L2 writing issues. While the use of peer work and the writing process are focused on learning styles, computer mediation focuses on the use of educational technology to facilitate learning. In this course it augmented the limited time of the instructor for classroom management duties such as taking attendance, keeping records, distributing and collecting assignments, and grading. The extensive yet unique needs of each student could be better addressed in this environment, which was rich in support, speed and availability, and was equipped with many important learning tools and online writing tools. The excellent fit between computer mediation and peer work online was very suitable for the writing process approach which calls for flexibility in planning and preparing, sharing and exploring with others, learning about your audience, and having a way to publish, or collect and display the final, written product. The transparency of a computer mediated system can encourage students by making it easier to assess gains made in their progress. And importantly, the addition of computer mediation allowed for both the generation and storage of classroom data, which is vital for research and development.

## **The Writing Process Approach**

The writing process approach is a well-accepted method for teaching and learning composition (Badger, 2000; Munice, 2002; Onozawa, 2010). The adaptation of the writing process as one of the three main pedagogies used in the course under study reflects the course designer's understanding of both the cognitive aspects of composition (researching, planning and revising, etc.), and the need to develop metacognitive skills in writing students. Flavell (1976) described metacognitive knowledge as "knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises" (p. 907). As examples of the use of metacognition in writing Wong (1999) explained different ways in which adult writers can focus on the cognitive tasks of writing, for example, by paying attention to word choice, clarity of writing, or if, when revising, they realize that the initial ideas they put forth may not be relevant. Using engagement in the writing process approach to combine cognitive and metacognitive writing skills is pursued as a way to help the students' improve their writing ability.

### **The Introduction of the Writing Process in Native English (L1) Classes**

Of the three approaches used in the course, the writing process approach was the first to appear in L1 classrooms and literature (Flower & Hayes, 1981; Fulkerson, 1979). The move toward a more cognitive, and eventually metacognitive approach to writing was only one part of a larger discussion on how to teach writing and how writing is learned. Going into the 1980's Fulkerson (1979) described four competing views on how, and why L1 composition should be taught. He then set forth four philosophies of composition. Approaches that emphasize the text were said to fall into the realm of formalist philosophy, and those that focused on the writers were collectively called expressive philosophies. Writing aimed at expressing external reality

was considered mimetic philosophy, and writing that focused on the reader was summed up under the category of rhetorical philosophy.

Ten years later, using the same categories, but shifting from the use of the term philosophy to the use of a better word, axiology (value theory), Fulkerson wrote about the decline of the formalist, expressive, and mimetic axiologies, and the ascendance of the rhetorical axiology. His interpretation of the movement is:

As I see it now, the assertions that there are four possible goals (ends) in teaching composition and that means can contradict ends still make sense. But as the last decade has shown, I believe, an emerging consensus about which goal is most important, and simultaneously growing complexity and conflict over means of reaching it. (Fulkerson, 1990, p. 410)

Fulkerson's observations foretold similar moves that would take place in L2 writing, albeit much later, as they were described by Silva (1990). The parallels between Fulkerson's (1979) four philosophy/axioms, and Silva's (1990) four stages of L2 writing development, presented later in this section, are both obvious and profound. This complementary and similar development is most likely due to the rise of approaches toward language learning pedagogies based on the principles of social-constructivism. It explains why the writing process approach has become especially popular with L2 writing teachers. Other than the writing process approach, only the teaching of genre as a form of English for Special Purposes (ESP), and in particular English for Academic Purposes, seems to have any noticeable presence in modern L2 writing classrooms (Ahlsen & Lundh, 2007). One reason for the staying power of genre writing is that it addresses the need for writing for real world situations. The role of content and form, therefore, is highly prescribed and dependent upon the genre being approached (Hyland, 2004; Knapp & Watkins 2005). But the differences between the writing approach and genre writing are not so great. The writing process is predominately focused on the different stages a writer

goes thorough when producing a text, while the genre approach is focused on what and how to write in order to reach a specific audience. Hyland, however, does not see a conflict between these two approaches to writing and claims that they “can usefully be seen as supplementing and rounding each other out” (p. 20).

Both writing process and genre writing are a part of the larger, ongoing debate about how, when, and why any given approach can be shown to be effective and beneficial. With regards to the writing process, although it now seems to enjoy success and endorsement among many researchers and teachers, it has never been the only way to teach L2 writing. Research that paved the way for the writing process began to appear regularly in the 1970’s and 1980’s.

### **The Origins and Rise of Second Language Writing**

To better understand current trends in teaching English as a Second Language (L2) writing, it is important to first understand its historical development, particularly as a discipline in the United States. This not only helps prevent reinventing the wheel when considering new approaches and methods for teaching and learning. It can also provide a solid foundation of knowledge based on documented experience, research, and debate.

From the early 20<sup>th</sup> century to the 1960’s the origins of L2 writing theory lie in L1 practices which, in turn, relied on the reading and analysis of literature (Ferris & Hedgcock, 1998). With the goal of helping students develop a mastery of prescribed genres, textbooks would typically follow steps such as teacher introduction of a rhetorical form, assigned literature reading and discussion, writing tasks based on the reading, submitting writing to the teacher, and teacher evaluation. Such L1 writing steps were concerned with writing as a product and treated student-writing procedures as fixed in regard their knowledge of writing. That is to say, value

was placed on the forms and the product of writing, but little attention was paid to the ways students actually went about the process of writing.

While it is important to recognize the L1 influence on the origins of L2 writing pedagogy, that alone is not enough (Silva, 1993). It still begs the question as to how L2 writing pedagogy came about, and how does it both resemble and yet differ from L1 writing theory. In his *Historical Inquiry in Second Language Studies* Matsuda (2014) wrote that in the field of second language learning there is a conventional history of L2 writing, and then goes on to state that it is based on claims that cannot be supported. This unsubstantiated narrative, according to Matsuda (2014), is as follows:

Before the 1960's writing was neglected in L2 studies in general because of the dominance of the audio-lingual approach...the fall of the audio-lingual approach and the sudden influx of international students in U.S. universities made writing an important agenda in L2 studies. (p. 34)

Based on his extensive research Matsuda (2014) rejected this conventional narrative for a number of reasons. He points out that concerns over teaching foreign students predates the 1960's. Furthermore, there is no evidence to support the claim that a large number of foreign students suddenly began to enroll in North American universities in the 1960's. Moreover, L2 English writing was, according to Matsuda, often taught as L1 composition by teachers who did not necessarily consider themselves second language teachers. Teachers, who had experience in TESOL, on the other hand, participated in College Composition and Communication (CCC) workshops for teachers who were frustrated by foreign students who enrolled in mainstream university classrooms in the 1950's. According to Matsuda, the rise of English composition as a specialized field of L2 writing in North America came not with the fall of the audio-lingual method, but with the creation of TESOL in 1966. From this point on L2 writing became more and more the explicit domain of second language teachers.

## **Classification of Approaches to EFL Writing**

Silva (1990), in his study of the development of EFL writing, described four general instructional approaches; controlled composition, current traditional rhetoric, the process approach, and English for academic purposes. The first approach, the controlled approach was “guided by structural linguistics and behaviorist psychology” (Mu, 2005, p. 1). Mu then goes on to point out the obvious connections that exist between the other three general approaches described by Silva and the general theories of Contrastive Rhetoric Theory, Cognitive Development Theory, and Social Constructionism. By linking these theories with the approaches described it is possible to construct a well-grounded theoretical framework that classifies and connects ESL writing theory and writing strategies from the inception of EFL writing in the 1960’s and 1970’s up to the present.

**Contrastive Rhetoric.** In 1966 Kaplan, after studying 600 student L2 essays, introduced the concept of contrastive rhetoric (as cited in Hyland, 2004). Contrastive rhetoric is the study of how the rhetorical features of one’s native language (L1) may interfere with writing in L2. The similarities to Contrastive Analysis Theory, as set forth by Robert Lado (1957) are obvious. However, unlike contrastive analysis, which is no longer a driving force in SLA theory and practice, contrastive rhetoric has continued to evolve and is still an area of interest in L2 writing theory. Both Leki (2002) and Reid (1993) have suggested ways in which an understanding of cognitive rhetoric can be useful for ESL writing teachers.

**Cognitive Development Theory.** Cognitive development theory, which has its origins in L1 writing research, is based on a process approach to writing which, in turn, is based on research in cognitive psychology (Grabe & Kaplan, 1996). The shift towards teachers paying more to attention to how students engaged in writing, as opposed to what they wrote, began in



the 1970's. The writing process model presented in *A Cognitive Process Theory of Writing* by Linda and John R. Hayes (1981) is perhaps the most representative and well known of cognitive theory writing models. The Flower-Hayes' (1981) writing process model consisted of three major parts - the task environment, the writer's long-term memory, and the writing process. They are connected to each other in a non-linear, exploratory, generative fashion (Hyland, 2003). This is an especially important aspect of the model, as it implies that writing is not a linear process. The concept of process writing continues to gain popularity up to the present in both L1 and L2 writing settings.

**The Writing Process Approach as a Rejection of Current Traditional Rhetoric.** In L1 the writing process approach was a reaction against product-orientated pedagogies, which tended to be taught in a strictly top down fashion, often based on examples from literature (Susser, 1994). The teacher would lecture on rhetorical forms, such as sentence structure, paragraph development, or essay style, and grammar. Writings were timed, done once, turned in, marked, returned and then on to the next assignment. The philosophy behind this approach, known as current traditional rhetoric theory, was Positivism. Positivism, described by Benson and Nunan (2005) "supports descriptive approaches in which language is represented in terms of structures, patterns, words, and so on, and presented to the language learner as a predetermined system or code" (p.20).

The 'right kind' of writing was part of a fixed and immutable reality, and the approach to the teaching and learning of writing was very linear. The teacher was considered to be in possession of the keys to the knowledge of what constituted 'good' writing, and following a behaviorist based approach, students were expected to show understanding and mastery of all the

necessary vestiges of good writing, such as the infamous five-paragraph essay and the use of sound thesis statements (Leki, 2000).

The development of the writing approach, which reversed every paradigm of the current traditional rhetoric theory of teaching composition, is a manifestation of Constructivism, and more precisely, constructivist social learning theory as it is embodied in social constructivism. Social constructivism is a theory which states “knowledge is created by learners in the context of, and as a result of social interaction” (van Harmelen, 2008, p. 36). Which is to say that learning is a social activity in which the individuals construct their own meaning based on their experiences, not through rote memorization of rules related to some predetermined knowledge. The nature of all learning, including writing, is cyclical, or spiral. In terms of the Lewinian Experiential model as it is discussed by Kolb (1984) learning calls for a constant revisiting of the processes of concrete experience, reflexive observation, abstract conceptualization, and active experimentation linked into an endless loop. This process of continual development based on varying experiences allows for the appreciation of multiple perspectives (Tyler, 2006). Importantly, from a social constructivist point of view, one does not move through these steps alone. The steps are essential, but so is a social component.

### **A Working Definition of the Writing Process Approach**

Largely due to its growing success and popularity, the writing process approach has been recast in various ways. In fact the term (writing process approach) no longer describes any particular curriculum (Kroll, 2001). Rather it has become a general term for many types of writing courses (Susser, 1994). This can cause some confusion. Caudrey (1995) conducted a survey aimed at gauging the degree to which ESL teachers shared some similarity among their concepts of the Writing Process. He found that the results showed a great deal of variability and

that, “trying to find common threads in them involved a great deal of reading between the lines” (p. 16).

A simple definition of the writing process would be the steps a writer would normally follow when carrying out a writing project, such as pre-writing, drafting, revising, editing, and publishing. Furthermore, these steps cannot be carried out in a vacuum. The role of audience and audience participation are essential. Peers can carry out this function, and the role of the peers will change depending on the steps being carried out (Coffin et al., 2003). For example in the early stages peers may be collaborative planners, in the later stages they may be audience, tutors, editors, or evaluators. From prewriting to revision, the writing process approach allows for a great diversity of social learning and interaction.

Table 2.1 compares the basic steps of the writing process as described by Hughes (2007) and the steps followed in the course being studied. Based on this comparison it can be said that the writing process approach was definitely followed in carrying out the course.

Table 2.1

*Comparison of the Basic Steps of the Writing Process Approach Described by Hughes (2007) and the Steps Involved in the L2 Course.*

Step	Described by Hughes	Carried in the Japanese university writing course
Prewriting	Purpose and audience Brainstorming Form	Complete online reading outside of class
Writing	Organization Voice Word Choice Sentence Fluency	Write first draft on topic outside of class and post to the class Moodle site.
Responding	Teacher/peer conference Self/peer evaluation	Review peer drafts (3-4 peers in a group). Respond to peer drafts in writing. Read responses from peers.
Revising	Clarifying Reorganizing Refining Using Precise Language	Re-write the original draft.
Editing	Conventions	This step would relate to the short (15 minutes) of instruction given at the start of each lesson, which consisted of specific comments directed toward the entire class.
Publishing/ Sharing	Bulletin Board Website Presentation	Post rewritten class to the Moodle site.

## Computer Mediation

### Computer Mediation in L2 Writing

The use of the internet as a communication and social environment has become a popular topic in educational research (Bubas, 2001). Computer mediation, or more specifically computer

mediated communication (CMC), can be distinguished by “its focus on language and language use in computer networked environments, and by its use of methods of discourse analysis to address that focus” (Herring, 2003, p. 612). Computer mediated communication is usually conducted by two or more individuals who use separate computers in either synchronous or asynchronous fashion, and is carried out by using functions such as email, video, audio or text conferencing, bulletin boards, list-servers, instant messaging, and multi-player video games (Daniels & Pether, 2005).

The effects of computer mediation can be contrasted with those of face-to-face communication. Differences in time and information processing pressures, status and position cues, and social anonymity have been found between face-to-face and electronic communication (Kiesler, Siegel, & McGuire, 1984). Kern studied two groups of French students, one in a CMC session and one in a face-to-face session having a discussion on the same topic (Kern, 1995). He found that the students in the CMC group took twice as many turns, produced more sentences, and used a greater variety of discourse functions. It is the potential for accelerated communication exchanges that define the computer mediated aspect of the L2 writing course that was used for this study. When the teaching of L2 takes advantage of computer mediation, the levels of engagement in the writing process approach and peer engagement can be accelerated. Kern also noted that CMC might be unsettling for teachers, as it tended to reduce attention to grammatical accuracy, coherence, and continuity of discussions. Importantly Kern noted a decentralization of teacher authority in CMC discussions, a condition Bruffee (1999) considered essential for good collaborative learning.

Computer mediation has proven to be a promising environment for L2 writing. Feller and Apple (2006) found that the use of blogs by low proficiency, low motivation students lead to

substantial increases in fluency, defined as the number of words used, and lexical complexity. Li (2005) found that compared to hand written essays, mediation technology in ESL writing lead to students paying more attention to higher order thinking skills and making more significant revisions. It was also shown that computer written essays received higher scores in argumentation. In a meta-analysis of 59 primary studies Lin (2014) found that computer mediated communication intervention had a positive effect on second language acquisition. The use of computer mediation has also been shown to be an effective way to facilitate peer feedback for L2 writing (Guradado & Shi, 2007; Lan et al., 2011; Liu & Sadler, 2003; Razagifard & Meshkinshahr, 2011; Tuzi, 2004). However, basic issues tied to the differences between face-to-face communication and CMC also have been shown have an effect on CMC peer review. In a study of two parallel L1 writing classes (one face to face, one CMC) Ellis (2011) noted differences in the quality and type of responses. In the paper environment there was a higher level of macro-structure comment, while in the blog environment there was more mitigation of revision comments and affirmation, as well as significant differences in style and register.

### **Moodle as a Computer Management System**

Moodle, a popular open source computer management system (CMS), was used to create the website that facilitated the L2 writing course investigated in this study. Moodle is an acronym that stands for Modular Object Orientated Development Learning Environment. A CMS is a web application that is run on a server and accessed by using a web browser (Martinez & Jagannathan, 2008). It can be accessed from anywhere with an Internet connection. In the case of the course that was the focus of this study, the course instructor created his own, unique Moodle site, and put in on a server that was provided by the Hokkaido English Language Education Society (HELES). In many respects, Moodle is similar to other famous commercial

course management systems, such as WebCT or Blackboard. But because it is free and designed to be used by classroom teachers, as opposed to administrators, Moodle has become the CMS of choice for many instructors who want to create their own unique Learning Management System (LMSs) to enhance their specific pedagogy. The use of information technology by educators has been steadily increasing (Harasim, 2000). Throughout Asia, and in Japan in particular, there is a rapidly growing interest in using Moodle. According to its official site Moodle is now being used in 231 countries, for 7,477, 797 courses that accommodate 68, 225,912 users (Foster, 2009). This makes Moodle the leader in the field of LMSs, and puts it at the head of a movement that is changing the way teaching and learning take place in many classrooms.

One of the advantages of using a CMS is that it makes it possible to provide a number of tools for carrying out classroom functions such as the use of word processing in writing, the sharing of material by uploading student work, carrying out forums or chats, administering and participating in quizzes and surveys, collecting and reviewing assignments and recording of grades, attendance and the monitoring of student participation. The Moodle site used in the L2 writing course that was the focus of this study took advantage of all of these possibilities to maximize classroom management, allow for the ease of classroom participation, and encourage higher order thinking skills. Higher order thinking skills and revision are important for good L2 writing. Li (2005) showed that the use of word processing had a positive effect on student writing. Using think aloud protocols it was found that when students used word-processing they paid more attention to higher order thinking activities and revised more than when they wrote essays by hand. It was also found that that computer generated essays received higher scores in argumentation than hand written essays.

A lack of vocabulary is one of the biggest problems L2 writers face (Leki & Carson, 1994; Coxhead & Byrd, 2007). Tools that have been shown to be effective in L2 writing, such as the BBC corpus, online dictionaries, spelling and grammar checkers, and readability checkers that could provide readability scores and word counts for student writing were readily available to the students (Yoon & Hirvela, 2004; Yoon, 2008; Zepling, 2012). One goal of using a computer mediated system is to make the learning more cohesive, or seamless (Looi et al., 2010). Another goal of wireless learning is enhanced opportunities for students to share objects and switch between tasks (De Waard, 2013). The class-site used for this course clearly took advantage of computer mediation to make class participation, social interaction and the process of writing as seamless as possible. All the required reading could be accessed on the site. Classwork had to be completed and uploaded prior to given deadlines. Class attendance was absolutely mandatory, and failing to meet posting deadlines amounted to being absent. Due to the transparency of CMC copying was obviously not an option, and cyber deadlines made the problem of having students come to class unprepared disappear. This enhanced performance was also a testimony to the buy-in and sense of commitment the CMC helped instill in the students, as evidenced by their high levels of participation. Computer mediation of the class facilitated the sharing of student writing assignments with peers for review and editing, as well as the collecting of peer reviews and comments for mandatory, in class re-writing of assignments. The Moodle site also facilitated the evaluation of peers, which was done at the end of every class. And it provided an open record of all work done by the students and all the comments and grading done by both the teacher and the peers.

Chatting and synchronous exchanges were not a part of the site as it was used for the L2 writing course. All exchanges were unidirectional and asynchronous. Each exchange had a



single, predetermined purpose, such a reviewing, scoring, or posting writing for peers to access. In the mind of the instructor, this Moodle site was not a place for open discussion, but a writing workshop. Asynchronous learning has the advantages of allowing for students freedom in participating at their own pace while engaging in peer feedback. Ozotok, Zingaro, Brett, and Hewitt (2013) found that when both asynchronous and synchronous tools are available in online courses, asynchronous communication tends to be longer, more academic and less social than synchronous communication. One reason for this may be that asynchronous communication allows students more time to work and reflect on their projects (Higley, 2013). Every moment spent online at the site by the students was intended to fulfill a specific step in the writing process approach. Although group discussion can be a part of an exchange between the writer and the audience, the course instructor felt that the act of singularly reading and responding to each peer individually in an asynchronous fashion (not a live time, but a slightly delayed time) would be time saving, and maximize the depth of each peer's interaction. This study showed that CMC played a major role in creating and maintaining a successful and productive L2 writing environment. Without CMC many of the projects carried out in this course would not have been possible.

According to Cole (2005), Moodle reflects the educational philosophy of its creator, Martin Dougiamas. Simply put, that philosophy is Social Constructivism, a philosophy that relates to another key pedagogy used in the course. Kuwar (2012) related the things that lead Dougiamas to create one of the most successful and groundbreaking tools for constructivist educational technology:

Martin Dougiamas was born in August 1969 in Perth, Australia, but he spent all his early years in the desert of Western Australia with his parents. He lived in a small settlement of native Australians and was the only non-aboriginal child in the community. When he grew up, he was enrolled at Kalgoorlie School of the

Air, which was over a thousand kilometers away from his home. He had to rely on distance learning and the only time he would attend the school was when it would be an annual carnival. According to Dougiamas, not seeing his classmates on a regular basis was a painful experience but he never complained and kept focusing on studies and lending his helping hands to his parents. He would communicate with his school and classmates via shortwave radio and rely on an airplane, which would drop off the necessary paperwork in every few weeks. At the age 10, he started reading books on wireless technologies and Internet. By the time he was 15, he'd spend hours experimenting with new things, especially Internet and web applications. (p. 1)

When he was 17 years old Dougiamas began to work for Curtis University. His job was to help the faculty and staff learn to use basic web applications. In this capacity he realized that the potential for information technology was often failing to be realized because it was hard for teachers who lacked the training and skills to take advantage of the technology. Furthermore, he sensed a gap between the intentions of large developers of information and communication technology (ICT) and the end users, teachers and students. At that time he is said to have committed himself to developing an "open-source solution" (Kuwar, 2012, p.1). Knowing that Social Constructivism states people learn best by engaging in social processes which allow for the construction of knowledge, Dougiamas began to pursue his vision of teachers using ICT to better achieve such social interaction in learning. Moodle is considered to be the most teacher friendly CMS currently available, and the only powerful CMS that is open source, or, free.

Another important difference, according to Cole (2005), is that:

While other CMSs support a content model that encourages instructors to upload a lot of static content, Moodle focuses on tools for discussion and sharing artifacts. So the focus isn't on delivering information, it's on sharing ideas and engaging in the construction of knowledge. (p. 5)

As sociocultural learning, collaboration and peer work represent one of the pedagogies employed in the course, the choice of Moodle to design the course website was especially suitable. Cole (2005) compared the major features Moodle, Blackboard and WebCT. He found

that Moodle contained all the standard features of both Blackboard and WebCT. Moreover, it also contained many unique features, such as the capacity to support peer work, student journals and embedded glossaries. These features were supported in neither Blackboard nor WebCT.

However, it should be pointed out that although Moodle has made it its goal to bridge the gap between teachers and technology, using Moodle well takes a lot of training and even more experience. The Instructor who designed the L2 writing course that is the subject of this study has many years of experience in the use of electronic media and educational technology. This accounts for the successful implementation of CMC into his course. He reported having a high level of satisfaction with the way his Moodle sight performed and the learning opportunities it made possible. The use of Moodle to bring about the level of CMC achieved in the L2 course used in this study requires a great deal of experience and a high level of expertise.

## **Sociocultural Learning**

### **Sociocultural Theory**

Sociocultural theory (SCT) is a psychological framework that links cognition and the social environment, or in a larger sense, culture. Lev S. Vygotsky, a Russian psychologist who worked with Alexander Luria and Alexei Leontiev until his untimely death of tuberculosis in 1934, is considered to be the developer of sociocultural theory (as cited in Gallagher, 1999). After his death his ideas fell out of favor with the government, but were kept alive by his students. His first work to be transcribed into English and published in the west was the monograph, *Thinking and Speaking*, published by MIT Press in 1962 (Vygotsky, 1962). Since then the entire body of his work has become known in the west, where his ideas continue to be highly influential in education. SCT suggests that an individual's development stems from

learning, which takes place when there is interaction with people and the tools provided by the culture. Out of this interaction comes higher order thinking skills and one's own view of the world.

The tenets of STC are generally held to be genetic analysis, social origin of development, semiotic mediation, and the zone of proximal development (Jin, 2007). But for teaching in the L2 classroom the most practical aspects of STC lie in the social origins of development and the zone of proximal development. Vygotsky studied the role of social interaction by looking at children, how they interacted with others, and how this lead to the development of cognition. Based on his observations Vygotsky believed that infants are born with the basic abilities for intellectual development. These are attention, sensation, perception and memory, which Vygotsky labeled Elementary Mental Functions (McLeod, 2007). As a child interacts with others in a social setting learning takes place and it is through learning that development, in the form of cognition, or higher order thinking skills, is achieved. Importantly, this means that everything is learned on two levels. First, learning happens thorough interactions with others in the form of collaborative and cooperative dialogues. But after that, learning becomes integrated into the individual's mental structure. In the words of Vygotsky (1978):

Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals. (p. 57)

Two concepts that are centrally important to this aspect of the social dimension of learning are the More Knowledgeable Other (MKO) and the Zone of Proximal Development (ZPD) (Vygotsky, 1978). In his studies Vygotsky was most interested in how adults, in the role of a MKO would interact with children to create learning. But in a wider sense, and particularly in

the field of education, the role of MKO can be provided by a peer (Safia & Mala, 2012), or even an electronic support system (Gallagher, 1999).

The sociocultural factor is to be found in the interaction of the MKO and the individual. This initially leads to learning on the intrapsychological plane, and eventually to personalized, internal learning on the interpersonal plane. The final outcome of all learning is development and higher order thinking skills. But in this process, what happens on the first plane of learning is most important for classroom applications. Vygotsky showed that intrapersonal learning could happen when a MKO interacts with a child in what he called the zone of proximal development (ZPD). Vygotsky (1978) defined the ZPD as the distance between the “actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86).

Another way to describe the ZPD is the level between which individuals cannot do something on their own, but can do something with the help of a MKO. Beyond the ZPD is the level at which the individual absolutely cannot do, or understand a particular task or situation. Redd (2014) observed that the ZPD can be considered as a continuum along which the learner progresses while trying to maintain an optimum balance between levels of competence and levels of challenge. Redd’s model is similar to that of Flow theory (Shernoff, Csikszentmihayli, Schneider, & Shernoff, 2003) in which the combination of low levels of competence and challenge are seen to result in boredom, while overly high levels of competence and challenge result in anxiety. The perfect balance between these states of boredom and anxiety is found in the ZPD when the individual has access to the assistance of an MKO.

Vygotsky believed that when a student is in the ZPD for a particular task, providing the appropriate assistance (scaffolding) will give the student enough of a "boost" to achieve the task (Ghallager, 1999). In that instant learning takes place and the individual can transition from the set of skills previously possessed to a new, more advanced set of skills.

The SCT concepts of social learning and the zone of proximal development support the use of peer interaction not only in L2 writing classrooms, but also in a wide variety of educational settings. As Jin (2007) pointed out, two learners who may be at the same level of actual development according to test scores may actually be at different levels depending on the task at hand. This is one reason peer response has become more widely used in a number of educational settings. It is important to remember that regardless of the setting, when working in the ZPD it is the student's potential level of development that is critical.

### **Social Constructionism Theory (Social Approach)**

Collaborative learning has grown largely out of the social constructivist movement. The roots of social constructionism theory are found in the work of social constructivists, such as Piaget, Vygotsky, Brunner, and Bandura, all of whom were first and foremost psychologists. The connecting thread among their work is the belief that we construct our own understanding of the world based on experience, knowledge is a social product, and learning is a social process (Pritchard & Woolard, 2010). Their collective body of work, which, in general, focuses on development, learning and cognition, has been influential in education.

Just as the term constructivism is a metaphor for the idea of building, Bruner introduced the use of another building metaphor, scaffolds and scaffolding, to describe the ways

in which learners and teachers interact in the ZPD (Wood, Bruner, & Ross, 1976). ZPD and scaffolding are often cited by writing educators (Cazden, 1996), and are especially important to this study of writing and the use of peers.

The search to make learning more relevant and meaningful has helped move classroom instruction away from the models of top down instruction and rote learning. For many teachers one solution has been finding ways to realize the principles of social constructivism in the classroom. This dovetails nicely with current educational trends which place a high value on student autonomy and perceive the need for students to become ever more engaged in higher order thinking skills, such as those set forth in Blooms Taxonomy of Learning, in which lower order thinking skills such as remembering and understanding help pave the way for higher order skills such as evaluation and creating (Krathworl, 2002). In many widely diverse settings collaborative learning, group activity, and peer work are becoming an increasing popular way to help students and teachers achieve their goals.

One outstanding example of a teacher who has used collaborative learning to reinvent his teaching style is Eric Mazur. A physics instructor at Harvard University, he strongly advocates for peer learning. His involvement with collaborative learning began after reading a research article that showed many undergraduates learned very little in their introductory physics courses. Mazur replicated the experiment with his own students and found that:

The students did well on textbook-style problems...they had a bag of tricks, formulas to apply. But that was solving problems by rote. They *floundered* on the simple word problems, which demanded a real understanding of the concepts behind the formulas (as cited in Lambert, 2012, p. 1)

Mazur began introducing more group discussion into his classes and found that the learning progressed more quickly and was better retained. This led him to become a strong

proponent of peer instruction. He has since published on the concept (Mazar, 1997). He also speaks widely on the merits of peer instruction, and maintains the Mazur Group, a Harvard University website that disseminates current information related to both physics and education (Mazur Group, 2015).

Having reached a huge audience, when Mazur speaks, people listen. He is said to have delivered his keynote address, “Confessions of a Converted Lecturer” over 600 times. The far sighted professor obviously feels that the rewards of using peer learning are great, but it is doubtful if even he could foresee becoming the recent recipient of the \$500,000 Minerva Prize for Advancements in Higher Education, which was awarded specifically for his work in developing peer instruction (Rocheleau, 2014).

Mazur is clearly not alone in his endorsement of peer learning. Monash University currently runs a program for Peer Instruction in the Humanities, UCLA has a Life Sciences Peer Learning Center, the University of Wisconsin maintains a Peer Learning Association, and the European Commission for supporting improving youth actions in Europe has a page dedicated to peer learning. No matter where one looks in education, it seems that peer learning is a concept whose time has come.

**Turning Peer Learning into “Flipped Classes”.** As the example of Mazur shows, the power of peer learning is becoming more appreciated in many disciplines, and in many kinds of classrooms large and small. In these settings it seems to have appropriated a new name that is becoming a buzzword, “Flipped Classes.” Millward (2013) noted that most people have heard of the concept of flipped classes, making it familiar, and she goes on to describe it as a “movement” (p. 1). Flipped classes often involve the use communication technology such as “clickers”, online chats, online video, networked peer review of written assignments, or interactive smart



boards. The end result is that using technology increases collaboration. Millward gave evidence of the following benefits of flipping a class to increase collaboration; an increase in student engagement, strengthening of group solidarity leading to higher levels of participation, increased focus on classroom discussion, and a focus on collaborative learning can allow teachers with similar courses to adapt and cover the same material in a variety of ways (Millard, 2013).

**Peer Learning in Second Language Classes.** Peer learning has enjoyed a special, growing niche in L2 studies, including writing. In fact, based on the exponential increase in L2 writing literature noted by Fujita (2006), and the fact that many recent articles take up some issue of peer learning it may be said that peer learning seems to be on the rise. There are some basic differences between the classes that Millward described and L2 classes in general. The commonalties, however, especially in regard to the advantages of using social constructivist concepts and sociocultural theory, are clear. This is all the more reason for L2 writing teachers to focus on the role and potential of peer work for their own classes, while maintaining an awareness of the potential risks and problems that peer work can involve (Carson & Nelson, 1996; Stanely, 1992; Zhang, 1995).

**Advantages of peer assessment.** Ueno (2010) listed seven advantages of peer assessment in computer supported collaborative learning for L2:

- 1) The learners are more self-reliant and their learning motivation is higher with peer assessment.
- 2) The opinions of other learners are more effective than grade points in inducing the learner's self-reflection.
- 3) By evaluating others, the assessor is able to learn from the other's work, which induces self-reflection.

- 4) Feedback from others who have similar backgrounds is readily understood.
- 5) It reduces the instructor's workload and the learner can receive useful feedback even when there is no instructor.
- 6) Useful feedback which the instructor is unlikely to provide can be obtained; a wide range of feedback can be obtained.
- 7) When learners consist of mature adults, evaluation by multiple peers is more reliable than a single instructor.

### **The Changing Role of Teacher Authority in Collaborative Learning**

More traditional approaches to second language, the audio-lingual approach for example, put a high value on drills. Sometimes this is called, the 'Drill and Kill' approach to teaching; students get drilled and drilled in some aspect of a lesson until it kills their interest. In moving away from such behaviorist-based approaches as top down teaching and rote learning, the role of collaborative learning offers practical and theoretical advantages. Kenneth Bruffee, one of the pioneers of current collaborative learning, spent many years looking for a way to redefine and revitalize university education. By his own admission, the ends he sought were elusive and a long time coming (Bruffee, 1999). The path was strewn with less than perfect outcomes, but these lead to further consideration and more development in his concepts. He came to see the issue of authority as a major stumbling block. In the traditional classrooms of the 1970's students would reject the idea that they, not the teacher, held the authority. Bruffee realized that, things being what they were, the students had a point, and that teachers could not change the way they exercise authority without changing the nature of that authority. Bruffee decided that the most important role a teacher can provide is to be an agent of change. He feels that collaborative learning cannot work without changing the "longstanding assumptions that we all hold about

what teachers do and why they do it” (p. vii). In the twenty years since Bruffee called for fundamental revisions of such basic assumptions, the ascent of collaborative and peer learning in American college classrooms is a testimony to both his vision and the validity of his beliefs and methods.

From the theoretical perspective of sociocultural theory of mind, cognition and knowledge are dialogically constructed. This makes collaborative learning a process in which the teacher will play many roles, important among them is that of a facilitator (Swain & Lapkin, 2002). In a collaborative learning environment the teacher will have to find ways and means to allow peers to go through the steps of creating their own knowledge. Peer work can be carried out in many ways. The peers may be part of a discussion group, or they may be assigned to work as pairs. Their interactions can involve speech, reading, and writing. They can be on or off line, and the timing can be live (synchronous), or delayed (asynchronous). These distinctions matter in terms of how the teacher prepares and supports the peers. As Swain points out, in collaborative learning situations the knowledge is socially constructed. Effective learning will largely depend on how well peer response situations are presented and followed. In L2 writing classrooms collaborative learning will always have the same ultimate goal, to help learners make meaning and create their own knowledge. To that end, the job for teachers is not to make students learn, but to help learning happen through collaboration and support.

### **Writing Groups and Task**

If the teacher is actually going to change the nature of authority in an L2 writing classroom by introducing group and pair work, one obvious concern is whether or not the groups can and will stay on task. Nelson and Murphy (1992) examined two aspects of L2 writing groups, the task dimension and the social dimension. The case study approach involved a single

writing group of 4 students in an intermediate ESL writing at a large U.S. university. Information, in the form of 6 videotapes that were later decoded, show that the writing group did a good job of staying on track and discussing the work of peers. However, when the social dimension is taken into account the analysis suggests that the group did not meet the idealized image of writing groups often presented in literature. While three of the four students stated that they benefitted from group participation, one student in particular became characterized by the group as an “attacker” (p. 171). This led to some dissatisfaction with the writing group. Feelings of being incompetent at commenting on other’s work and a desire for more teacher involvement were also cited as reasons for dissatisfaction.

### **Stance as an Indicator of Student Assumption**

The implications for sociocultural interaction and learning seem clear when observing group work, but what about a situation in which students are responding to someone they have never met? Theoretically, such responses would be an indication of how students view and position themselves to the work of others in a peer response situation. To find out what stances peer evaluators would take, Magelsdorf and Schlumberger (1992) set up a peer response task in which 60 ESL students in a university composition class read and evaluated the writing of a student they had never met. That is to say, the task was decontextualized by totally separating the peer reviewers from the writer. Using an open-ended, free writing approach, reviewers were given 30 minutes to respond to the writer. The reviewers followed certain prompts provided by the instructors. The reviews were then coded by the researchers, who found three stances, collaborative, interpretive, and prescriptive. When taking a collaborative stance, reviewers were trying to see the text from the author’s point of view. In the case of an interpretive stance, reviewers tried to impose their own views onto the text, and in the cases of a prescriptive stance

reviewers expected the text to follow a prescriptive form. It was found that 32% of the reviews fell into the collaborative category, 23% of the reviews fell into the interpretive category, and 45% fell into the prescriptive category. Since it is thought a collaborative stance can be more enriching than the other two stances, it may be important to foster a classroom environment and perhaps provide direction and training to help increase the collaborative stance of reviewers.

### **Peer Response and Training**

As Bruffee (1999) noted, the issue of authority is critical. One reason peers may show reluctance or inability to effectively exercise authority is possibly due to a lack of experience and training. Stanley (1992) noted that although peer review is a widely accepted policy in L1 classes, there is a tendency on the part of ESL instructors to question this kind of group work. Two concerns voiced by Stanley are 1) a tendency for students to focus on surface problems rather than meaning, and 2) a tendency for students to offer advice that is neither constructive, nor helpful. To address such concerns Stanley prepared 31 university ESL students to carry out peer evaluation.

The students were divided into two groups. One group received extensive training such as role-playing, studying the genre of student writing, and coming up with rules for effective communication (Stanley, 1992). The other group was prepared in a much more abbreviated fashion, by watching a demonstration and then having a discussion. Stanley audiotaped the peer evaluations of the students in both groups. The tapes were then coded and responses were assigned to one of seven categories of, evaluations, advising, collaborating, announcing, reacting, eliciting, and questioning. Three writer response types were also coded and measured, responding to the evaluator, eliciting, announcing, and clarifying. Stanley's finding showed that on all measures the more highly coached peers outperformed the peers who only received

minimal training. Although the training of peers in such a fashion took a great deal more time, it was, in Stanley's view, justifiable based on the higher levels of engagement shown by the trained peers.

### **Peer Response and Writing Quality**

Berg (1999) used an experimental design to see if trained peer response would shape students' revision types and writing quality. Forty-six ESL university students were divided into two groups, one group received peer response training and the other did not. The training provided students with the language and rationale for using peer response in the classroom. Students wrote a first draft (pre-peer response) and a second draft (post-peer response). No difference between the pretreatment writing had been found between the groups.

The drafts were compared by the researcher to see if peer response training influenced writing quality. Berg (1999) found that, in fact, trained peer response does influence writing quality in the following ways; 1) it will generate more meaning changes, 2) it will yield high quality scores, and 3) its effects will not be influenced by differences in writing proficiency. Berg noted that students can learn about academic writing through peer response when, for example, through discussion they apply knowledge about their writing and "discover viable text alternatives to unclear aspects of their writing" (Berg 1999, p. 232). Berg's results indicate that, with training, peer response can be helpful to L2 writers and lead to writing improvement.

### **Discussion as a Form of Peer Response**

In order to see what role oral/aural peer review might play in the development of basic composition skills and written fluency, Hedgcock and Lefkowitz (1992) carried out an experimental study of 30 college level French learners. All the students had adequate training to be enrolled in an advanced course, but their writing skills were judged to be basic. There were 14

students in the experimental group, and 16 in the control group. Both groups wrote two essays, and the writing process involved writing three drafts for each essay. In the control group they gave each student written feedback, while in the experimental group the feedback was in the form of discussion. Prior to the discussion each student read his draft out loud in class. To measure the outcomes the final drafts for both groups were collected and graded holistically for content, grammar, organization, vocabulary, and mechanics. The results showed that there was no statistically significant difference between the two groups in terms of overall score, which means that both oral/aural peer response and written teacher feedback were equally effective. However, there were differences among the sub categories when the first and second essays were compared. Students in the control group showed positive, statistically significant differences in the areas of grammar, while the experimental group showed statistically significant positive differences in content, organization, and vocabulary. Based on the results it would seem that oral/aural feedback can make a meaningful contribution to the L2 writing classroom. And it is particularly effective in that it gives the students exposure to a more diverse audience, and is timesaving for the instructor.

### **Effects of Peer and Teacher Feedback on Revision.**

Noting that teacher feedback, peer feedback, and revision are common components of the process approach in ESL writing classrooms, Paulus (1999) conducted an experiment to see what the effect of these three components are on the improvement of student writing. 11 university ESL students enrolled in a course designed for students who needed further development of their writing skills before taking required freshman composition classes took place in the experiment. After seven weeks of instruction the students wrote three drafts of a persuasive essay. After the first draft a guided peer review session was held in class. Then the students wrote the second

draft, which was given written feedback by the teacher. Finally, while using Think Aloud Protocols, which were recorded, the students wrote their third and final draft. The researchers collected all the drafts and accounted for the source of all the changes. Faigely and Witte's (1981) taxonomy of revisions was used to categorize the types of changes. The results showed that students used both peer and teacher feedback to revise their drafts with 34% of all revisions were a result of teacher feedback, 14% a result of peer feedback, and 52% of revisions resulting from some outside source. Paulus' study found a much higher percent of revision passed on feedback than the 5% reported by Connor and Asenavage (1994). Finally, the results showed that multiple revisions did significantly improve essay scores.

### **Motivation and Second Language Acquisition**

Motivation has come to be seen as a key element in the learning of language. Traditionally, aptitude, that is language skills such as phonemic coding, grammatical sensitivity, inductive language ability and memory at learning were considered the best predictors of language success (Skehan, 1989). But today motivation is considered to be an equally important indicator (Gass & Selinker, 2001). It is now extensively researched in many diverse settings. However, this has not always been the case. Gardner, one of the pioneers of motivation research, points out that when he began his studies of motivation in 1956 with Lambert, "It was generally agreed that learning another language involved intelligence and verbal ability. Concepts like attitudes, motivation and anxiety were not considered to important at all" (Gardner, 2001, p. 8).

Oxford and Shearin (1994) credit Gardner and his colleagues with putting "L2 learning and motivation on the map" (p.16). The research that was launched by Gardner and Lambert has come to appreciate a wide acceptance and growing interest among SLA researchers. It is fitting,



and necessary, that any discussion of L2 motivation should start, but not necessarily end with a discussion of Gardner's work.

The issue of L2 motivation is complicated by the fact that motivation is not easy to define concisely. Gass and Slinker (2001) noted that most researchers agree motivation has something to do with drive but that when various definitions are compared it becomes clear that these definitions differ in significant ways. This has given rise to ongoing debates about what motivation actually is and the exact nature of the effect of motivation in SLA (Dornyei, 1994a, 1994b; Noels, Pelletier, Clement, & Vallerand, 2000; Oxford & Shearin, 1994; Schmidt & Crooks, 1991). This discussion has given rise to growing diversity of both the definition and investigation of motivation as a factor in SLA.

In order to understand the basic concept of motivation as it relates to this study of L2 writing, it is important to consider Gardner's two orientations of language learning (integrative and instrumental) as described in the Socio-educational model, and Deci and Ryan's (1985) orientations (extrinsic and intrinsic motivation) as they are expressed in Self-Determination Theory and employed by Noels (2001). It is then necessary to understand and compare the differences in Gardner's Socio-educational model, and Dornyei's (2005) L2 Motivational Self System, which draws heavily on Self Discrepancy Theory.

### **Integrative verses Instrumental Motivation Orientation**

Orientations are not motivation. They are reasons for learning an L2, and they contribute to the setting of goals that can provide and sustain varying intensities of motivation (Ortega, 2009). This is an important distinction and although integrative and instrumental orientation are thought of and referred to as a type of motivation, the distinction between motivation and orientation is an important element that should be maintained.

Gardner (2005) related his googling the term “integrative motivation” and getting 591 hits. (Today, even a limited, filtered search for “Gardner, integrative motivation” will yield about 832 hits.) Although he was impressed that the term has such a wide audience, he noticed, “many people have different conceptualizations of the term” (p. 2). In comparing two readily available online definitions he found significant overlap, but more importantly his attention was drawn to the fact they included some, but not all of what he considered the elements of integrative motivation orientation.

Gardner (2005) defined integrative motivation in a broad sense and felt that a number factors were involved:

In 1985, I discussed the concepts of motivation and integrative orientation, and then concluded that “The concept of integrative motivation includes not only the orientation but also the motivation (i.e., attitudes toward learning the language, plus desire plus motivational intensity) and a number of other attitude variables involving the other language community, out-groups in general and the language learning context” (Gardner, 1985, p.54).

Gardner’s definition of integrativeness is sweeping. In more practical terms it is usually associated with the degree to which the learner identifies with the speech community. Students who want to learn a language because they hope to make friends or experience the target culture may be said to be more highly integratively motivated than students who have none of those interests.

On the other end of the orientation spectrum is instrumental orientation. Instrumental orientation has reasons for L2 learning that reflect practical goals, such as academic success, or job advancement (Noles, 2001). In the first study to directly access these orientations among students who studied French as a second language, Gardner and Lambert made use of the Orientation Index, in which participants would self-report their purposes for studying French as being either instrumental or integrative (Gardner & Lambert, 1959). Gardner now admits

that, "This measurement decision was unfortunate because it gave the impression that individuals could be classified as interrogatively or instrumentally orientated in their study of a second language" (Gardner, 2001).

Gardner came to realize that motivation, which he had originally described as, "the combination of effort plus the desire to achieve the goal of language learning plus favorable attitudes toward learning the language" (Gardner 1985, p. 10), was made of a combination of several factors and that a language learner can have both integrative and instrumental orientation.

### **The Socio-Educational Model**

According to Gardner (2010) the first social psychological model of language acquisition was outlined by W. E. Lambert and proposed, "aptitude, attitudes, orientation, and motivation promote the development of bilingual proficiency and that this can have an effect one's self-identity" (p. 207). One way this could happen was through either additive or subtractive bilingualism. In 1975 Lambert proposed that additive bilingualism could apply to members of a majority learning the language of the minority, and would not result in any loss of ethnic identity (cited in Swain & Lapkin, 1991). Subtractive bilingualism could occur when minority group members learned the language of the majority at the risk of losing some of their own cultural identity. This work was followed by the work of Gardner and his colleagues that lead to the development of the socio-educational model, which "retained the elements of Lambert's social psychological model but expanded it to take into account the language learning situation, distinguishing between formal and informal leaning contexts" (Gardner, 2010, p. 208).

As the name implies, the socio-educational model stresses two important features of language learning, culture and context (Gardner, 2009). The original version of the socio-

educational model was formulated in 1974 and a slightly adapted version was published in 1979. A basic premise of the socio-educational model of second language acquisition that distinguishes it from other models is that “because another language is a major characteristic of another cultural community, learning a language is different from learning most other subjects” (p. 139).

After decades of continuing research and development, Gardner (2009) published a structural equation representation of the social-education model. To measure the concepts of the model Gardner designed the Attitude/Motivation Test Battery (AMTB). Overall, Gardener is best known for his definitions and operationalization of integrativeness and instrumentality and the way he defined them, that is, as motivation orientations to motivation.

However, integrativeness and instrumentality are not the only constructs that Gardner uses to define motivation. Attitudes towards the learning situation, as well as aptitude (not measured by the AMTB), are also considered to influence motivation. Language anxiety (measured by the AMTB) is also considered to affect language achievement. These concepts and their measurement evolved and changed slightly as Gardner and his colleagues worked to perfect the socio-education model between 1974 and 2006. This process of change and evolution was related in part to criticisms of alleged shortcomings of the model raised by a number of researchers between 1989 to 2005 (Dornyei, 1994a, 1994b, 2005; Noels, Pelletier, Clement, & Vallerand, 2000; Oxford & Shearin, 1994; Schmidt & Crooks, 1991). Based on the revisions and development of the model Gardner addresses opposing claims that the concepts are not clearly defined or accurately assessed as simply “not the case” (Gardner, 2009, p. 87.)

### **The Attitude Motivation Test Battery**

In order to measure the concepts used in the socio-educational model, The Attitude/Motivational Battery Test, a self-reporting survey, is administered to students learning

an L2. It is an extensive instrument that contains 104 items (see Appendix H) each of which is each tied to one of the key concepts of the socio-education model. The specific items are related to the key concepts as follows:

*Integrative orientation* - Items 8, 28, 50, 72.

*Attitudes Toward English Speaking People* - Items 7, 27, 40, 49, 53, 71, 91, 104.

*Interest in foreign languages* – Items 1, 12, 21, 32, 42, 55, 65, 76, 85, 95.

*Attitudes towards the Learning Situation* – Items 5, 14, 25, 34, 46, 58, 69, 78, 89, 97.

*Motivation* – Items 3, 13, 23, 44, 67, 87, 56, 77, 96.

*Desire to learn English* – Items 9, 17, 29, 37, 51, 61, 73, 81, 92, 99.

*Attitudes toward learning English* - Items 6, 8, 26, 38, 62, 82, 47, 70, 90, 100.

*Language Anxiety* – Items 4, 16, 24, 36, 45, 60, 68, 80, 88, 98.

*Language use anxiety* – Items 11, 19, 31, 39, 54, 63, 75, 83, 94, 101.

*Instrumentality* – Items 15, 35, 59, 79.

*Parental encouragement* – Items 2, 22, 43, 48, 57, 66, 86, 103.

### **The Reopening of the Motivation Question**

It can be argued that what accounts for the strength of the socio-economic model also accounts for its weakness. It is limited by the setting it initially set out to investigate, the learning of French and English in school programs in bilingual Canada. Carefully designed and executed the model gave excellent results in this sphere. But other research which sought to apply the model in a wider variety of settings failed to support the model (Chihara & Oller, 1978; Lukmani, 1972; Oller, Hudson, & Liu, 1977). Clement and Kruider (1983) proposed that definitional problems as well as the failure to consider the social milieu were at the source of these discrepancies. Their research shows that integrative orientation appears only in

multicultural settings among members of a clearly dominant group. However, four orientations were found to be common to all groups of learners: (1) travel, (2) friendship, (3), knowledge, and (4) instrumental orientations (Noels et al., 2000.)

Oxford and Shearin (1994) point out that the work of Gardner and his colleagues provides “a strong base for constructing a broader theory” (p. 12.). They also provide strong arguments as to why the theories related to motivation and language learning should be broadened. These are related to the fact that current theory might be impeding a full understanding of L2 learning motivation in four ways: 1) creating a lack of consensus as to the definition of L2 language learning; 2) confusing the difference between second vs. foreign language situations; 3) the omission of key motivational and developmental theories in other areas of psychology; 4) teachers’ lack of knowledge about students’ real reasons for learning a language.

It is also proposed that Gardner’s definition be expanded to allow for changes that can take place over time in students’ reasons for learning a language. The difference between learning as a second language (ESL) and learning English as a foreign language (EFL) called attention to the fact that the majority of research related to the socio-educational model involved a second language learning situation in which the target language is typically used simply as a means of communication without the close cultural and proximal ties of bilingual settings such as Canada. In foreign language situations, such as many of the EFL classrooms in Asia, the language may not be used for routine or ordinary communication, and learning may be limited to the classroom and be artificial in nature. Oxford and Shearin (1994) proposed that the potential for motivation to differ between second language learners and foreign language learners needs to be more fully investigated. The perceived need for investigating other potentially valuable

motivation and development theories is made largely in response to the fact that Gardner's work was strictly within the bounds of social psychology, and was concerned with the individual in the context of a group, often seen as a target culture. Oxford and Shearing proposed that other frameworks, such as need theories, expectancy-value theories, equity theories and reinforcement theories could be employed to expand the theoretical framework.

Noels et al. (2000) express a similar opinion regarding the need to explore other models, in particular those that are not directly involved with L2 research. They take up the consideration of self-determination theory (Deci & Ryan, 1985) as an example of one such model deemed useful in informing the understanding of motivation and the ways in which it relates to the motivational orientations of Clement and Kruidenier (1983).

### **Intrinsic and Extrinsic Motivation**

According to self-determination theory there are two general types of motivation, intrinsic and extrinsic. Intrinsic motivation is based on the intrinsic interest in the activity per se. Extrinsic motivation is based on rewards extrinsic to the activity (Noels et al., 2000). These two types of motivation are not different in terms of category. They simply represent the continuum of self-determination. Intrinsic motivation (IM) refers to the motivation to engage in an activity because of personal satisfaction or enjoyment. Ryan and Deci (2000) described intrinsic motivation as "the doing of an activity for its inherent satisfaction" (p. 56). Ryan and Deci hypothesized that given free choice people will seek interesting situations, and that in challenging the activity they develop competence in their abilities. Activities that are done to achieve some reward or advantage are extrinsically motivated. Ryan and Deci (2000) described extrinsic motivation as "activity that is done for a separable outcome" (p. 60).

In a study 159 English speakers learning French, Noels et al. (2000) found that learner motivation can be validly assessed using intrinsic and extrinsic subtypes. However, the use of self-determination theory to investigate L2 learning motivation never gained the wide acceptance given to the socio-education model that it sought to expand, nor the construct that followed it, Dornyei's L2 Motivational Self System.

### **L2 Motivation Self System**

In 2005 Dornyei outlined a new approach to conceptualizing second language learning motivation. The framework for this new approach was 'self', and the name Dornyei gave to his new theory is the 'L2 Motivational Self System'. Dornyei's theory of the study of L2 motivation represents what is probably the most far reaching of the new theories. It can be likened to the work of Gardner in that it starts with the premise that "a foreign language is more than a mere communication code that can be learnt similarly to other academic subjects" (Dornyei, 2009, p. 9). In fact all L2 motivation theories adopt paradigms that link L2 to the individual's most central beliefs and identity, and Dornyei's theory can be seen as a logical extension of this tradition. But it is clearly a break with the socio-educational model as put forth by Gardner. Dornyei felt that the socio-educational model concepts of integrativeness and integrative motivation do not make sense in many learning environments where there is no strong connection between the L2 learner and any specific, target culture.

In terms of L1 and L2, the distance between English and French language is uniquely close in Canada where the early studies of L2 motivation were initially launched. But the same cannot be said for many Asian or Central European countries which are not closely linked to any English speaking people or cultures, but where a great



deal of effort is expended on learning English as an L2. This gives rise to what Dornyei (2009) described as a “love-hate relationship with researchers outside Gardner’s Canadian circle” (p. 23) when it comes to the concepts of integrativeness as it is set forth in the socio-educational model.

Although centrally important to the socio-education model, Dornyei (2009) suggested that when a foreign language is taught as a school subject, but without any direct contact with its speakers, that Gardner’s definition of integrativeness, in the social psychology sense, loses its meaning. Being ready to “move beyond integrativeness” (p. 25) towards possible selves theory seemed to offer interesting alternatives to the traditional, socio-educational approach of integrativeness. In 2002 Dornyei and Csizer called for rethinking the concept of integrativeness:

The term may not be so much related to any actual, or metaphorical integration in to an L2 community, as to some basic identification process within the individual’s self concept....we believe that rather than viewing ‘integrativeness’ as a classic and therefore ‘untouchable’ concept, scholars need to seek potential new conceptualizations and interpretations that extend or elaborate on the meaning of the term without contradicting the large body of relevant empirical data accumulated during the past four decades. (p. 456)

This sums up the feelings and intent of many scholars who were beginning to feel limited by the traditional, social psychological definition of integrativeness. Peter MacIntyre and Richard Clement (2009) are some of the original members of researchers who worked with Gardner on the socio-educational model. Yet, they have come to share Dornyei’s views on the thorny issue of integrativeness. In an article appropriately titled *The Baby, the Bathwater, and the Future of Language Learning Motivation Research*, Peter MacIntyre, Sean P. Mackinnon, and Richard Clement (2009), saw Dornyei’s work with possible selves as being “most welcome”

and state that “the position of possible selves and integrative motivational perspectives are not mutually exclusive, and are instead complementary concepts” (p. 43).

In developing his theory of self Dornyei was influenced by the ideas of Edward Tory Higgins, the founder of Self-Discrepancy Theory. Higgins based much of his theory on two key components, the ideal self and the ought self (Dornyei, 2009; Higgins, 1987). In self-discrepancy theory ideal selves are seen to promote growth, achievement and goal reaching. The ought self has a prevention focus that regulates behavior to ensure responsibility and safety (Higgins, 1998). Motivation involves the desire to reduce the discrepancy between the actual self and the ideal/ought self. But it was the growing evidence from Dornyei’s now famous longitudinal studies of Hungarian language learners (Dornyei, 2006) which lead to his coming up with a new conceptualization of integrativeness. Integrativeness, although describe differently from Gardner’s original concept, as well as instrumentality, are both central components of motivation (Dornyei, 2009). The study spanned over 15 years, and involved over 13,000 learners of five target languages (English, German, French, Italian, and Russian). The attitude/motivation questionnaire, containing 104 self-reporting items, was developed with one of Robert Gardner’s close associates, Richard Clement. There was, therefore, a significant focus on Integration, as well other specific motivational dimensions such as Instrumentality, Cultural Interest, Vitality of the L2 Community, Milieu, and Linguistic Self-Confidence. One of the main findings was that integrativeness was the most important component of the L2 motivation construction. Using structural equation modeling the researchers found that integrativeness subsumes all other factors, including instrumentality. Using the socio-educational model to explain the potency of integrativeness in the language context of Hungary is problematic, as there is no salient L2 present. Based on these results Dornyei and Csizer

(2002) suggested that in the learning situations where the language is taught in school and there is no direct contact with its speakers integrativeness, represents something broader than the descriptions set for by Gardner in the socio-educational model.

Based on these insights, Dornyei (2009) went on to develop his L2 Motivational Self System, which is made of three components:

1. *Ideal L2 Self*, when the person we would like to become wants become an L2 speaker, ideal L2 self becomes a powerful motivator because of the desire to reduce the discrepancy between our actual and ideal selves. Traditional integrative and internalized instrumental motives would belong to the Ideal l2 self component.
2. *Ought Self*, corresponding to Higgins ought self, the L2 ought self is concerned with attributes that one believes one should possess to meet expectations and avoid possible negative outcomes.
3. *L2 Learning Experience*, concerns motives related to the immediate learning environment teacher impact, peer group, experience of success.

Between 2006 and 2009 several important quantitative studies have been carried out to test and validate the L2 Motivational Self System (Al-Sheri, 2009; Csizer & Koromos, 2009; Ryan, 2009; Taguichi et al., 2009). They were carried out in China, Hungary, Japan, and Saudi Arabia, all countries where there is not a strong presence, connection or exchange with a target language community. The studies looked at different sample types from secondary to adult learners and their combined sample size was over 6,000. This has provided confirmation of the proposed self system (Dornyei, 2009).

## **The Role of Grammar and Explicit Teaching in Second Language Acquisition**

The combination of the writing process approach with a computer mediated, sociocultural approach to teaching reflects important, specific choices the course designer made related to centrally important issues in L2 teaching and learning theory. However, these specific pedagogical approaches are not the only areas of interest in this study. Other deliberate choices related to questions of explicit versus implicit grammar teaching, and the effectiveness of various forms of correction, topics that have a long and complex history in the development of TESL pedagogy. These choices, in turn called for an intention on the part of the instructor to use noticing and forced output as a way to increase students' overall L2 writing skills.

The oldest and most traditional approach to grammar and second language study is the grammatical translation of written forms. Using the eight parts of speech (nouns verbs, participles, articles, pronouns, adverbs, and conjunctions) developed to analyze Greek and Latin, 18<sup>th</sup>-century grammarians developed the traditional Grammar-Translation approach that became the basis for the teaching of English grammar (Hinkle & Fotos, 2002). According to Howatt (1984) this traditional form of grammar instruction remained the primary method of English instruction in the United States and the United Kingdom until recently, and it is still used in many EFL classrooms where "English is learned mainly through translation into the native language and memorization of grammar rules" (Hinkle & Fotos, 2002, p. 2). In such settings, the teaching of grammar is part of a highly explicit approach to language instruction.

The direct method sought to replace the traditional grammar translation method and was very popular in the late 1800's and early 1900's. It was based on the idea that learning would happen naturally if the learner was immersed in the target language, there was a focus on speaking and listening, and grammar was taught inductively (Rhalmi, 2009). The direct method

was based on the assumption that L2 learning could happen in much the same way L1 learning does. Similarities and differences in learning L1 and L2 is a recurring theme in L2 studies, but the fact is that the conditions under which L1 and L2 are learned are very different, and this lead to difficulties with the direct method. Brown (2000) noted that another reason for the fading interest in the direct method was that “it did not take well in the public education where the constraints of budget, classroom size, time and teacher background made such a method difficult to use” (Brown, 2000, p. 56).

As language study expanded throughout the 1940’s and 1950’s to describe world languages, the inappropriateness of using the eight parts of speech called for a shift in the way languages were studied and taught. A structural view of language evolved that focused on three subsystems; the sound system (phonology), the discrete units of meaning (morphology), and the system for combining units of meaning (syntax) (Larsen-Freeman & Long, 1991). The emergence of the audio-lingual approach combined the structural approach to language with a behavioral view of learning that was based on the concepts of stimulus and response as well as positive and negative reinforcement. The audio-lingual approach aimed at developing spoken fluency through the presentation of forms in a linear manner and carrying out drills and repetition to bring about accurate production of the target language. The nature of teaching was aimed at fostering productive language skills based on rote learning. Students were expected to produce perfectly spoken examples of the target language. Explicit grammar instruction, however, was not a part of the audio-lingual approach.

The functional approaches developed by British linguists in the 1960’s differed from the Audio-lingual approach most basically in that they used syllabuses that were based on communicative functions, such as ‘asking directions’ or ‘shopping’. The explicit teaching of

grammar plays an important role in the functional approach, and the linear movement from easy to difficult forms is common with learner practice taking place in a controlled framework.

However, in the final stages more spontaneous learner production is encouraged.

The audio-lingual and functional approaches both made a contribution to the movement towards the focusing on the competency of the learner in the spoken production of L2. However, the basis for a new concept, transformational grammar, was presented with the publication of Chomsky's (1957) *Syntactic Structures*, famous for its grammatically correct, but syntactically nonsensical sentence, "colorless green ideas sleep furiously" (Chomsky, 1957, p. 15). Moreover, Chomsky's (1959) response to, and revocation of, B.F. Skinner's *Verbal Behavior* (1957) paved the way for the rejection of the basic structuralist view of language as habit. In its place, Chomsky put forth and supported the view of language as a "generative process existing innately in the human brain and based on syntax" (Hinkel & Fotos, 2002, p. 3). This led to a focus on the cognitive nature of language learning and L2 language acquisition in which the emphasis on explicit grammar instruction was again emphasized. Grammar was considered too complex to be learned naturally, and language was considered to require mental processing which would lead to linguistic competence.

In what was to amount to the first modern assault on explicit grammar teaching as a means of attaining linguistic competence, the Communicative approaches of the 1970's stated that learners could acquire L2 forms (grammar) and vocabulary naturally. The connections to the Direct Approach are obvious. At the head of this movement was Stephen Krashen, who put forth the Monitor Model and Input Hypothesis (Krashen & Terrell, 1983). These state that language acquisition depends on a learner achieving linguistic competence, which takes place naturally when the learner is exposed to comprehensible input ( $i+1$ ). Comprehensible input is

described as: "language input that can be understood by listeners despite them not understanding all the words and structures in it. It is described as one level above that of the learners if it can only just be understood" (British Council, 2014).

On the surface similarities between Krashen's  $i+1$  and the much more robust ZPD and MKO as set forth by Vygotsky may seem striking, and apparent similarities have been noted by some (Kramsch, 1992; Richard-Amato, 1983; Schinke-Llano, 1993). But upon closer inspection, Dunn and Lantolf (1988) found that integrating the two concepts "is futile, not only because the concepts are unrelated, but also because they are rooted in incommensurable theoretical discourses" (p. 411.) One reason for this assertion is that  $i+1$  is meant to represent a passive act that will inevitably occur when a language learner's Language Acquisition Device (LAD) is stimulated, resulting in acquisition of the target language. Interaction in the ZPD, however, involves social interaction, a mutual process, which enables the learner to develop at a level beyond that which he could reach on his own. This development leads to both the creation and transmission of culture and learning, which, in turn, results in the emergence of something new and unique. In the ZPD, development, which is negotiated, precedes learning. In  $i+1$  learning is automatic and reflexive. The processing is subconscious. Looked at from this point of view, it could be said that  $i+1$  is only a pale shadow of what Vygotsky seeks to explain with the ZPD and interaction with a MKO.

The communicative approach represents the height of the movement away from explicit grammar teaching, however as Nassaji (1999) observed, "theoretical perspectives on language teaching and learning have changed" (p. 387). Nassaji developed the argument that activities focusing solely on the message (comprehensible input) cannot lead to an accurate knowledge of language. Studies of French immersion students in Canada have shown that even after eight

years of comprehensible input students remained non-native like in both spoken and written French (Harley & Swain, 1984; Swain 1985.) Further examination of L2 teaching and learning that focused only on meaning and comprehensible input found that in order to avoid fossilization and achieve accuracy and competence it was necessary that instruction should not only seek to develop communicative skill, but should also draw learner's attention to linguistic forms (Muranoi, 2000).

A new pedagogy emerged which sought to combine implicit grammar instruction with communicative language use. Long (1988) found that instructed language learning was advantageous in terms of rates of learning and achievement. Long (1991) conceptualized the integration of grammar instruction with communicative language learning with the term focus on form. Unlike the traditional approaches to grammar teaching, which Long termed focus on forms, focus on form puts primary focus on meaning and communication while drawing the learner's attention to linguistic elements in such a way that they will be noticed by learners.

Focus on form changed the way grammar was to be effectively used in L2 pedagogy. It was an answer to the conundrum that traditional, explicit grammar teaching did not seem to help develop communicative competency and fluency, while a total lack of grammar instruction failed to achieve higher levels of competence and accuracy. Focus on form is considered to be especially effective when used with task-based learning. The inclusion of grammar can be either implicit, or explicit. But the importance of a communicative setting that allows for use of the target structures is essential. A learner's command of L2 grammar skills is not immediate, but emergent, and is seen to be a "complex, gradual and inter-related" part of L2 acquisition (Fotos, 1998, p. 302).



The processes through which grammatical competence emerge are of interest. Schmidt's (1983) three year study of "Wes", a Japanese professional living in the Honolulu, cast light on the phenomena of L2 learners acquiring (or in the case of "Wes", not acquiring) grammatical competence. Although Wes was very successful at communicating socially, had many opportunities to engage in L2 learning, and enjoyed his encounters in English on many levels, he never acquired grammatical competency, and over the three years of the study his language skills showed little development. The gap between Wes's social success at integrating into a foreign culture is difficult to reconcile with the extreme stagnation in his level of L2 development.

Schmidt (1986) went on to document his own experiences in learning Portuguese. He realized that although he received grammar instruction in lessons, that information could lay dormant for a long time, until he forgot ever learning it. But, later, when he encountered a communicative situation that called the prior learning to his attention he would start to notice it. He also realized that this process of noticing caused him to rethink his understanding of Portuguese and make changes in his strategies. Eventually Schmidt founded the Noticing Hypotheses, which states that learners cannot learn grammar forms of a language unless they notice them. Schmidt did not see noticing as acquisition, but as the start of acquisition.

Swain's (1985) Comprehensible Output Hypothesis also gives consideration to the role grammar instruction plays in successful L2 acquisition, and the ways in which grammatical competency develop. The Output Hypotheses as put forth by Swain (2007) stated that the act of producing language constitutes part of the process of second language learning. Swain (1985) proposed "producing the target language may be the trigger that forces the learner to pay better attention to the means of expression" (p. 249). Ortega (2009) observed that Pushed Output happens when "demands exceed the learner's current abilities" (p. 63). The ways in which

pushed output may help students develop the skills they need to convey meaning are noticing, hypotheses-testing, and reflection. These acts can destabilize their interlanguage (the current version a learner has of the language being learned) and pave the way for learning.

However, Decoo (2001) noted that although methodology is important, the success of language learning is tied to variables that can be said to lie beyond the realm of method; the motivation of the student and intensity they bring to their own work. Pointing out that motivated people learn languages as successfully (or unsuccessfully) now as they did 2000 years ago, he proposes that methods can only be said to be partially responsible, and that a great deal depends equally as much on the student. Decoo's observations are in keeping with contemporary approaches to the role of motivation and individual differences in Second Language Acquisition theory (SLA).

### **Course Design Choices Made by the Instructor Based on Issues in SLA Literature**

In the design and execution of the L2 writing course used to provide the data for this study the Japanese instructor made very deliberate choices based on established SLA theory about the nature of writing and learning. The role of implicit grammar and the lack of genre instruction were two important choices made the instructor. He understood that Japanese secondary English education relies heavily on traditional grammar translation and a focus on forms. The decision not to include explicit grammar training and genre writing in the course can be seen as the instructor's reaction against the overuse of focus on forms in secondary education. During our discussions he voiced his belief that the students had significant previous exposure, in fact over-exposure, to traditional grammar instruction. He saw the use of computer mediation as a way of accelerating and L2 writing proficiency and development thorough implicit instruction, peer review and the writing process.

As a result of these decisions the instructor could carry out a more intensive writing program than could be carried out in a typical, teacher fronted composition classroom. The instructor assumed that the advantages of computer mediation and the avoidance of explicit grammar and genre instruction would allow more time for the students to focus on the writing process approach and stimulate more communication among the peers as writers and editors. Based on his own experience, he reasoned that heightened and extended practice would lead to greater writing development in terms of increased fluency. Furthermore, he expected that grammatical accuracy and discourse could be enhanced if heightened peer interaction and pushed output lead to greater noticing and attention to language on the part of the participants. One purpose of this study was to see if the archival data generated by the course would substantiate his beliefs.

## **CHAPTER THREE: METHODOLOGY**

In this chapter, all issues centrally important to conducting the study are discussed. The specific research questions are set forth as well as the research design, sampling, and their effect on the study's internal and external validity. Pertinent information related to measures and procedures is set forth. Finally, the methods of data analysis are presented and explained.

### **Research Approach and Rationale**

#### **Archival Data**

This study was carried out using archival data from a Japanese university required freshman English as a Foreign Language (EFL) Composition course during the 2013 fall term, from September 30<sup>th</sup> to February 3<sup>rd</sup> (see Appendix B for Class Schedule). The course was carried out in accordance with the university standards for all freshman EFL composition classes, and all students who successfully completed the class received college credit.

After the course was completed, the data was stored on a server that belongs to the Hokkaido English Language Education Society (HELES), an independent research group. The instructor who both designed and taught the course, and who is currently serving as the President of HELES made the data available to me after declassifying it. All information related to personal identity (name and student number) was eliminated from the archival data used and never appeared in any part of this study. In collecting the raw data, each participant was assigned a number that has no connection to official university records. Those codes were known only to the course instructor, and kept in a secure document box in a locked office.

## **Theoretical Research Approach and Rationale**

The first step in coming up with an approach to make use of the archival data involved extensive, ongoing discussions with the instructor. It was necessary to carefully examine the available data while asking the instructor for information related to the class, such as the numbers and types of lessons taught, the teaching methodology used, the roles assigned to the participants, procedures that were in place to allow them to carry out their assignments, attendance and completion records, etc. Learning how to use the Moodle site, which remained maintained and intact just as it was during the delivery of the course, also required special instruction from the instructor. This was critical, as all the necessary information is contained in the Moodle site itself, making skillful navigation of the site essential.

Based on the interviews with the instructor, thorough examination of the data available on the server, and previous research presented in the literature I decided that a quantitative analysis of four constructs, writing improvement, engagement, motivation, and writing achievement would be the most meaningful way to make use of the archival data set. To do this it was necessary to go back to the raw data on the class server, re-organize it, and then measure and make logs of the developed data that could be used to develop each of the four constructs.

For this study, writing improvement was measured by comparing the sentence complexity, accuracy, and fluency (CAF) of the two short essays that were written by the participants before and after the treatment. The measures of fluency, complexity, and accuracy have been used by many researchers (Wolfe-Quintero, Inagaki, and Kim, 1998; Larsen-Freeman, 2009; Norris and Ortega, 2009; Skehan 2009; Pallotti, 2009). In this study these measures (CAF) were used in statistical tests for difference questions. They were then used in combination with

the peer evaluation scores (engagement) and motivation to act as predictor variables in association questions.

Based on a rubric published on the course website, evaluation scores were given to peers by peers after completing each of the nine learning sessions (see Appendix D). The raw scores of the peer evaluators were used to make a composite engagement score.

To measure motivation, the results of an 18 item motivation survey were used (see Appendix H). After running a principal components analysis, two factors (Subject Suitability, Linguistic Self-confidence) were used as predictors for the association questions.

To measure writing achievement the final, extended essay was analytically scored by trained raters using a rubric based on the well-known Jacobs et al. (1981) rubric (see Appendixes I & J). This allowed for reliable scores on important aspects of writing achievement such as content, organization, vocabulary, and language use. These scores were combined to create the variable for writing achievement which was used to look at relationships among the variables in correlations questions. It was also used as the criterion variable for the association question.

Such processing and manipulation of the available archival data made it possible to quantify, measure and analyze the learning outcomes of the course. This, in turn, provided both a practical example of how real life, archival data can be used to evaluate classroom activities, and valuable insights into EFL composition learning and teaching.

## **Research Rationale**

The L2 writing course instructor who created the course and provided the archival data has a long-standing interest in the efficiency of e-learning and Information and Communication Technology (ITC) in foreign language learning and instruction. This, along with an overriding interest in EFL (English as a Foreign Language) composition lead him to create a computer

mediated EFL writing course using Moodle, a popular e-learning platform. In fact, the data made available for this study came from the third generation of the Moodle platform he had developed over a period of three years. In making the data available, he made it known that although he was confident of the effectiveness of his methods, he would welcome an independent, quantitative evaluation of the data on the most recent version of his course. Before I became involved, no such investigation had been conducted at any stage of the course's development. It was not until the completion of the 2013 fall term that the instructor felt that his learning platform was stable enough to allow for a deep and meaningful investigation of the data.

My initial investigation of the course and the data it generated revealed that they were suitable for carrying out a further, quantitative study of the results in order to provide relevant information on the use of computer mediation and peer review and evaluation to enhance the use of the writing process approach in EFL compositions classes.

The archival data was both of an applied nature, and carried out in the field, that is to say in a university L2 writing classroom. Thus, the setting was highly appropriate and suitable for further investigation of the subject of L2 writing and related pedagogies. This study used the archival data to investigate both the techniques and the learning outcomes as they related to teaching and learning EFL composition. In doing this, the study fits in with previous literature on the writing approach and peer learning, as well as the assessment of L2 writing. One very important aspect of the course under study was the addition of computer mediation to the combined pedagogies of peer work and writing process, something that represents a step in a new direction. Since the use of computer mediation and peer review and evaluation was carried out in a previously untested fashion, the results of this study provide timely and beneficial

information for both teachers and students interested in information communication technology and social learning in the ESL classroom.

### **General Research Questions**

The research questions put forth in this study have the potential to add to a better understanding of writing improvement (objectively measured by CAF), and writing achievement (subjectively measured by trained raters). They called for measurement of differences in writing improvement, investigation of the relationships between writing improvement, engagement, motivation, and writing achievement, and the predication of writing achievement by subjective measures (writing improvement) and self-reported data (engagement and motivation scores). To that end, the general research questions of this study addressed the following difference and association questions:

1. Would a computer mediated English writing course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation lead to improvement in L2 writing complexity, accuracy, and fluency (CAF)?
2. Upon completion of a computer mediated EFL composition course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation, what is the relationship between writing improvement (CAF), engagement, motivation, and writing achievement?

### **Research Design**

To examine this archival data, this study used a within-subjects, repeated measures design to examine change over time. This design was used to investigate the differences in the writing improvement scores, as well as associations among writing improvement, engagement, motivation, and writing achievement of participants (N=62) in a computer mediated L2



composition course designed to follow the writing process approach and make use of peer review and peer evaluation.

This study was specifically concerned with using archival data to objectively report the results of a previously untested type of learning enhancement. The learning enhancement took place as a part of a 12-week EFL composition course carried out at a Japanese university (see Appendix B). The learning enhancement that was carried out involved a unique instructional design consisting of nine periods of computer mediated, peer reviewed and evaluated EFL composition instruction (ninety minutes each/once a week), as well as accompanying online reading and writing assignments to be done each week out of class. This preparation was required and had to be completed prior to each of the periods of instruction. Without this part of the course, the results and the activities of the class would have been very different, and the archival data would have been much less robust.

With the exception of descriptive studies, the purpose of all quantitative studies is, according to Gliner, Morgan, and Leech (2009), to look for relationships between variables. In this study four constructs (writing improvement, engagement, motivation and writing achievement) were used to quantitatively investigate the learning outcomes of the course and all the measurements that were made to look for relationships among the variables came from the archival data. Pretest-posttest writing (impromptu, 15 minute essays) were measured for complexity, accuracy, and fluency to establish levels of writing improvement. During the interventions, weekly peer evaluation scores were used to create measures of engagement. Archival data that had been collected after the completion of the intervention was used to create measures of motivation and writing achievement. In keeping with the tradition of post-positivist

paradigm in educational research, a quantitative design was clearly the most appropriate for this study (Gliner et al., 2009).

### **Participants and Sampling**

All the participants in this study were first year university students. Every year the university assigns students to specific classes. The exact nature of this assignment is not absolutely clear. Neither the students nor the teachers have any choice in the selection, and the entire freshman body must participate. The result, in practical terms, is that all classes have equal size and comparable mixes of students from all the various school departments. As some liberal art students do not declare a major until their second or third year, many of the participants had no specific department affiliation. The students who participated in the course from which the archival data was taken were probably not aware of the unique, experiential nature of the course, or that it was taught differently from other courses. In fact, all the teachers of this required freshman course have a great deal of liberty in deciding on their own content and therefore all of the classes have different formats, focus, and delivery.

Near the end of this study of the archival data, the course instructor was interviewed regarding class assignment. At that time it was learned that the university uses standardized testing scores for student placement. In theory this would result in more homogeneous classes. However, the classroom instructors are not involved, or informed on the specifics of student placement. It is unfortunate that the exact mechanism for the university's assignment of students cannot be explained and evaluated. Insofar as all the freshman students are equally required to meet the university's foreign language requirement and had an equal opportunity to be placed in any given course, there is no reason to suppose that participant selection for this particular course differed from any of the other courses in terms of student-teacher assignment. It can be said,

therefore, that the sample was representative of the larger population of university students and that the sampling design of the study does not limit the degree to which it is possible to generalize the outcomes to other populations.

## **Intervention**

In this study, the intervention consisted of nine periods of instruction given as part of a 12-week freshman writing course at a Japanese university. During the intervention instruction was held for 90 minutes, once a week, for nine weeks. All nine lessons followed a similar series of uniform steps. Prior to each lesson participants were required to complete an online reading assignment out of class. Then they had to write a short narrative online. This could be done anytime at the student's convenience, but had to be posted to the course site by midnight the day before class. Once the participants were assembled in class they spent 10 minutes getting logged on to the class website and practicing English typing skills. The teacher then took 15-20 minutes to address the class. This time was used for class management, to talk about writing, explain how to make better use of the writing tools contained in the site, discuss and explain assignments, etc. It was not used for any form of explicit teaching of writing or focus on forms. For the rest of the class the students were engaged in peer review and evaluation of other participants' work. This was also done online with the student working individually at their own terminal, but connected to all the other members in an asynchronous (delayed, not live) fashion. Finally, after evaluating their peer's writing and reviewing the comments made by their peers, the participants re-wrote their initial draft and posted it online. They spent the last 5 minutes of every class reviewing the week's activities, collecting their thoughts, and writing them down in the site's online class journal (this was, for the most part, done in Japanese). Everything, with the exception of the 15-20 minutes during which the teacher addressed the class, was done online,

and all the transactions were posted to the classroom website. This kind of editing and reviewing, followed by re-writing, posting and reflection are thought to be fundamental steps of the writing process approach.

### **Instruments and Measures**

The following instruments were used to measure the data. Details related to the exact nature of the instruments, their reliability and validity, and procedures for carrying them out are explained at the end of this summary:

- 1. A pretest, post-test of short narrative writings.** The pretest was done before the start of the nine periods of instruction, and the posttest was done after the completion of the nine periods of instruction. Both were 15 minute, impromptu writings. These were used to measure the concept of writing improvement in terms of its complexity, accuracy and fluency.
- 2. Peer evaluator scores.** As a part of each of the nine lessons, participants received a score from their peers indicating how well they had performed the lesson. These scores were used to measure the concept of engagement.
- 3. A motivation survey.** The survey was conducted at the end of the class to ascertain information related to student motivation as it related to attitudes toward the class, linguistic self-confidence, and classroom anxiety. It was used to measure the concept of motivation.
- 4. Extended essay.** This 60 minute, impromptu writing was done after the nine lessons had been completed and was used to measure the concept of writing achievement.

## **Pretest and Posttests of Short Narrative Writings**

**Pretest.** The week before the start of the intervention (nine lessons), the participants completed a pretest. The pretest was a writing assignment which measured the participants' short essay writing abilities in terms of complexity, accuracy, and fluency. The writing was done in class and was based on a topic assigned by the teacher. It was done impromptu, and was timed. The time allowed for completion of the task was 15 minutes. The topic of the pretest was, "What I Would Like to Be in the Future".

**Posttest.** A post-test, using the same format as the pretest and a carefully chosen, similar writing topic, was given the week after the end of the interventions (nine lessons). The topic for the posttest was, "My Dream".

Complexity, accuracy and fluency are said to be good indicators of believe that the of L2 performance and L2 development (Ellis, 2008; Housen & Kuiken, 2012; Skehan 1998;). Therefore, in this study these three variables were used to measure the level of writing improvement shown by the participants L2 writing.

To operationalize the first variable, complexity, t-units were counted and measured using the L2 Syntactic Complexity Analyzer, which can provide 14 indices of syntactic complexity (see Appendix E). The site is maintained by Professor Lu (2010, 2011), Director of Graduate Students in the Department of Applied Linguistics at Pennsylvania State University. The use of t-units to analyze L2 writing is well documented in L2 writing literature (Ishikawa, 1995; Ortega, 2003; Polio, 1997; Silva, 1993)

To operationalize the second variable, accuracy, a check was made for grammar mistakes. The link between grammar mistakes and overall L2 writing ability is well known (Chandler, 2003; Ferris, 2004; Myles, 2002; Polio, 2013; Silva, 1993). A commercially available grammar

checking software, *Grammarly* (Grammarly® Editor, 2014) was used to check the pre and post-test writings. *Grammarly* is a popular application and has had many favorable reviews (Baker, 2013; Japos, 2013; Taylor, 2013). It is consistent in its scoring and represents a valid method for checking L2 writing for grammar mistakes in a way that the can be measured and used for statistical analysis. In this study *Grammarly* was used to measure mistakes in punctuation, spelling, and grammar. These are then run through an algorithm that measures the total word count, total number of errors, and severity of the errors to generate what amounts to a Global Error Score. The scores range from 0-100, with 100 being a perfect, error free Global Error Score (see Appendix F).

To operationalize the third variable, fluency, a word count was conducted to see if participants would produce more text after the intervention when writing under similar conditions. The link between writing fluency and overall L2 writing ability is well known (Chenoweth & Hayes, 2001; Feller & Apple, 2006; Johnson, Mercado, & Acevedo, 2012; Palvian, Kalaja, & Mantyla, 2012; Silva, 1993). All the pre and post-test writings were examined using Readability-Score.com (Added Bytes Ltd, 2014), a free online application that accurately rates essays on a number of points, including readability scales and exact word count (see Appendix E). The basic elements of text readability are syllables, words and sentences (Sadler, 2012). They can be measured easily by text analyzers. Noting that although the formulas and results of text analyses for readability have both strengths and weakness when used in an ESL setting, Sadler (2012), refers directly to several reliable text analyzers, including Readability-Score.com.

To enhance reliability the pretest-posttests were carefully designed to be similar. The pretest topic was “What I Would Like to Be in the Future”, and the posttest topic was “My

Dream.” The time allowed to complete the writings was the same (15 minutes), and the setting for both writing was impromptu. The use of computer scoring for word count and error count helped provide data that was accurate and consistent.

The data was checked to see if it met the assumptions for parametric testing. Fluency and accuracy pretest, posttest data met all the assumptions, however, the pretest data for complexity was skewed (4.91), making it necessary to test the complexity data set with a nonparametric, Wilcoxon signed ranks test.

### **Peer Evaluation Scores**

**Peer evaluation process.** Evaluating peers’ work, and receiving an evaluation from peers was an important part of the intervention. In this course, peer work also involved grading one’s peers on how well they had completed the out of class assignment and how effectively they engaged others in peer review. For the past 20 years student engagement has been considered an essential aspect of meaningful learning (Smith, Sheppard, Johnson, & Johnson, 2005). Peer evaluation can support self-regulated learning, which is defined as a component of engagement (Fredricks, Blumefield, & Paris, 2004). And engagement is considered an important part of the answer to classroom problems related to “low achievement, boredom and alienation, and high dropout rates” (Regional Education Laboratory, 2011, p. i).

Participants were assigned to small, online groups of three to four. The evaluation process was aimed at encouraging the participants as editors. It also had the aim of helping participants gain deeper insight into the topic by being readers, or consumers of writing. Furthermore, it gave each of the participants an audience and the opportunity to see how effective their written communication was with that audience. The evaluation scores given by the participants were assumed to accurately reflect perceived levels of engagement, that is to say,

how well a participant prepared outside of class for each assignment and how earnestly they carried out the in class tasks when completing each of the nine interventions. This measure was especially important as it was taken while the intervention was on going.

**Measure.** The participants used a rubric contained on the course website (see Appendix G) to evaluate a peer's work after completing a single intervention (all of the in and out of class assignments for any given session). To get an evaluation score that would reflect changes in engagement over time the scores of the first three lessons and the last three lessons were averaged separately to calculate evaluation pre-scores and post-score, corresponding to entry level and exit level engagement. It was assumed that the participants were sincere and earnest in the responses they made, and that these were an accurate reflection of the participants' perceptions at the time the data was collected.

### **Student Survey – Motivation**

**Motivation survey process.** Participants' motivation was measured with a self-reporting survey given at the end of the course (see Appendix K). The survey had 18 items and was closely modeled after a survey used successfully by Guilloteux and Dornyei in their 2008 study on the effects of classroom motivational strategies on student motivation. The items in that survey were formed into three scale variables; attitudes towards the course, linguistic self-confidence, and anxiety. In the original survey used in the Guilloteux and Dornyei study, 9 items ask about attitudes towards the course, 7 items ask about linguistic self-confidence, and 3 items ask about classroom anxiety, for a total of 19 items. In this study of the archival data all but the last anxiety question were used, making a total of 18 items.

**Measures.** All items were scored on a 5 point Likert scale (1=strongly disagree, 5=Strongly agree), with 5 of the items being reverse scored. Dornyei (2015) showed the survey



to have good construct validity. According to the authors of the original survey (Guilloteux & Dornyei, 2008), “The items of the student questionnaire formed three-multi-scale variables, which were submitted to a factor analysis. A one factor solution emerged, which was subsequently used as a single index for the purpose of further analysis” (p. 67). The reliability of the original survey, which was divided into three parts, was reported to be, “attitudes toward the course, Cronbach alpha = 0.85, linguistic self-confidence, Cronbach alpha = .80, and anxiety, Cronbach alpha = 0.63) (p.67). Based on these results Guilloteux and Dornyei opted to use the motivation survey as a single, one factor solution variable in their study.

For this study of the archival data, two reliability checks (Cronbach’s Alpha and a principal components analysis) were performed. The results were similar to but not exactly the same as those reported by Guilloteux and Dornyei (2008). Although a Cronbach’s alpha for the entire motivation survey (Q1-18) of the archival data gave an alpha of .81, the item total correlations for survey items 5, 7, 9, 11, 17 and 18 were all less than .40, indicating less than minimally adequate reliability. After eliminating these items, Cronbach’s alpha was run for the remaining items and was .90, with all the remaining items indicating adequate reliability. From a principal component analysis two factors indicating good internal consistency emerged; Subject Suitability Motivation, and Linguistic Self-confidence Motivation. Subject suitability motivation was defined as motivation based on the participants’ perceptions that L2 study was a suitable, or fitting, endeavor. Linguistic self-confidence motivation was defined as the degree to which a participant felt they had a good set of L2 linguistic skills and strategies. It was decided to use these factors as predictors of writing achievement.

Principal components factor analysis with varimax rotation was conducted to assess the underlying structure of the remaining 11 items of the Motivation survey (see Table 4.4). The

assumption of independent sampling was met. The assumption of normality, linear relationships between pairs of variables, and the variables' being correlated at a moderate level were checked.

Table 3.1 displays the items and factor loading for the rotated factors.

Table 3.1

*Factor Loading for the Rotated Factors*

Item	Factor Loading		Communality
	1	2	
Q3 ATC -English is one of the subjects I like.	.84		.77
Q2 ATC-I like to study English.	.84		.76
Q8 ATC -For me, English is a heavy burden. (REVERSE)	.80		.67
Q6 ATC -English study is neither too hard nor too easy, so I can enjoy it.	.73		.66
Q1 ATC -I want to study English more.	.68		.60
Q4 ATC -Even if English study goes on for a long time, I never feel fed up.	.61		.67
Q16 LSC-I am worried about my ability in English. (REVERSE)	.53		.30
Q12 LSC-I feel I have experienced success in my English studies.		.83	.69
Q10 LSC-I feel that I am making progress in my English.		.77	.60
Q14 LSC-I understand what to do and how to do when I study English.		.60	.46
Q15 LSC-I am doing well at learning English.		.57	.55
Q13 LSC-I am sure that I will be able to speak English someday.		.48	.40

Two factors emerged after rotation. The first factor accounted for 33.23% of the variance, the second factor accounted for 18.75% of the variance, for a cumulative total of 51.98%. The first factor indicated Subject Suitability, motivation based on how well a participant felt suited to

the study of L2. The second factor indicated Linguist Self-confidence, motivation based on the level of participant's L2 confidence.

### **Extended Essays**

**Extended essay process.** Extended essays written at the end of the 12-week course were used to determine the participants' achievement in EFL composition upon completion of the intervention (nine lessons). One week before writing the final essay, a practice session was carried out in class to familiarize the participants with the nature of the extended essay task. After some basic instruction from the teacher on how to use and adjust their writing skills to create longer, more detailed essays the participants were asked to write a practice extended essay in an impromptu, timed setting. The target length for the writing was one page, or an average of about 320 words, and the students had one hour to complete the task. The next week the same agenda, minus instruction from the teacher, was followed. In both instances, the teacher spontaneously announced the essay topic immediately prior to the start of the writing. The topic for the practice session was, "Whaling", and the topic for the second, final writing, was "The Introduction of Foreign Language in Elementary School." See Appendix H for the extended essay writing instructions.

This extended essay differed from the short paragraph writing in several important ways. Unlike the shorter pretest, posttest writings, which could be evaluated objectively, the extended essay was evaluated subjectively. Rather than measuring development, it was used as a measure of proficiency. In comparing language development to language proficiency Wolfe-Quintero et al. (1998) noted that "proficiency is a broader concept that is related to separating language users into cross-sectional groups based on a normal distribution of their language ability" (p. 2). As the time was much longer for the extended essay a longer text and more through treatment of the

topic were expected. The extended essay called for the participants to make full use of their writing achievement skills, such as language use, vocabulary, organization and presentation of the content. The use of these skills allowed the extended essay to be assessed for achievement in ways that the shorter pre and posttest writing could not. There was no peer review, evaluation, or re-writing of the extended essay, as it was done on the final day of class. On the final day of class the course ended with the completion of the extended essay and the motivation survey.

**Measures.** The extended essays were scored analytically by two trained raters using a standardized rubric (see Appendix I). This rubric is very closely based on *The ESL Composition Profile*, Jacobs, et al. (1981), see Appendix J. Brooks (2013) has described this as, “one of the most recognizable rubrics” (p. 231). Bacha (2001) has observed that *The ESL Composition Profile* has a high degree of internal and external validity with scores given on the rubric being “highly correlated with the student’s scores on the TOFEL and Michigan Test Battery” (p. 374).

Analytic grading by trained raters using established rubrics has traditionally been considered a precise and valid way to assess writing levels as long as issues related to inter-rater reliability are addressed (Hamp-Lyons, 1995; Nakayama, 2004; Polio, 1997; Silva, 1993). Both of the raters were native EFL teachers, each with over 10 years of experience working with Japanese university students and experience in teaching L2 writing. Five training sessions were carried out. Examples used for the training sessions were taken from the practice extended essays that had been written one week before the final extended essay. First the raters used the rubric to grade an identical set of three papers each, then they compared and discussed the scores they had given. After five training sessions, the decision to move forward with the actual rating of the final essays was based on the mutual consensus of the raters that they were capable of marking the papers consistently based on the rubric.

The criterion variable, writing achievement, was the average of the scores given to each essay by the two trained raters. A Cronbach's alpha was run to check the interrater reliability. The coefficient of .88 indicated very good interrater reliability (Multon, 2010).

### **Internal Validity**

The internal validity of a study is, "The extent to which we can infer that the independent variable caused the dependent variable" (Gliner et al. 2009, p. 102). It is considered to have two important components, which are "The Equivalence of Groups", and "Control of the Experiences and Environment" (Gliner et al. 2009, p. 103). The internal validity of this study was high insofar as the assignment of participants was made in accordance with the standards and policies of the school where the course was taught. However, the fact that it was a one-group design that made within-subjects comparisons prohibited the comparing of different groups, negatively affecting the overall strength of the internal validity to some degree. The participants of this study shared several important characteristics in common, and this gave the sample a highly cohesive nature. The most important characteristic shared by the participants is that they had all managed to enter one of the most prestigious universities in Japan, an act that requires passing a single, standardized, national test. A great deal of both discipline and training are required over many years of primary and secondary schooling to become one of the few students capable of attaining such an accomplishment. All the participants were freshman, and as the class was a required, they all had equal stakes in at least doing well enough to get a passing mark.

As for the control of extraneous variables, it must first be said that this was, after all, a real life situation, carried out in the field, over a period of a little over 4 months. Obviously, many things happened in the lives of the participants that the researcher had no control over. However, it may be surmised that there were few if any threats to the stability of the course,

classroom environment, and participant performance over the duration of the class. Participation rates were high and attrition was very low. Only 4 of the original 78 students failed to finish the course, and those students were able to get credit for the course based on their out of class TOFEL scores. Given such parameters, it is thought that the internal validity of the study was fairly high in its overall nature.

### **External Validity**

The external validity of a study, according to Gliner, Morgan, and Leech (2009) “deals with generalizability, that is, the extent to which samples, setting, treatment variables and measurement variables can be generalized beyond the study” (p. 128). The quasi-experimental design, the effects of the university controlled class placement on sampling, and the lack of a control group are all factors that lower the external validity of the study. However, it can be said that the study had fairly high ecological external validity as it is described by Gliner et al. The setting was totally authentic as this was a course sanctioned by the university and offered for credit, just like any other course. According to the class evaluations submitted by the participants at the end of the course, both the instructor and the course itself were well received by the participants. Although the combination of computer mediation, peer review and evaluation, and the writing process approach used in the course was unique, each of these approaches appears in research related to L2 composition. The timing and length of the treatment were totally suitable and fully representative of what is expected for a college course in Japan. It is clear that the archival data used for this study deals with an authentic learning situation.

## Variables

### Writing Improvement

1. **Pretest Complexity Score**, the number of clauses per t-unit, interval, for the short narrative pretest composition. Calculated using *L2 Syntactic Complexity Analyzer*, Haiyang (2015).
2. **Posttest Complexity Score**, the number of clauses per t-unit, interval, for the short narrative posttest composition. Calculated using *L2 Syntactic Complexity Analyzer*, Haiyang (2015).
3. **Pretest Accuracy**, grammar errors, interval, global error scores of the short narrative pretest composition. Calculated using *Grammarly* (2014).
4. **Posttest Accuracy**, grammar errors, interval, global error score of the short narrative posttest composition. Calculated using *Grammarly* (2014).
5. **Pretest Fluency**, word count, interval, the total number of words used for the short narrative pretest composition using *Readability-Score* (2014).
6. **Posttest Fluency**, word count, interval, the total number of words used for the short narrative posttest composition using *Readability-Score* (2014)

### Engagement

7. **Engagement Pre-Score**, peer evaluation scores, interval, 0 to 15. Evaluation pre-scores were measured to reflect changes in engagement over time. The scores of the first three lessons were averaged to estimate entry-level pre-engagement scores. When participants missed one of these classes the available two classes were averaged. No student missed more than two of the three target classes. Peer evaluation scores (engagement) were collected weekly.

**8. Engagement Post-Score**, peer evaluation scores, interval, 0 to 15. Evaluation post-scores were measured to reflect changes in engagement over time. The scores of the last three lessons were averaged to estimate entry-level pre-engagement scores. When participants missed one of these classes the available two classes were averaged. No student missed more than two of the three target classes. Peer evaluation scores (engagement) were collected weekly.

### **Motivation**

**9. Subject Suitability**, interval. The first of two factors extracted from a principal component analyses indicating motivation based on how well a participant felt suited to the study of L2.

**10. Linguistic Self-confidence**, interval. The second of two factors extracted from a principal component analysis. The second factor indicated motivation based on a participant's confidence in their linguistic coping strategies.

### **Writing Achievement**

**11. Writing Achievement Score**, trained rater assessment, interval. Trained raters used a rubric to score the final, extended essays for content, organization, vocabulary, and language use. Each category received a separate score, then all the scores were combined for a total score. Total scores range from a theoretical low of 32 to a full mark of 95.

## **Research Questions**

### **Writing Improvement**

To answer the general research question #1: *“Would a computer mediated English writing course designed to follow the writing process approach and used in conjunction with*



*peer review and peer evaluation lead to improvement in L2 writing complexity, accuracy, and fluency (CAF)?*” These specific questions would need to be addressed:

1. When following the writing process approach while using computer mediation for a course in EFL (English as a Foreign Language) composition which emphasizes peer review and peer evaluation is there a statistically significant difference between complexity pretest and posttest?
2. When following the writing process approach while using computer mediation for a course in EFL (English as a Foreign Language) composition which emphasizes peer review and peer evaluation is there a statistically significant difference between accuracy pretest and posttest?
3. When following the writing process approach while using computer mediation for a course in EFL (English as a Foreign Language) composition which emphasizes peer review and peer evaluation is there a statistically significant difference between fluency pretest and posttest?

### **The Association between Writing Improvement, Engagement, Motivation, and Writing Achievement**

To answer the general research question #2: *“Upon completion of a computer mediated EFL composition course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation, what is the relationship between writing improvement (CAF), engagement, motivation, and writing achievement?”* the following specific questions were addressed:

4. Is there a statistically significant association between complexity posttest scores and writing achievement?
5. Is there a statistically significant association between accuracy posttest scores and writing achievement?
6. Is there a statistically significant association between fluency posttest scores and writing achievement?
7. Is there a statistically significant association between engagement posttest scores and writing achievement?
8. Is there a statistically significant association between motivation factors and writing achievement?
9. How well does the combination of writing complexity posttest scores, accuracy posttest scores, fluency posttest scores, engagement posttest scores, and motivation factors (subject suitability, linguistic self-confidence) predict writing achievement?

### **Data Analysis**

The specific types of data analysis used in this study are explained with regard to each of the specific research questions discussed. All statistical analysis was carried out using SPSS after checking to see if the data met the assumptions of the test being conducted.

- Writing Improvement (Specific RQ #1): To determine if there was a statistically significant difference between complexity pretest and posttest scores a comparison was made using a Wilcoxon signed ranks test.
- Writing Improvement (Specific RQ #2): To determine if there was a statistically significant difference between accuracy pretest and posttest scores a comparison was made using paired sample t-tests.

- Writing Improvement (Specific RQ #3): To determine if there was a statistically significant difference between fluency for the first three periods of instruction and the last three periods of instruction a comparison was made using paired sample t-tests.
- Specific RQ #4~#8: Pearson's correlation was used to determine the relationships between all the variables: complexity, accuracy, fluency, engagement, motivation factors, and writing achievement.
- Specific RQ #9: Multiple regression was used to determine how well complexity, accuracy, fluency, engagement and motivation factors predicted the criterion variable, writing achievement.

## CHAPTER FOUR: RESULTS

### Data Analysis and Findings

In this chapter the results of the data analysis are presented. The archival data containing all written assignments, records of peer interaction, student reflection, and measurements of writing achievement and motivation were made available through downloads of records maintained by the original L2 writing course instructor. Before downloading the data used in this study the course instructor declassified all the records by removing all identifying student information. The data was then used to answer the research questions set forth in the study . The two general research questions in Chapter 1 drove the collection of the data and the subsequent data analysis. Those were aimed at determining:

- 1) *Would a computer mediated English writing course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation lead to improvement in L2 writing complexity, accuracy, and fluency (CAF)?*
- 2) *Upon completion of a computer mediated EFL composition course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation, what is the relationship between writing improvement (CAF), engagement, motivation, and writing achievement?*

In this chapter a thorough analysis of the archival data is reported. Participant characteristics, sampling and response rates are discussed. Then a descriptive analysis of the data is presented. Finally, a quantitative analysis is used to evaluate the research questions.

### **Participant Characteristics.**

All the participants were first year college students enrolled in a Japanese university during the Fall 2013 academic year. The university made the assignment of students to any given L2 writing course. The L2 writing course was required for all freshmen, and the students could not choose whether or not to participate in any given section of the L2 writing course. Attending the section to which they were assigned by the university was the only option. The data for this study was taken from two different sections of an L2 writing course that were taught by the same instructor and followed the exact same syllabus. Both sections received equal treatment. There was a combined total of 78 students in the two sections of the L2 writing class. Nineteen of the participants were female and 59 of the participants were male. The department affiliations of the participants are shown in table 3.

Table 4.1

#### *Participant's Department Affiliation*

Department	Number of student	Department	Number of Students
Not Decided	32	Agriculture	1
Law	4	Veterinary Science	2
Economics	2	Medical school	8
Engineering	13	Natural Science	5
Information Science	2	Oceanography	9
			<i>Total</i> 78

### **Sampling and Response Rate**

The original data collection process was carried out over a sixteen-week period, which corresponded to the entire duration of the writing course. Four of the original participants were not required to complete the course as they could show proof of having completed one of the

accepted standardized exams (TOFEL and TOEIC) outside of class at the accepted level of proficiency. This allowed them to enroll in another class of their choice while receiving credit for the freshman L2 writing course based on their test score. At the start of the data collection process, the total number of participants was  $N = 74$ . Only the data of participants who completed all of the measures ( $N=62$ ) was used for the analysis of the archival data to answer the nine specific research questions of this study. Although all 74 of the participants completed the course, only 62 of the participants completed all of the measures required for the analysis of this study. This is because 12 of the participants failed to complete both the writing improvement pretest and the writing improvement posttest. These tests were given only one time each, 10 weeks apart. The response rate for engagement scores, motivation survey and the final, extended essay, was  $N=74$ . The first three and the last three writing sessions were averaged to come up with pre and post engagement scores. When participants missed one of these classes the available two classes were averaged. No student missed more than two of the three target classes. Peer evaluation (used for engagement) was collected weekly. No students missed the final extended essay writing assignment as it was treated as the final exam for the writing course. The motivation survey was administered immediately after the extended essay had been completed.

### **Descriptive Statistics**

A summary of the descriptive analysis is shown in Table 4.2. The  $N=62$  includes only variables with no missing data. Complexity, accuracy, and fluency all showed an increase from the pretest to the posttest. Complexity, however showed high skewness; according to Leech et al. (2013) “if the skewness is more than +1.0, or less than -1.0 the distribution is markedly skewed” (p. 22). Therefore, a non-parametric test was used when that variable (complexity) was analyzed.

Both the mean and the standard deviation of engagement increased. Since engagement was based on the scores given by peer evaluators for work done on the assignments, this means that towards the end of the course peer evaluators were giving both higher scores and a wider range of scores. The mean score for both of the motivation factors was greater than 3. On the scale used for this survey 3 equaled a neutral response. Scores greater than 3 equaled a positive response. That is to say, that scores of 4 or 5 on motivation survey items indicated that the participant felt they possessed the motivation tendency being asked about. The mean for the factor of subject suitability (3.02) was lower than that of linguistic self-confidence (3.31). However, the standard deviation of subject suitability was higher, indicating a wider variety of scores on items related to this factor. Unfortunately Guilloteaux and Dornyei (2008) did not report the raw scores, means, or standard deviations of the motivation survey items they used, so it is not possible to make a comparison. However, the normality of the distribution, means, and standard deviations seems reasonable for these types of motivation factors.

Table 4.2

*Descriptive Statistics for Complexity, Accuracy, and Fluency*

Variable	N	M	SD	Skewness
Complexity				
Pretest	62	2.20	1.95	4.19
Posttest	62	2.90	1.36	.26
Accuracy				
Pretest	62	52.63	24.43	-.60
Posttest	62	56.53	22.48	-.68
Fluency				
Pretest	62	74.02	20.83	.49
Posttest	62	93.34	25.00	-.09

Table 4.2

*Descriptive Statistics for Complexity, Accuracy, and Fluency*

Variable	N	M	SD	Skewness
Engagement				
Pre-score	62	10.24	1.19	.21
Post-score	62	10.57	1.33	-.08
Motivation Factors				
Subject Suitability	62	3.02	.85	-.24
Linguistic Self-confidence	62	3.31	.71	.04
Writing Achievement	62	58.96	7.04	-.75

**General Question #1: Writing Improvement**

*Would a computer mediated English writing course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation lead to improvement in L2 writing complexity, accuracy, and fluency (CAF)?*

**Specific Research Question 1: Complexity**

*When following the writing process approach while using computer mediation for a course in EFL (English as a Foreign Language) composition which emphasizes peer review and peer evaluation is there a statistically significant difference between complexity pretest and posttest?*

The data was checked to see if it met the assumptions for parametric testing. Fluency and accuracy pretest, posttest data met all the assumptions, however, the pretest data for complexity



was skewed (4.19), making it necessary to test the complexity data set with a nonparametric, Wilcoxon signed ranks test.

A Wilcoxon matched pairs signed rank test was conducted to compare the number of clauses per t-unit (sentence complexity) for the short essay pre and posttests  $N=62$ . Of the 62 pretest, posttest measures of sentence complexity (clauses per t-unit), 18 posttest measures of complexity were less than pretest measures of complexity, 43 posttest measures of complexity were greater than pretest measures of complexity, and there was 1 tie. This difference indicated that gain in posttest complexity is statistically significant,  $z = -3.67$ ,  $p < .001$ ,  $r = .46$ , a medium or typical effect size according to Leech, Barrett, and Morgan (2011).

### **Specific Research Question 2: Accuracy**

*When following the writing process approach while using computer mediation for a course in EFL (English as a Foreign Language) composition which emphasizes peer review and peer evaluation is there a statistically significant difference between accuracy pretest and posttest?*

A paired samples t-test indicated that the short essay posttest ( $M = 56.53$ ,  $SD = 22.4$ ) had on average higher global error scores (higher scores = better performance on errors/fewer errors) than pretest short essays ( $M = 52.63$ ,  $SD = 24.43$ ). However, the mean increase in accuracy of 3.90 was not statistically significant ( $p = .211$ ). Using Leech et al. (2011) guidelines the effect size,  $d = .17$ , is smaller than normal.

### **Specific Research Question 3: Fluency**

*When following the writing process approach while using computer mediation for a course in EFL (English as a Foreign Language) composition which emphasizes peer review and*

*peer evaluation is there a statistically significant difference between fluency pretest and posttest?*

A paired samples t-test indicated that the short essay posttest essays ( $M = 93.34$ ,  $SD = 25.00$ ) had on average significantly higher fluency (total word count) than pretest short essay ( $M = 74.01$ ,  $SD = 20.83$ ),  $t(61) = 6.63$ ,  $p < .001$ . Using Leech et al. (2011) guidelines the effect size,  $d(.84)$ , is larger than typical.

## **General Question #2: The Association between Writing Improvement, Engagement, Motivation and Writing Achievement**

*Upon completion of a computer mediated EFL composition course designed to follow the writing process approach and used in conjunction with peer review and peer evaluation, what is the relationship between writing improvement (CAF), engagement, motivation, and writing achievement?*

### **Specific Research Questions 4-9: Correlations to Writing Achievement**

- 4. Is there a statistically significant association between complexity posttest scores and writing achievement?*
- 5. Is there a statistically significant association between accuracy posttest scores and writing achievement?*
- 6. Is there a statistically significant association between fluency posttest scores and writing achievement?*
- 7. Is there a statistically significant association between engagement posttest scores and writing achievement?*
- 8. Is there a statistically significant association between the motivation factor, subject suitability, and writing achievement?*

9. *Is there a statistically significant association between the motivation factor, linguistic self-confidence, and writing achievement?*

Because each of the seven variables was approximately normally distributed and the assumption of linearity was not markedly violated, Pearson correlations were computed to examine the intercorrelations of the variables (posttest scores are used). The posttest scores represented the strongest and most timely measure of the participant's performance just prior to writing the extended essay that was used to measure the criterion variable, writing achievement. Table 4.3 shows a positive statistically significant correlation existed between writing achievement and accuracy,  $r(61) = .33, p < .009$ . This would be considered a medium effect size according to Leech et al., (2013), and means that participants who had relatively high accuracy posttest scores were moderately likely to have high achievement scores. There was also a negative correlation between writing achievement and the motivation factor, linguistic self-confidence,  $r(61) = -.30, p < .020$ . This would be considered a close to medium effect size according to Leech et al. (2011), and means that participants with relatively lower linguistic self-confidence motivation were moderately likely to have high writing achievement scores.

There were four correlations not related to writing achievement. The strongest correlation was between accuracy and engagement,  $r(61) = .39, p < .002$ . This would be considered a medium effect size according to Leech et al. (2011), and means that participants with relatively higher accuracy posttest scores were moderately likely to have high engagement scores. Statistically significant correlations were also observed between complexity and fluency,  $r(61) = .29, p < .020$ , and fluency and motivation factor 1, subject suitability,  $r(61) = .32, p < .012$ . Both of these would be considered a medium effect size according to Leech et al. (2011). This means that participants with relatively higher complexity scores were moderately likely to

have higher fluency scores, and that participants with relatively higher fluency scores were moderately likely to have higher subject suitability motivation scores.

Finally, a strong positive correlation was observed between subject suitability motivation and linguistic self-confidence motivation,  $r = .60$ ,  $p < .001$ . This means that participants with relatively higher subject suitability motivation were moderately to highly likely to have higher linguistic optimism motivation.

Table 4.3

*Means, Standard Deviations, and Intercorrelations for Writing Achievement and Predictor Variables (N=62)*

Variable	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
1. Writing Achievement	--	.19	.33**	.20	-.01	-.14	-.30*	58.96	7.04
2. Complexity		--	-.11	.30*	.02	.03	-.033	2.99	1.37
3. Accuracy			--	.21	.39**	-.07	-.22	56.53	22.49
4. Fluency				--	.12	.32*	.12	93.34	25.00
5. Engagement					--	-.08	.06	10.57	1.33
6. Subject Suitability						--	.60*	3.02	.85
7. Linguistic Self-confidence							--	3.31	.71

\* $p < .05$  \*\* $p < .01$

### **Specific Research Question 9: Multiple Regression**

*How well does the combination of writing complexity posttest scores, accuracy posttest scores, fluency posttest scores, engagement posttest scores, and motivation factors predict writing achievement?*

Although logistic regression and discriminate analysis are useful for predicting an outcome from a set of predictor variables, they are more appropriate when the dependent

variable is categorical, and would not be suitable for this study in which the criterion variable, writing achievement, was a continuous variable. Instead, multiple regression was used to investigate how well complexity, accuracy, fluency, engagement, subject suitability motivation, and linguistic self-confidence motivation predicted writing achievement. A simultaneous multiple regression was not considered the best test to run because of the large number of factors. Moreover, the correlations among the variables suggested that accuracy posttest was the strongest predictor of writing achievement. This made it reasonable to run either a stepwise or a hierarchical multiple regression. In the end it was decided to run a hierarchical regression as it has been reported that hierarchical multiple regression can appropriately correct for capitalization on chance, whereas stepwise multiple regression cannot (Leech et al., 2011, p. 106).

The assumptions of linearity, normality of distributed errors, and uncorrelated errors were checked and met. Means and standard deviations are presented in Table 4.3. When accuracy was entered alone it significantly predicted writing achievement,  $F(1,60) = 7.26$ ,  $p = .009$ , adjusted  $R^2 = .09$ . However, as is indicated by the  $R^2$ , only 9% of the variance in writing achievement could be predicted by knowing accuracy. When the other variables were added, they improved the prediction,  $R^2$  change = .13,  $F(5,55) = 1.87$ ,  $p = .02$ . Accuracy continued to be a significant predictor,  $t(61) = 2.41$ ,  $p = .02$ . The entire group of variables significantly predicted writing achievement  $F(6,55) = 2.85$ ,  $p = .03$ , adjusted  $R^2 = .14$  or 14%; 3% improvement. This is a medium, or typical effect size according to Cohen, (1988). The beta weights and significant values, presented in Table 4.4, indicates which variables contribute most to predicting writing achievement when complexity, fluency, accuracy, engagement, subject suitability motivation, linguistic self-confidence motivation, and linguistic optimism

motivation are entered together as predictors. With this combination of predictors, accuracy has the highest beta (.34) and is the only variable that contributes significantly to predicating writing achievement.

Table 4.4

*Hierarchical Multiple Regression Analysis Summary for Complexity, Accuracy, Fluency, Engagement, and Motivation Predicting Writing Achievement*

Variable	<i>B</i>	<i>SEB</i>	$\beta$	$R^2$	$R^2$ Change
Step 1				.09 <sup>2</sup>	.11 <sup>2</sup>
Accuracy	.10	.04	.33 <sup>1</sup>		
Constant	53.15	2.32	--		
Step 2				.15	.13
Accuracy	.11	.04	.34 <sup>1</sup>		
Complexity	.95	.65	.18		
Fluency	.04	.04	.14		
Engagement	-.82	.70	-.16		
Motivation Factors					
Subject Suitability	-.61	1.30	-.07		
Linguistic Self-Confidence	-1.78	.1.56	-.18		
Constant	63.07	7.92	--		

<sup>1</sup> $p < .05$

<sup>2</sup>Adjusted  $R^2$  and  $R^2$  Change is reported in the table

## **CHAPTER FIVE: DISCUSSION**

This study of the archival data from a second language (L2) composition course used a quantitative research methodology to analyze student writing in ways that would accurately measure and reflect the learning outcomes of the course. This was done by using a pretest, posttest design to measure writing improvement: complexity, accuracy, and fluency (CAF). The findings of this study related to gains in writing improvement (CAF) are supported by the studies of Feller and Apple, 2006, and Herder and King, 2012. This pedagogy, as outlined before, was based on a previously untested combination of computer mediation and peer review to facilitate the writing process approach.

The writing improvement measures (CAF) were then used in combination with engagement and motivation to predict writing achievement and look for relationships among the variables. In the model used for this study accuracy was a moderate predictor of writing achievement. The addition of complexity, fluency, engagement and motivation showed minimal improvement.

### **Writing Improvement**

This study was robust in that it used archival data from and actual classroom to analyze all three of the fundamental L2 writing development skills related to writing improvement (complexity, fluency and accuracy). Of the 39 studies of development in L2 writing that were analyzed by Wolfe-Quintero et al. (1998), only three looked at all three factors in a single study (Homburg, 1984; Flahive & Snow, 1980; Vann, 1979). The analysis of the archival data showed that in this L2 course there were increases in all the writing developmental skills used to measure writing improvement. However, only complexity and fluency showed a statistically significant

increase, and only fluency showed an extremely large effect size, while the effect size for complexity was typical and that of accuracy was small.

Clauses per t-units increased from a pretest level of 2.20 to a posttest level of 2.90. As for the levels themselves, they fall within the expected range for adult writers. Lee (2004) analyzed the differences between the writing of native speakers and non- native speakers of English and found that the number of clauses per t-unit for native speakers was 2.83, while for non-native speakers it was 2.37. The figures, however, are somewhat higher than those reported by Flahive and Snow (1980) which ranged from 1.07 for low level students to 1.74 for high level students. Based on those results it can be said that the posttest measure of clauses per t-unit of the students in this study of 2.90 demonstrates an increase in this aspect of writing development that approximates the writing of native speakers.

Increases in accuracy seem to require a different type of intervention than the one used in this study. Explicit instruction, corrective feedback, and focus on forms have been shown to effect accuracy. In a longitudinal case study of untutored development, Ploot and Kim (2013) found that “an untutored language learner may develop advanced lexical and syntactic skill, but achieving grammatical accuracy without instruction may be difficult (p. 184). The parallels to Schmidt’s (1983) study of ‘Wes’ seem obvious and compelling. Moreover, Japanese students are often seen being passive (Norris, 2004, Yomiuri, 2013). This could inhibit accuracy as Rahimi (2015) found that “there is a strong relationship between field independence and the student’s successful short-term and long term retention of corrections in subsequent writings” (p. 19). However, such methods were deliberately excluded from the L2 course used for this study.



The increase in fluency between the pretest and the posttest was the most striking of all the findings of this study. Uematsu (2013) found that improving fluency in English was especially important for students with intermediate levels of L2 writing proficiency. Increasing fluency through the use of computer mediation and peer review was one of the primary targets of the course (H. Ishizuka, personal communication, January 27, 2014). What was especially impressive about the gain in fluency pretest-posttest scores was the large effect size,  $d = .84$ . The L2 writing course was made intensive through the use of computer mediation and peer work, both of which allowed for higher levels involvement in the various stages of the writing process approach. This sort of intensive writing has been showed to increase fluency (Feller & Apple, 2006; Herder & King, 2012).

The results of this study showed that the differences in pretest and posttest scores for complexity, accuracy and fluency are interconnected. In this study fluency and complexity seemed to be linked, while the results for accuracy were not linked to the either fluency or complexity. Trade-offs between accuracy and fluency, and accuracy and complexity have been noted in the literature (Foster & Skehan, 1996; Kuhl, Rasuli, & Delami, 2014; Skehan 2009; van Gelderen, Ostdam, & van Schooten, 2011). It may be that when students engage in writing there is competition among these development skills (CAF) and that is not possible to concentrate on all of them equally (Foster & Skehan 1996, 1999; Robinson, 1995; Robinson, 2001, 2003, 2007; Skehan 1998; Skehan & Foster 1997, 1999).

Improvements in accuracy do not seem to be strongly tied to intense writing practice, but rather to instruction and noticing (Bitchner, 2005; Russell, 2014; Schmidt, 1990; Schmidt & Frota, 1986; Swain, 2007 ). The small effect size of the improvement in accuracy may be tied to the fact that the pedagogy used in the L2 writing course did not use the type of instruction,

training, or feedback that have been shown to be effective in helping students improve writing accuracy.

Task and experience have been shown to affect the trade-off of complexity, accuracy and fluency. Rahimpour, Mehrang, and Hossein (2011) found that structured tasks produced more fluent and complex writing, but that accuracy remained unaffected. Another often observed relation between task and measures of CAF is that more demanding tasks often lead to increases in fluency, but not accuracy or complexity (Hosseini, 2010). Mora and Vallis-Ferrer (2012) found that students in a study abroad condition made robust gains in fluency, moderate gains accuracy and lack of gains in complexity. In a longitudinal study of two groups of Japanese students learning English; those who never studied abroad, and those who studied abroad for 2, 4, and 8 months, Sasaki (2011) found longer stays abroad resulted increasingly higher levels of fluency and motivation.

### **The Association between Writing Improvement, Engagement, Motivation and Writing Achievement**

The second general research question investigated the relationships among the predictor variables of complexity, accuracy, fluency, engagement, subject suitability motivation and linguistic self-confidence motivation, and the criterion variable of writing achievement. The results of the findings were mixed, and somewhat disappointing in that only one of the CAF variables (accuracy) showed a statistically significant positive correlation to writing achievement. Conversely one of the motivation factors, linguistic-self confidence showed a statistically significant negative correlation to writing achievement.

There was no statistically significant correlation between complexity and writing achievement. Complexity did show a statistically significant correlation with fluency ( $r = .29$ ,  $p < .05$ ), a medium or typical effect size. Increases in fluency should allow for more concentration on complexity. In examining the role of task on complexity, accuracy and fluency Skehan and Foster (1999) found that complexity of language is influenced by “processing load” (p. 93). Increased fluency should allow for greater ease of processing, however, the connection between fluency and complexity seems to be more direct than that between fluency and accuracy. According to Vercellotti (1994) such trade off effects in CAF studies “are attributed to the inability of the learner to simultaneously attend to CAF components at the highest level” (p. iv).

Accuracy and writing achievement had a statistically significant correlation of  $r = .33$ ,  $p < .01$ . One reason for the significant correlation of accuracy and writing achievement may be that in subjectively scoring the essays the trained readers were strongly influenced by accuracy. Although accuracy was only one part of the scoring rubric (language use), problems related to accuracy may have affected the scoring of other aspects of the essays as well (context, organization, and vocabulary). That is to say, grammatically weak arguments (organization) may have seemed of lower quality than more grammatically correct ones. The same can be said for the categories of organization and vocabulary. Giving essays with more grammar mistakes lower overall scores than essays with better accuracy could lead to the correlation between accuracy and writing achievement. Conversely, this kind scoring may have confounded the significant correlation of the two other developmental measures, complexity and fluency. Although the categories of the rubric were meant to be independent of each other, absolute independence is difficult, if not impossible, to realize when papers are graded subjectively. This, in part, accounts for the interest in investigating the predictive powers of objective measures of

syntactic analysis, such as those provided by the *L2 Syntactic Complexity Analyzer* that was used in this study.

No statistically significant correlation was found between fluency and writing achievement. One reason for this may have been that in terms of fluency the level of the students was similar enough that degrees of fluency did not affect the scoring of the trained readers. Moreover, in scoring the essays the raters were not told to consider the fluency of the timed writing, and there was no specific category on the rubric that the raters used for any specific measure of fluency such as length or word count. While fluency is a cognitive skill, the raters may have instinctually given more consideration to the metacognitive skills of content and organization. This could lead to the discounting of subtle differences in both fluency and complexity in a way that would discourage correlations between these cognitive skills and writing achievement.

Statistical analysis showed no significant correlation between engagement and writing achievement. However, there was a statistically significant correlation between engagement and accuracy,  $r = .39, p < .01$ . The importance of engagement in successful learning is well documented. Zhao and Kuh (2004) investigated the relationships between participating in learning communities and student engagement of first-year and senior students in China from 365 4-year institutions. Their findings indicate that participating in a learning community is positively linked to engagement and student self-reported outcomes of overall satisfaction with college. Lee (2012) used validated instruments, Wigfield and Guthrie's (1997) Motivation for Reading Questionnaire (MRQ) and Egbert's (2003) Perception Questionnaire, and found that there were strong correlations between motivation and engagement for adult ESL readers.

The inability to replicate such outcomes in this study may be related to the inappropriateness and weakness of the measure that was used, and the assumption that there would be a link between peer evaluation and engagement may have been invalid. One shortcoming may have been the rubric used by the participants to evaluate their peers. This rubric (see Appendix G) was aimed at evaluating a participant's writing and did not directly address engagement issues. A lack of peer review training may have further weakened the measure. Finally, it would seem that if engagement is to be more accurately assessed, self-reporting by the participants would be better than peer evaluation.

Statistical analysis showed a statistically significant negative correlation between linguistic self-confidence motivation and writing achievement,  $r = -.29, p < .05$ . These findings are in contradiction with other studies which have found positive correlations between positive attitude and writing skill (Hashemian & Heidari, 2013; Liao & Wong, 2010; Ushida, 2005).

The motivation survey used in the L2 writing course that generated the archival data for this study had been adapted study from a published study by Guilloteaux and Dornyei (2008). Having read the original study before beginning this analysis of the archival data, the use of the Guilloteaux and Dornyei (2008) survey seemed to be a good choice for the L2 writing class under study. It was assumed that this particular self-reporting motivation survey could be justified based on the validity of the original instrument found in previous research. However, the negative correlations between the motivation and writing achievement seems contradictory, as it means that students with relatively higher writing achievement scores would have moderately lower motivations scores. Without further investigation it is impossible know what might account for such results.

## Predicting Writing Achievement

Diane Larsen-Freeman is often cited as one of the researchers who saw the need for a reliable ESL index of development (1978). She understood that such a measure would have very practical implications for both students and teachers of L2 because “the behavior of second language students and the influences on their learning process change as their proficiency in the target language progresses (p. 440). The most traditional methods for assessing a student’s writing proficiency, both L1 and L2, were holistic and analytic evaluation schemes as discussed by Perkins (1983). The impetus for the search for objective measures of assessing written language proficiency was the minimally terminable unit, a concept introduced by Hunt (1965). Since then a very large number of objective measures of L2 writing have been developed (Homburg, 1984). In second language acquisition studies, the nature of such measures has traditionally been aimed at assessing the levels of complexity, accuracy and fluency. Although similar in nature and intent, the measures of complexity, accuracy and fluency are greatly varied. Wolf-Quintero (1998) described over 100 measures of CAF. The most recent shift in research to find objective measures of L2 writing proficiency now includes syntactical lexical analysis and the use of automated tools to analyze text (Graesser, McNamara, Louwerse, and Cai, 2004). The use of complexity, accuracy, and fluency is consistent with the ongoing search in second language acquisition for objective measures of L2 writing proficiency, defined in this study as writing achievement. The archival data offered two other variables of a very different nature to use in the predication of L2 writing achievement, engagement and motivation.

The results of the predication model were different from what was expected. It was expected that all of the factors would combine to form a very strong model for predicting writing achievement. However, in this study only accuracy was a statistically significant predictor of writing achievement, and it only predicted 9% of the variance (adjusted  $R^2$ ) writing achievement.

By adding the other variables it was possible to account for 15% of the variance in writing achievement (adjusted  $R^2$ ).

In the L2 writing course used in this study, the university had a policy of placing students in classes based on their performance on a standardized test (TOFEL). This could mean that the sample was homogeneous in terms of proficiency, which could have confounded the attempt to predict writing achievement based on complexity, accuracy and fluency. Other studies have shown that predicating writing achievement with objective measures can be done if there are differences related to levels of proficiency (Flahive & Snow, 1980; Hwang, 2012, Kyle, 2011).

Although engagement was not shown to be a statistically significant predictor of writing achievement in this study it is well known that engagement is essential for learning (Cambourne, 1995). The lack of evidence supporting the predictive power of engagement is in contradiction to the findings of other studies. According to Bandura (1986), “the most important determinants of learning effort and persistence in a given activity are positive self-efficacy beliefs and increased interest (as cited in Kromos, 2012, p. 399). In a study of 191 college students in both online and face-to face college courses, Floyd, Harrington, and Santiago (2009) found that engagement was significantly correlated to learning strategies, and Smith, Sheppard, Johnson, and Johnson (2005) drew attention to the role of engagement in both education growth and educational success. Further studies are needed to substantiate the role of engagement in predicting writing achievement.

Motivation seemed like an important and promising variable to include in the predication model, however the findings of this study were not able to show that motivation played an important role in predicting writing achievement. Kromos (2013) has pointed out, “very few

studies in the field of SLA have considered the extent to which motivational factors influence how students exploit the learning potential of oral or written communication tasks” (p. 400). Ortega (2012) noted that, “It may be fair to say that, at least to date, the broadly conceived construct of writing engagement has been less generative of interest in instructional L2 writing–SLA interfaces than the narrow cognitive construct that is posited to influence attentional capacities” (p. 412). Without benchmarks it is not possible to accurately interpret the lack of statistical significance of motivation in the prediction of writing achievement. But in the interest of better understanding what drives L2 writing achievement the role of both engagement and motivation call for further consideration.

## **Implications**

### **The Effectiveness of Computer Mediation in L2 Writing Classrooms**

This study has practical implications for L2 writing classrooms. Primary among these are the potential for using computer mediation to facilitate peer learning and the writing process approach. In the L2 writing class used to gather the archival data for this study, computer mediation seemed to work because students bought into the concept and understood the system. Moreover, they showed the maturity needed to work both individually and as a group in a computer mediated, online environment. Computer mediation made it possible for the students to work at their own pace outside of class and then seamlessly connect their out-of-class work with the in-class sessions. Before the start of class everything was ready for the next steps of peer review, editing and revision. This sort of timing and connectivity would be hard to match in a traditional classroom setting. Computer mediation also made all the work being done online transparent, which could help account for the high levels of individual responsibility and accountability displayed by the students.



Computer mediation allowed for an effective management of transitions from out of class planning and drafting to in class review, editing, revising and posting for the teacher. There was no need to prepare copies, organize papers, or manually record student performance and completion of the writing tasks. All the material needed for the course was already contained in the class website and available to each participant at their convenience. After they were posted, the assignments were immediately available for peer review, editing, revision and final posting. All the work was stored and recorded as data at every step of the process. The class website provided all the support needed to complete assignments, and permanently recorded the results in a reliable and timely fashion that could facilitate easy retrieval.

In practical terms this meant that computer mediation allowed for efficiency and intensity of performance that translated into a very high level of L2 writing practice, increasing the amount of time spent on task. In the twelve week course the participants completed a written pretest, posttest, nine out of class readings, nine out of class drafts, read and reviewed all of their peers drafts, read all the reviews sent by their peers, wrote nine revisions of drafts, submitted nine peer evaluations, wrote nine class reflections, one practice extended essay, one final extended essay and completed a motivation survey.

The efficiency of the Moodle site that powered the computer mediation was a key to gathering of the archival data used in this study. It allowed for detailed and accurate storage and organization data on a very large scale. The ability to access this rich database made it possible to search for and organize the data necessary to thoroughly investigate the learning outcomes of the course and the relationships among the variables.

## **Peer Review and Evaluation**

In this study the archival data was not used to delve into all aspects of peer review and evaluation on the learning outcomes of the course. The data did, however, reveal that participants sought to faithfully fulfill their duties as reviewers and evaluators, and there was no missing data. For every assignment carried out the participants read and responded to all the peers in their group without fail, and at the end of each session used the course rubric to evaluate each of the peers in their group. The value of peer work in L2 writing has been well documented (Berg, 1999; Carson & Nelson, 1996; Connor & Asnavage, 1994; DiPardo & Freedman, 1988; Ellis, 2011; Hedgcock & Lefkowitz, 1992; Lan, Wang, Hsu, & Chan, 2011; Lui & Sadler, 2003; Mangelsdorf & Schulmberger, 1992; Nelson & Murphy, 1992; O'Donnell & King, 1999; Paulus, 1999; Stanely, 1992; Swain & Lapkin, 2001; Tzu & Ng, 2000; Ueno, 2010; Villa & DeGuerrero, 1996; Zhang, 1995). In this course it had the effect of helping students better complete the moves of the writing assignment approach and was substituted for explicit, teacher-fronted instruction. Although further research is need to better investigate the results of peer review and evaluation on the leaning outcomes of the course, the volume and absolute completeness of the archival data indicates that peer review played a role in leading to high levels of participant autonomy and involvement the writing process approach and allowing for the minimization of teacher fronted instruction.

## **Writing Process Approach**

The benefits of following the writing process approach in L2 writing are well known and it is now widely used in many L2 writing settings (Badger, 2000; Munice, 2002; Onozawa, 2010). This study was able to verify the suitability of using the combination of peer review and computer mediation in carrying out the various stages of the writing process approach. Each

stage of the writing process approach (pre-writing and planning, drafting, responding, editing and revising) is a flexible and natural approach to writing instruction. The goodness of fit between it, computer mediation and peer review and evaluation is of special interest as this combination of pedagogies allowed for the acceleration and intensification of participant writing while providing the structure and support needed to minimize direct and explicit teacher intervention and instruction. It was beyond the scope of this study of the archival data to investigate the cause and effect relationships between the pedagogies and the favorable learning outcomes observed upon completion of the course, however, such investigation presents excellent possibilities for future research.

### **Explicit Instruction versus Social Constructivism**

Upon examining the archival data for the L2 writing course, and based upon the lengthy interviews held with the instructor it became clear that he had a vision of a new and better way to engage students in L2 writing. One pillar of his approach called for a reversal of explicit teacher centered instruction as well as abstention from focusing on grammar (focus on forms) and translation. The problem was how to get around these more traditional approaches, and his answer was the use of computer mediation and peer work. In this study of the archival data it was not possible to speculate on the cause and effect relationships between his methods and the favorable learning outcomes documented in this study. However, examination of the records did show that students were both willing and able to engage in self-advocating, social learning. The absence of explicit, teacher-fronted instruction did not lead to gaps, lack of focus, compliance issues, or mis-direction in the course. Time was not wasted, there was no confusion or breakdown in the participants' understanding of how to complete the moves of the course, and rich data was generated that confirmed positive learning outcomes. Based on the observations

made in gathering and examining the archival data for this study it can be said that the combination of computer mediation, peer review and evaluation, and the writing process does make it possible for the teacher to step aside and allow the students to engage in social constructivist learning, and that positive learning outcomes can be expected.

### **Recommendations for Future Research**

A number of recommendations can be made for future research based on this study. As this study relied on the use of archival data it was necessary to limit the scope of the research design to describing the learning outcomes of the course. In regard to investigating the learning outcomes of the pedagogy, as this study did in the first general research question future research designs with various levels of independent variables related to the developmental skills of complexity, accuracy and fluency would make it possible to conduct experimental studies. Potential independent variables could include the role of explicit instruction to see if certain types of grammar training or genre training would influence complexity, fluency and accuracy. This could be done in several ways such as varying types of teacher centered instruction, worksheets, or discussion problems. Such interventions could be different in nature and focus, as well as intensity. This would allow future researchers to better establish cause and effect relationships between learning interventions and learning outcomes in L2 writing classes using computer mediation and peer work to facilitate the writing process approach.

It has been shown that task can have an effect on complexity, accuracy and fluency, but no such studies have been done in L2 writing classes using computer mediation and peer work to facilitate the writing process approach. In this study there was only one task, the writing of opinion papers. Using task as an independent variable would allow for an experimental research

design to measure the effect of task on L2 writing in a computer mediated, peer work driven setting.

Another variable that could be manipulated would be the nature and role of peer intervention. First of all, various types of peer training could be carried out to see if they had beneficial effects on writing improvement and learning outcomes. The ways in which participants respond to peers' feedback could also be measured and manipulated. According to Shute (2007) formative feedback has the qualities of being, "non-evaluative, supportive, timely, specific, credible, infrequent and genuine" (p. i). Coming up with methods to control for and measure such parameters of peer feedback would provide future researchers with a wide variety of options to more thoroughly investigate the learning outcomes related to peer feedback on L2 writing.

These kinds of adjustments to future L2 writing courses using computer mediation and peer work to facilitate the writing process approach would allow researchers to better analyze and explain the effects of various teaching interventions on L2 writing improvement, and better establish cause and effect relationships between the independent and dependent variables that can be introduced into L2 writing classroom settings.

The second general research question of this study was aimed at investigating the relationships among L2 writing developmental skills (CAF), engagement, motivation and L2 writing proficiency (writing achievement) the measurement of pre and post levels of motivation and proficiency. In future research the measurement of pre and post levels of motivation and proficiency would make it possible to more completely investigate these relationships. It would also make it possible to more completely investigate the potential for predicting L2 writing proficiency levels using objective measures of writing improvement (CAF), as well as self-

reported measures of engagement and motivation as predictors of the criterion variable, writing proficiency when measured subjectively as writing achievement.

Finally, although this study used a quantitative design, in future research the data in the students' reflexive journals and inclusion of measures such as class observations and structured interviews could allow researchers to carry out both qualitative and mixed methods studies.

According to Creswell (2003) the differences between qualitative, quantitative and mixed methods research lies in knowledge claims, strategies of inquiry, and methods of data collection. For future research, a mixed methods approach to L2 writing research would be especially attractive in that it would call for pragmatic knowledge claims, the collections of both quantitative and qualitative data, and a methodology Creswell defines as having "closed-ended measures, open-ended observations" (p. 20).

## REFERENCES

- A New Japan. (2011). Why English is so tough? *The Diplomat*. Retrieved from <http://thediplomat.com/2011/05/why-english-is-tough-in-japan/>
- Abe, E. (2013). Communicative language teaching in Japan: current practices and future prospects. *English Today* 29(2), (46-53).
- AddedBytes. (2014). Retrieved from <https://www.addedbytes.com/>
- Ahlsten, E., & Lundh, N. (2007). *Teaching writing in theory and practice: A study of ways of working with writing in the 9th grade*. (Degree Project 15 ECTS) Stockholm Institute of Education, Stockholm, Sweden) Retrieved from <http://www.diva-portal.org/smash/get/diva2:199311/FULLTEXT01.pdf>
- Al-Shehri, A.S. (2009). Motivation and vision: The relation between the ideal L2 self, imagination and visual style. In Z. Dornyei, E. Ushioda, (Eds.), *Motivation, language identity and the L2 self. multilingual matters*, (pp. 164-171). Bristol, England: Multilingual Matters.
- Badger, R. (2000). A process genre approach. *ELT Journal*, 54(2), 153-160.
- Bacha, N. (2001). Writing evaluation: What can analytic versus holistic essay scoring tell us? *System*, 29, 371–383.
- Baker, T. J. (2013). Creative writing, academic writing, grammar & plagiarism, or Grammarly: the world's best grammar checker & plagiarism detector. *Professorbaker's Worldwide English Blog*. Retrieved from <http://profesorbaker.com/2013/09/28/creative-writing-academic-writing-grammar-plagiarism-or-grammarly-the-worlds-best-grammar-checker-plag>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Becker, W. E., & Walstad, W. B. (1990). Data loss from pretest to posttest as a sample selection problem. *The Review of Economics and Statistics*, 72(1), 184-188.
- Benson, P., & Nunan, D. (2005). (Auto) biography and learner diversity. In P. Benson, D. Nunan (Eds.), *Learner's stories: Differences and diversity* (pp. 3-21). Cambridge: Cambridge University press.
- Berg, C. (1999). The effects of trained peer response on ESL student's revision types and writing quality. *Journal of Second Language Writing*, 8(3), 215-241.

- Birjandi, P., & Mamaghani, H. J. (2014). The impact of immediate and delayed written pushed output produced by pre-intermediate EFL learners in Iran on their acquisition of English verb tenses. *Journal of Language Teaching and Research*, 5(6) 1340-1347.
- Bitchner, J. (2005). The extent to which classroom teaching options and independent learning activities can help L2 writers improve the accuracy of their writing. *Manukau Institute of Technology, Auckland, September 2005*, ISSN 1176-7480. Retrived from <http://www.independentlearning.org/uploads/100836/BIT05081.pdf>
- British Council. (2014). *What is comprehensible input?* Retrieved from <http://www.teachingenglish.org.uk/knowledge-database/comprehensible-input>.
- British Council. (2014). *Teaching English: Direct method*. Retrieved from <http://www.teachingenglish.org.uk/knowledge-database/direct-method>
- Brooks, G. (2013). Assessment and academic writing: A look at the use of rubrics in the second language writing classroom. *Kwansei Gakuin University Humanities Review*, 17: 227-240. Retrieved from <http://kgur.kwansei.ac.jp/dspace/bitstream/10236/10548/1/17-18.PDF>
- Brown, H. D. (2000). *Principles of language learning and teaching* (4<sup>th</sup> ed). New York: Longman.
- Brindely, J., Walti, C., & Blaschke, L. M. (2009). Creating effective collaborative learning groups in an online environment. *The International Review of Research in Open and Distributed Learning*, 10(3). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/675/1271>
- Bruffee, K. A. (1999) *Collaborative learning: Higher education, interdependence, and the authority of knowledge*. Baltimore, Maryland: Johns Hopkins University Press.
- Bubas, G. (2001). Computer mediated communication theories and phenomena: Factors that influence coloration over the internet. Paper submitted for: *3rd CARNet Users Conference, Zagreb*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.111.822&rep=rep1&type=pdf>
- Cambourne, B. (1995). Toward an educationally relevant theory of literacy learning: Twenty years of inquiry. *The Reading Teacher*, 49, (3), 182-190.
- Carson, J., & G. L. Nelson. (1996). Chinese students' perceptions of SEL peer response group interaction. *Journal of Second Language Writing*, 5(1), 1-19.
- Caudrey, T. (1995). What the "process approach" means to practicing teachers of second language writing skills. *The Electronic Journal for Teaching English as a Second Language*, 1(4). Retrieved from: <http://www.tesl-ej.org/wordpress/issues/volume1/ej04/ej04a3/>



- Cazden, C. (1996). Selective traditions: Readings of Vygotsky in writing pedagogy. In D. Hicks (Ed.), *Discourse, learning, and schooling* (pp. 165-185). New York: Cambridge University Press.
- 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(3), 267-296.
- Cheng, Y. S. (2004). A measurement of second language writing anxiety: Scale development and preliminary validation. *Journal of Second Language Writing*, 13, 313-335.
- Chenoweth, N. A., & Hayes, J. (2001). Fluency in writing: Generating text in L1 and L2. *Written Communication*, 18(1), 80-98.
- Chihara, T., & Oller, John W. (1978). Attitudes and attained proficiency in EFL: A sociolinguistic study of adult Japanese speakers. *Language Learning*, 28 (1), 55-67.
- Chomsky, N. (1957). *Syntactic structures*. Berlin: Mouton de Gruyter.
- Chomsky, N. (1959). A review of B. F. Skinner's verbal behavior. *Language*, 35(1), 26-58.
- Clavel, T. (2014). China, South Korea, face familiar woes in English quest. *The Japan Times*. Retrieved from [http://www.japantimes.co.jp/community/2014/01/19/issues/china-south-korea-face-familiar-woes-in-english-quest/#.VE8B9\\_0hS6E](http://www.japantimes.co.jp/community/2014/01/19/issues/china-south-korea-face-familiar-woes-in-english-quest/#.VE8B9_0hS6E)
- Clément, R., & Kruidenier, B. (1983). Orientations on second language acquisition: 1. The effects of ethnicity, milieu and their target language on their emergence. *Language Learning*, 33(3), 273-291.
- Coffin, C., Curry, M. J., Goodman, S., Hewings, A., Lillis, T., & Swann, J. (2003). *Teaching academic writing: A toolkit for higher education*. London: Routledge.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Cohen, A. D., & Cavacanti, M. C. (1990). Feedback on compositions: Teacher and student verbal reports. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom*, (pp. 155-177). Cambridge: Cambridge University Press.
- Cole, J. (2005). *Using Moodle*. Sebastopol, CA: O'Reilly Community Press.
- Connor, U., & Asenavage, K. (1994). Peer response groups in ESL writing classes: How much impact on revision? *Journal of Second Language Writing*, 3(3), 257-276.
- Coxhead, A., & Byrd, P. (2007). Preparing writing teachers to teach the vocabulary and grammar of prose. *Journal of Second Language Writing*, 16, 129-147.

- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Crookes, G., & Schmidt, R. (1989). Motivation: Reopening the research agenda. *Language Learning*, 41(4), 469-512.
- Csizer, K., & Kormos, J. (2009). Learning experiences, selves and motivated learning behaviour: A comparative analysis of structural models for Hungarian secondary and university learners of English. In: Z. Dornyei, & E. Ushioda (Eds.), *Motivation, Language Identity and the L2 Self* (pp. 98-119. Bristol, England: Multilingual Matters
- Daniels, T., & Pethel, M. (2005). Computer mediated communications. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology*. Retrieved from <http://epltt.coe.uga.edu/>
- Decci, E. L. & Ryan, R. M. (1985). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25, 54-67.
- Decoo, W. (2001). *On the mortality of language learning methods*. Given as the James L. Barker lecture, November 8<sup>th</sup> 2001 at Brigham Young University. Retrieved from <http://www.disseminate.be/mortality.htm>
- De Waard, I. (2013). Seamless learning: Forget MOOC's, mobile learning and ubiquitous access. *Learning Solutions Magazine*. Retrieved from <http://www.learningsolutionsmag.com/articles/1298/seamless-learning-forget-moocs-mobile-learning-and-ubiquitous-access>.
- DiPardo, A., & Freedman, S. W. (1988). Peer response in the writing classroom: Theoretic foundations and new directions. *Review of Educational Research*, 58(2), 119-149.
- Dornyei, Z. (1994a). Motivation and motivating in the foreign language classroom. *Modern Language Journal*, 78, 515-523.
- Dornyei, Z. (1994b). Understanding L2 motivation: On with the challenge. *Modern language Journal*, 78, 515-523.
- Dornyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah, NJ: Erlbaum.
- Dornyei, Z. (2009). The L2 motivational self system. In Z. Dornyei & E. Ushida (Eds.), *Motivation, language identity, and the L2 self*, (pp. 9-42). Bristol, England: Multilingual Matters.
- Dornyei, Z. (2015). *Personal website*. Retrieved from <http://www.zoltandornyei.co.uk/>

- Dornyei, Z., & Csizer, K. (2002). Motivational dynamics in second language acquisition: Results of a longitudinal nationwide survey. *Applied Linguistics*, 23, 421–462.
- Dunn, W. E. & Lantolf, J. P. (1998). Vygotsky's zone of proximal development and Krashen's  $i+1$ ; Incommensurable constructs; incommensurable theories. *Language Learning*, 48(3), 411-442.
- Egbert, J. (2003). A study of flow in the foreign language classroom. *The Modern Language Journal*, 87(4), 499-518.
- Ellis, J. M. (2011). Peer feedback on writing: Is on-line actually better than on paper? *Journal of Academic Language & Learning*, 5(1), 88-99.
- Ellis, R. (2008). *The study of second language acquisition* (2<sup>nd</sup>. Ed.). Oxford, Oxford University Press.
- Faigely, L., & White, S. (1981). Analyzing revision. *College Composition and Communication*, 32(4), 400-414.
- Feller, T., & Apple, M. (2006). Developing writing fluency and lexical complexity with blogs.) *The JALT CALL Journal*, 2(1), 15-26.
- Ferris, D. (2004) The “Grammar Correction” debate in L2 writing: Where are, 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., & Hedgcock, J. S. (1998). *Teaching ESL composition*. Mahwah, NJ: Erlbaum.
- Flahive, D. F., and Snow, B. G. (1980). The use of objective measures of syntactic complexity in the evaluation of composition by EFL students. In J. Oller, Jr. and K. Perkins, (Eds.), *Research in language testing*, (pp. 171-176). Rowley, Mass.: Newbury House Publishers, Inc., 1980.
- Flavell, J. H. (1976). Metacognition and cognitive monitoring: A new area of cognitive-development. *American Psychologist*, 34(10), 906-911.
- Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32(4), 365-387.
- Floyd, K. S., Harrington, S. J., & Santiago, J. (2009). Improving IS student engagement and perceived course value. Paper presented at the Southern Association for Information Systems Conference, Charleston, SC. Retrieved from [http://sais.aisnet.org/2009/proceedings/\\_SAIS2009%20Conference%20Proceedings.pdf](http://sais.aisnet.org/2009/proceedings/_SAIS2009%20Conference%20Proceedings.pdf)
- Foster, H. (2009). Moodle announcements: Moodle statistics. Retrieved form <https://moodle.org/mod/forum/discuss.php?d=127310>

- Foster, P., & Skehan, P. (1996). The influence of planning and task type on second language performance. *Studies in Second Language Acquisition*, 9, 12-20.
- Foster, P., & Skehan, P. (1999). The influence of planning and focus of planning on task-based performance. *Language Teaching Research* 3, 215-247.
- Fotos, S. (1998). Shifting the focus from forms to form in the EFL classroom. *ELT Journal*, 52(4), 301-307.
- Fredricks, J., & McColskey, M. (2011). Measuring student engagement in upper elementary through high school: A description of 21 instruments. *Issues & Answers*. National Center for Education Evaluation and Regional Assistance, SERVE Center, Greensboro, North Carolina: Regional Education Laboratory.
- Fredicks, J. A., Blumefeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. Greensboro, UNC. *Review of Educational Research*, 74(1), 59-109.
- Freese, C. (2013). Voice in writing: Developing a unique writing voice. *Writers Digest*. Retrieved from <http://www.writersdigest.com/editor-blogs/there-are-no-rules/voice-in-writing-developing-a-unique-writing-voice>.
- Fujita, Y. (2006). A brief sketch of second language writing studies: A retrospective. *Kyoudaigaken Maebashi Kokuritsu Daigaku Ronshyu*, 6, 59-73.
- Fulkerson, R. (1979). Four philosophies of composition. *College Composition and Communication*, 30, 343-348.
- Fulkerson, R. (1990). Axiological consensus and paradigmatic diversity. *College Composition and Communication*, 41(4), 409-429.
- Gallagher, C. (1999). *Leo Semyonovich Vygotsky*. Retrieved from <http://www.muskingum.edu/~psych/psycweb/history/vygotsky.htm>
- Gardner, R. C. (1985). *Social psychology and second language learning*. London: Edward Arnold.
- Gardner, R. C. (2001). Language learning and motivation: The student, the teacher, and the researcher. *Texas Papers in Foreign Language Education*, 6(1), 1-18.
- Gardner, R. C. (2005). Integrative motivation and second language acquisition. *Canadian Association of Applied Linguistics, Canadian Linguistics Association* (Plenary Talk). London, Canada. Retrieved from <http://publish.uwo.ca/~gardner/docs/caaltalk5final.pdf>
- Gardner, R. C. (2007). Motivation and second language acquisition. *Porta Linguarum* 8, 9-20.
- Gardner, R. C. (2009). *Motivation and second language acquisition*. New York, NY: Lang.

- Gardner, R. C. (2010). Second language acquisition: A social Psychological perspective. In R. B. Kaplan (Ed.), *The Oxford Handbook of Applied Linguistics*, (pp. 204-216). Oxford: Oxford University Press.
- Gardner, R. C., & Lambert, W. E. (1959). Motivational variables in second-language acquisition. *Canadian Journal of Psychology*, 13, 266-272.
- Gardner, R. C., & Smythe, P. C. (1974). The integrative motive in second l-language acquisition. *Bilingualism, Biculturalism, and Education*, 1, 31-45
- Gass, S. M., & Selinker, L. (2001). *Second language acquisition: An introductory course*. Mahawa, NJ: Erlbaum.
- Graesser, A. C., McNamara, D. S., Louwerse, M. M., & Cai, Z. (2004). Coh-metrix: Analysis of text on cohesion and language. *Behavior Research Methods, Instruments, & Computers*, 36(2), 193-202.
- Giridharan, B. (2012). Identifying gaps in academic writing of EFL students. *US-China Education Review*, A6, 578-587. Retrieved from <http://files.eric.ed.gov/fulltext/ED535491.pdf>
- Gliner, J. A., Morgan, G. A., & Leech, N. L. (2009). *Research methods in applied settings: An integrated approach to design and analysis*. New York, NY: Routledge.
- Grabe, W., & Kaplan, R. B. (1996). *Theory & practice of writing: An applied linguistics and language study*. London: Person Education.
- Graesser, A. C., McNamara, D. S., Louwerse, M. M., & Cai, Z. (2004). Coh-metrix: Analysis of text on cohesion and language. *Behavior Research Methods, Instruments, & Computers*, 36(2), 193-202
- Guardado, M., & Shi, L. (2007). ESL students' experiences of online peer feedback. *Science Direct: Computers and Composition* 24, 443-461.
- Guilloteaux, M. J., & Dornyei, Z. (2008). Motivating language learners: A classroom-oriented investigation of the effects of motivation strategies on student motivation. *TESOL Quarterly*, 42(1) 55-75.
- Haiyang, A. (2014). *Web-based L2 syntactic complexity analyzer (single mode)*. Retrieved from: Web-based L2 Syntactic Complexity Analyzer (Single Mode)
- Hamp-Lyons, L. (1995). Nonnative writing: The trouble with holistic scoring. *TESOL Quarterly*, 29(4), 759-762.
- Harasim, L. (2000). Shift happens: Online education as a new paradigm in learning. *The Internet and Higher Education*, 3(1/2), 41-61.

- Harley, B., & Swain, M. 1984. The interlanguage of immersion students and its implications for second language teaching. In A. Davies, C. Cripe, & A. Howatt (Eds.), *Interlanguage* (pp. 291-311). Edinburgh: Edinburgh University Press
- Heshemiam, M., & Heidari, A. (2013). The relationship between L2 learners' motivation/attitude and success in L2 writing. *Procedia – Social and Behavioural Sciences*, 70, 476-489.
- Hedgcock, J., & Lefkowitz, N. (1992). Collaborative oral/aural revision in foreign language writing instruction. *Journal of Second Language Writing*, 1(3), 255-276.
- Herder, S., & King, R. (2012). Extensive writing: Another fluency approach for EFL Learners. *Extensive Reading World Congress Proceedings*, 1, 128-130.
- Herring, S. (2003). Computer-mediated discourse. In D. Schiffrin, D. Tanning, & H. E. Hamilton (Eds.), *The Handbook of Discourse Analysis*. Wiley-Blackwell. Retrieved from <http://occupytampa.org/files/wcom/The%20Handbook%20of%20Discourse%20Analysis.pdf>
- Higgins, E. T. (1987). Self-concept discrepancy theory: A theory relating self and affect. *Psychological Review*, 94 (3), 319-340.
- Higgins, E. T. (1998). Promotion and prevention; Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, 31, (pp. 1-46). New York: Academic Press.
- Higley, M. (2013). Benefits of synchronous and asynchronous learning. *eLearning Industry*. Retrieved from <http://elearningindustry.com/benefits-of-synchronous-and-asynchronous-e-learning>
- Hinkel, E., & Fotos, S. (2002). From theory to practice: A teacher's view. In E. Hinkel & S. Fotos (Eds.), *New perspectives in grammar teaching in second language classrooms* (pp. 1-12). Mahwah, NJ: Erlbaum.
- Homburg, T. J. (1984). Holistic evaluation of ESL compositions: Can it be validated objectively? *TESOL Quarterly*, 18, 87-107.
- Hongo, J. (2013). Abe wants TOFEL to be key exam. *The Japan Times*. Retrieved from <http://www.japantimes.co.jp/news/2013/03/25/national/abe-wants-toefl-to-be-key-exam/>
- Hosseini, P. (2010). The task of complexity on learners' written narratives. *English Language Teaching*, 3(3), 198-205.
- Housen, A., & Kuiken, F. (2009). Complexity, accuracy, and fluency in second language acquisition. *Applied Linguistics*, 30(4), 461-473. doi: 10.1093/applin/amp048.
- Housen, A., & Kuiken, F. Vedder, I. (2012). Complexity, accuracy, and fluency: Definitions, measurements and research. Housen, A., & Kuiken, F., & Vedder, I. (Eds), *Dimensions*

- of L2 performance and proficiency: Complexity, accuracy, and fluency in SLA*, (pp. 1-20). Amsterdam: John Benjamins Publishing
- Howat, A. (1984). *A history of English language teaching*. Oxford: Oxford University Press.
- Hughes, J. (2014). *Writing process*. Retrieved from <http://faculty.uoit.ca/hughes/Writing/WritingProcess.html>
- Hunt, K. (1965). *Grammatical structures written at three grade levels*. Champaign, IL: National Council of Teachers of English.
- Hwang, E., (2012). Korean EFL learners& language development across proficiency levels in written productions. *English Teaching*, 67, (3), 27-50.
- Hwang, J. A. (2010). A case study of the influence of free writing on writing fluency and confidence of EFL college-level students. *Second Language Studies*, 28(2), 97-134.
- Hyland, K. (2003). *Second language writing*. Cambridge: Cambridge University Press.
- Hyland, K. (2004) *Genre and second language writing*. Ann Arbor: University of Michigan Press.
- Ikegashira, A., Morita, Y., & Matsumoto, Y. (2009). English Education in Japan: From kindergarten to university. In R. Reinelt (Ed.), *Into the next decade*. Matsuyama, Japan: Research Laboratory, EU Matsuyama. Retrieved from: <http://web.iess.ehime-u.ac.jp/raineruto1/02RD2.pdf>
- Ishikawa, S. (1995). Objective measurement of low-proficiency EFL narrative writing. *Journal of Second Language Writing*, 4, 51–70.
- Izumi, S., & Bigelow, M. (2012). Does output promote noticing and second language acquisition? *TESOL Quarterly*, 34 (2), 239-276.
- Jacobs, H. L., Zingraf, S. A., Wormuth, D. R., Hartfiel, V. F., & Hughey, J. B. (1981). *Testing ESL composition: A practical approach*. Rowely, MA: Newberry House.
- Japos, G. V. (2013). Effectiveness of coaching interventions using Grammarly Software and Plagiarism Detection Software in Reducing Grammatical Errors and Plagiarism of Undergraduate Researches. *Institutional Research Journal*, 1 (1), 97-109.
- Jin, L. (2005). The mediation of technology in ESL writing and its implications for writing assessment. *Assessing Writing*, 11, 5-21.
- Jin, L. (2007). *Computer-mediated peer response in a level-IV ESL academic writing class: A cultural historical activity theoretical perspective*. (Doctoral dissertation). Retrieved from ProQuest/UMI, 2007. (Accession Order No. 333,336.)

- Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational Researcher*, 38(5), 365-379.
- Johnson, M. D., Mercado, L., & Acevedo, A. (2012). The effect of planning sub-processes on L2 writing fluency, grammatical complexity, and lexical complexity. *Journal of Second Language Writing*, 21(3), 264-282.
- Kern, R. G. (1995). Restructuring classroom interaction with networked computers: Effects on quality and characteristics of language production. *The Modern Language Journal*, 79(4), 457-476.
- Kibler, R. L. (2011). A preliminary English learning motivation survey for Japanese university students in a CALL environment. *Journal of Higher Education*, Tokai University (Hokkaido Campus) 5. Retrieved from [http://www.sci-utokai.jp/jhe/jhe5\\_J.html](http://www.sci-utokai.jp/jhe/jhe5_J.html)
- Kibler, R. L. (2012). Changing the expectations surrounding English education in the classroom. *Journal of Higher Education*, Tokai University (Hokkaido Campus) 8. Retrieved from [http://www.sci-utokai.jp/jhe/jhe8\\_J.html](http://www.sci-utokai.jp/jhe/jhe8_J.html)
- Kibler, R. L. (2013). Levels of various affective learning factors in a computer assisted Language learning classroom. *Journal of Higher Education*, 10. Retrieved from [http://www.sci-utokai.jp/jhe/jhe10\\_J.html](http://www.sci-utokai.jp/jhe/jhe10_J.html)
- Kibler, R. L., Yamada, P., Cline, K., Samsonow, G., & Cartwright, J. (2014). The effects of dictionary use and pair work on cloze testing performance in the ESL classroom. *Journal of Higher Education*, 11. Retrieved from [http://www.sci-utokai.jp/jhe/jhe11\\_J.html](http://www.sci-utokai.jp/jhe/jhe11_J.html)
- Kiesler, S., Siegel, J., & McGuire, T. (1984). Social psychological aspects of computer-mediated communication. *American Psychologist*, 39(10), 1123-1134.
- Knapp, P., & Watkins, M. (2005). *Genre, text, grammar: Technologies for teaching and assessing writing*. Sidney, Australia: UNSW Press.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning*. Eaglewood Cliffs, NJ: Prentice Hall.
- Kramsch, C. (1992). Contexts de comprehension. In R. J. Courchene, J. I. Glidden, J. St. John, & C. Therien (Eds.), *Comprehension-based second language teaching* (pp. 63–76). Ottawa: University of Ottawa Press.
- Krashen, S., & Terrell, T. (1983). *The natural approach: Language acquisition in the classroom*. New York, NY: Pergamon.
- Krathwohl, D. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice*, 41(4), 212-218.



- Kroll, B. (2001). Considerations for teaching an ESL/EFL writing course. In Celce-Murcis, M. *Teaching English as a second or foreign language* (3rd ed.), (pp. 219-232). Boston: Heinle & Heinle.
- Kromos, J. (2012). The role of individual differences in L2 writing. *Journal of second language writing*, 21, 390-403.
- Kuhi, D., Rasuli, M. A., & Deylami, Z. (2014). The effect of type of writing on accuracy, fluency, and complexity across proficiency. *Procedia-Social and Behavioral Sciences* 98, 1036-1045.
- Kuwar, U. (2012). Martin Dougiamas, reshaping the world of education through moodle. *Success Stories: A comprehensive resource of success and motivation*. Retrieved from <http://www.successtories.co.in/martin-dougiamas-reshaping-the-world-of-education-through-moodle/>
- Kyle, K. (2011). Objective measures of writing quality. Unpublished thesis. Retrieved from [http://digitool.library.colostate.edu///exlibris/dtl/d3\\_1/apache\\_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8xMzEwODI=.pdf](http://digitool.library.colostate.edu///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8xMzEwODI=.pdf)
- Lado, R. (1957). *Linguistics across cultures: Applied linguistics for language teachers*. Ann Arbor: University of Michigan Press.
- Lambert, C. (2012). Twilight of the lecture. *Harvard Magazine*. Retrieved from <http://harvardmagazine.com/2012/03/twilight-of-the-lecture>
- Lambert, W. E. (1974). Culture and language as factors in learning and education. In F. E. Aboud & R. D. Mead (Eds.), *Cultural factors in learning and education*. Bellingham, WA: Fifth Western Washington Symposium on Learning.
- Lan, Y., Wang, J., Hsu, S., & Chan, T. (2011). Peer Feedback in online writing system. In M. Chan, et al. (Eds.) *Edutainment 2011* (pp. 126-129). Berlin: Springer-Verlag.
- Larsen-Freeman, D. (1978). An ESL index of development. *TESOL Quarterly*, (12)4, 439-448.
- Larsen-Freedman, D., & Long, M. (1991). *An introduction to second language acquisition research*. New York: Longman.
- Larsen-Freedman, D. (2009). Adjusting expectations: The study of complexity, accuracy, and fluency in second language acquisition. *Applied Linguistics*, 30(4), 579-589.
- Latif, M.M.M.A. (2012). What do we mean by writing fluency and how can it be validly measured? *Applied Linguistics*, 34(1), 99-105.

- Lee, H. G. (2012). ESL learners' motivation and task engagement in technology enhanced language learning contexts. Dissertation, Washington State University Research Exchange. Retrieved from <http://hdl.handle.net/2376/2875>
- Lee, N. I. (2004) An analysis of students' writing at university in Japan: How do native speakers write differently from international students. *AARE National Conference*, Melbourne. Retrieved from <http://www.aare.edu.au/data/publications/2004/lee04483.pdf>
- Leech, N. L., Barrett, K. C., & Morgan, G. A. (2011). *IBM SPSS for intermediate statistics use and interpretation* (4<sup>th</sup> ed.). New York, NY: Routledge.
- Leki, I. (1991). The preferences of ESL students for error correction in College level writing classes. *Foreign Language Annals*, 24(3), 203-218.
- Leki, I. (2002) *Academic writing: exploring process and strategies*. Cambridge: Cambridge University Press.
- Leki, I. (2005). Not the end of history. In L.L. Blanton, & B. Kroll, (Eds.), *ESL Composition Tales* (pps. 48-62). Ann Arbor, MI: University of Michigan Press.
- Leki, I., & Carson, J. G. (1994). Students' perceptions of EAP writing instruction and writing needs across the disciplines. *TESOL Quarterly*, 28(1), 81-101.
- Li, J. (2005). The mediation of technology in ESL writing and its implications for writing assessment. *Assessing Writing*, 11, 5-21.
- Liao, M., & Wong, C. (2015). Effects of dialogue journals on students' writing fluency, reflection, anxiety, and motivation. *Reflections on English Language Teaching*, 9(2), 139-161. Retrieved from [http://www.nus.edu.sg/celc/research/books/relt/vol9/no2/139to170\\_liao.pdf](http://www.nus.edu.sg/celc/research/books/relt/vol9/no2/139to170_liao.pdf)
- Lin, H. (2014). Establishing an empirical link between computer-mediated communication (CMC) and SLA: A meta-analysis of the research. *Language Learning & Technology*, 18(3), 120-147.
- Liu, J., & Sadler, R. W. (2003). The effect and affect of peer review in electronic verses traditional modes on L2 writing. *Journal of English for Academic Purposes*, 2, 193-227.
- Long, M. L. (1988). Instructed interlanguage development. In L. Beebe (Ed.) *Issues in second language acquisition: Multiple perspectives*, (pp. 115-141). New York: Newbury House.
- Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. In K. De Bot, R. Ginsberg, & C. Kramsch (Eds.), *Foreign language research in cross cultural perspective* (pp. 39-52). Philadelphia, PA: John Benjamins.

- Long, M. H., & Richards, J. C. (1999). Preface. In B. Kroll (Ed.), *Second language writing: Insights for the classroom* (pps.ix-x). Cambridge, MA: Cambridge Press.
- Looi, C., Seow, P., Zhang, B., So, H., Chen, W., & Wong, L. (2010). Leveraging mobile technology for sustainable seamless learning: a research agenda. *British Journal of Educational Technology*, 41(2), 154-169.
- Lu, X. (2010). Automatic analysis of syntactic complexity in second language writing. *International Journal of Corpus Linguistics*, 15(4), 474-496.
- Lu, X. (2011). A corpus-based evaluation of syntactic complexity measures as indices of college-level ESL writers' language development. *TESOL Quarterly*, 45(1), 36-62.
- Luckmani, Y. M. (1972). Motivation to learn language proficiency. *Language Learning*, 22(2), 261-273.
- Macintyre, P. D., Mackinnon, S. P., & Clement, R. (2009). The baby, the bathwater, and the future of language motivation research. In Z. Dornyei & E. Ushioda (Eds.) *Motivation, language identity, and the L2 self* (pp. 9-42). Bristol, England: Multilingual Matters.
- Mangelsdorf, K., & Schlumberger, A. (1992). ESL student response stances in a peer-review task. *Journal of Second Language Writing*, 1(3), 235-254.
- Martinez, M., & Jagannathan, S. (2008). Moodle: a low-cost solution for successful e-learning. Retrieved from <http://www.learningsolutionsmag.com/articles/71/moodle-a-low-cost-solution-for-successful-e-learning>
- Matsuda, P. K. (2014). Historical inquiry in second language studies. In P.K. Matsuda & T. Siva (Eds.), *Second language writing research: Perspectives on the process of knowledge* (pp. 33- 46). London: Routledge.
- Mazur, E. (1997). Peer instruction: Getting students to think in class. In E. Redish and J. S. Rigden (Eds.), *The changing role of physics in modern universities, part two: Sample classes, AIP conference proceedings* (pp. 981-988). New York: American Institute of Physics.
- Mazur Group. (2015). *Mazur Group: Improving education through research*. Retrieved from <http://mazur.harvard.edu>
- McCurry, J. (2011) Japan launches primary push to teach English. *The Guardian*. Retrieved from <http://www.theguardian.com/education/2011/mar/08/japan-launches-primary-english-push>
- McLeod, S. (2007). *Lev Vygotsky. Simply Psychology*. Retrieved from <http://www.simplypsychology.org/vygotsky.html>

- Millward, E. (2013). *Five reasons flipped classes work*. University Business. Retrieved from <http://www.universitybusiness.com/article/5-reasons-flipped-classrooms-work>
- Mora, J. C., & Valls-Ferrer, M. (2012). Oral fluency, accuracy, and complexity in formal instruction and study abroad learning contexts. *TESOL Quarterly*, 46(4), 601-641.
- Mu, C. (2005). *A taxonomy of ESL writing strategies*. Proceedings Redesigning Pedagogy: Research, Policy, Practice. (1-10). Retrieved from <http://eprints.qut.edu.au/64/1/64.pdf>
- Multon, K. (2010). Interpreter reliability. *Encyclopedia of Research Design*. Neil Salkind (Ed.), CA. Sage, 2010. *SAGE Reference Online*, web. 18 Jul. 2012. Retrieved [http://www.bibb.k12.ga.us/cms/lib01/GA01000598/Centricity/Domain/105/Interrater%20Reliability%20Article\\_1.pdf](http://www.bibb.k12.ga.us/cms/lib01/GA01000598/Centricity/Domain/105/Interrater%20Reliability%20Article_1.pdf)
- Muranoi, H. (2000). Focus on form through interaction enhancement: Integrating formal instruction into a communicative task in EFL classrooms. *Language Learning*, 50(4), 617-673.
- Munice, J. (2002). Process writing and vocabulary development: Comparing lexical frequency profiles across drafts. *System*, 30(2), 225-235.
- Myles, J. (2002). Second language writing and research: The writing process and error analysis in student texts. *TESL-EJ*, 6(2). Retrieved from <http://tesl-ej.org/ej01/a.1.html>
- Nakabayashi, K. (2008). Teacher training and self-development for EFL teachers. *Toyodaigaku Ningengaka Sogokenkyu Kenkyujyo Kiyō* 8, 13-35.
- Nakamura, Y. (2004). A comparison of holistic and analytic scoring methods in the assessment of writing. *The Interface Between Interlanguage, Pragmatics and Assessment: Proceedings of the 3rd Annual JALT Pan-SIG Conference*. Retrieved from <https://jalt.org/pansig/2004/HTML/Nakamura.htm>
- Nelson, G. L., & Murphy, J. M. (1992). An L2 writing group: Task and social dimensions. *Journal of Second Language Writing*, 1(3), 171-193.
- Nassaji, H. (1999). Towards integrating form-focused instruction and communicative interaction in the second language classroom: Some pedagogical possibilities. *The Canadian Modern Language Review*, 55, 385-402.
- Noles, K. A. (2001). New orientation in language learning motivation: Towards a model of intrinsic, extrinsic, and integrative orientations and motivation. In Z. Dornyei & R. Schmidt (Eds.), *Motivation and Second Language Acquisition* (pp. 43-68). National Foreign Languages Center.

- Noels, K., Pelletier, L. G., Clement, R., & Vallerand, R. J. (2000). Why are you learning a second language? Motivational orientations and self-determination theory. *Language Learning*, 50/1, 57-85.
- Norris, R. (2004). Some thoughts on classroom management problems faced by foreign teachers at Japanese Universities. *Bulletin of Fukuoka International University*, No. 12. Retrieved from <http://www2.gol.com/users/norris/articles/classman2.html>
- Norris, J. M. & Ortega, L. (2009). Towards an organic approach to investigation of CAF in instructed SLA: The case of complexity. *Applied Linguistics*, 30(4), 553-578.
- O'Donnell, A. M. & King, A. (1999). *Cognitive perspectives on peer learning*. Mahwah, NJ: Erlbaum.
- Oller, J. W., Hudson, A., J., & Liu, P., F. (1977). Attitudes and attained proficiency in ESL: A sociolinguistic study of native speakers of Chinese in the United States, *Language Learning*, 27, 1-27.
- Olvis, M., & Li, C. (2006). Understanding stressors of international students in higher education: What college counselors and personnel need to know. *Journal of Instructional Psychology*, 33, 217-222.
- Onozawa, C. (2010). A study of the process writing approach: A suggestions for an eclectic writing approach. 共愛学園前橋国際大学論集, 10, 154-163.
- Ortega, L. (2003). Syntactic complexity measures and their relationship to L2 proficiency: A research synthesis of college level L2 writing. *Applied Linguistics*, 24(3), 492-518.
- Ortega, L. (2009). *Understanding second language acquisition*. London: Hodder Education.
- Ortega, L. (2012). Epilogue: Exploring L2 writing – SLA interfaces. *Journal of Second Language Writing*, 21, 404-415.
- Oxford, R., & Shearin, J. (1994). Language learning motivation: Expanding the theoretical framework. *The Modern Language Journal*, 78(1), 12-28.
- Oztok, M., Zingaro, D., Brett, C., & Hewitt, J. (2013). Exploring asynchronous and synchronous tool use in online courses. *Computers & Education*, 60(1), 87-94.
- Pallotti, G. (2009). CAF: Defining, refining and differentiating constructs. *Applied Linguistics*, 30(4), 590-601
- Paulus, T. (1999). The effect of peer and teacher feedback on student writing. *Journal of Second Language Writing*, 8(3), 265-289.

- Peng, C. Y., Harwell, M., Liou, S. M., & Ehma, L. H. (2003). Advances in missing data methods and implications for educational research. Manuscript submitted for publication. Retrieved from <http://www.indiana.edu/~leeehman/missrerfin.pdf>
- Perkins, K. (2012). On the use of composition scoring techniques, objective measures, and objective tests to evaluate ESL writing ability. *TESOL Quarterly*, 17(4), 651-671.
- Pigott, J. (2010) Self-motivation in compulsory English classes in, Japan. In A. Stewart (Ed.), *JALT conference Proceedings* (pp. 540-550). Tokyo: JALT.
- Polat, B., & Kim, Y. (2013). Dynamics of complexity and accuracy: A case study of advanced untutored development. *Applied Linguistics*, 35(2), 184-207.
- Polio, C. (1997). Complexity, accuracy, and fluency in second language acquisition. *Language Learning*, 47(1), 101-143.
- Polio, C. (2003). Research on Second Language writing: An overview of what we investigate and how. In B. Kroll (Ed.), *Exploring the dynamics of second language writing* (pp.35-67). Cambridge: Cambridge University Press.
- Polio, C. (2013). The relevance of second language acquisition theory to the written error correction debate. *Journal of Second Language Writing*, 21(4), 375-389.
- Prichard, A., & Woollard, J. (2010). *Psychology for the classroom: Constructivism and social learning*. New York, NY: Routledge.
- Rahimi, M. (2015). The role of differences in L2 learners' retention of written corrective feedback. *Journal of Response to Writing*, 1(1), 19-48.
- Rahimpour, M., Mehrang, F., & Hosseini, P. (2011) Effects of task design on EFL learners' written language performance. *The Journal of ASIATEFL*, 8(2), 95-117.
- Razagifard, P., & Meshkinshahr, V. (2011). Corrective feedback in a computer-mediated context and the development of second language grammar. *Teaching English with Technology*, 11(2), 1-17.
- Redd, B. (2014). Game design and the zone of proximal development. *Of That*. Retrieved from, <http://www.ofthat.com/2012/12/game-design-and-zone-of-proximal.html>.
- Regional Education Laboratory. (2011) Measuring student engagement in the upper elementary through high school: A description of 21 instruments. *Issues & Answers*, No. 098. Retrieved from <http://files.eric.ed.gov/fulltext/ED514996.pdf>
- Reid, J. (1993). *Teaching ESL writing*. Englewood Cliffs, NJ: Regents/Prentice Hall.

- Rhalmi, M. (2009). *The direct method*. Retrieved from <http://www.myenglishpages.com/blog/the-direct-method/>
- Richard-Amato, P. A. (1983). ESL in Colorado's Jefferson County schools. In J. Oller, Jr. & P. Richard-Amato (Eds.), *Methods that work* (pp. 393–413). Rowley, MA: Newbury House.
- Robinson, P (1995). Task complexity and second language narrative discourse. *Language Learning*, 45(1), 99-140.
- Robinson, P. (2001). Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied Linguistics*, 22(1), 27-57.
- Robinson, P. (2003). The cognition hypothesis, task design, and adult task-based learning. *Second Language Learning*, 21(2), 45-105.
- Robinson, P. (2007). Task complexity, theory of mind, and intentional reasoning: Effects on L2 speech production, interaction, uptake and perceptions of task difficulty. *International Review of Applied Linguistics*, 45, 193-213.
- Robinson, P., Cadierno, T., & Shirai, Y. (2009). Time and motion :Measuring the effects of the conceptual demands of tasks on second language speech production. *Applied Linguistics*, 30(4), 533-554.
- Rocheleau, M. (2014). Harvard Professor wins \$5000,000 Minerva Prize. *The Boston Globe*. Retrieved from <http://www.bostonglobe.com/metro/2014/05/20/harvard-physics-professor-wins-minerva-prize-for-teaching-innovation/efgomXz8ejaq28V5RhaRbJ/story.html>
- Russell, V. (2014). A closer look at the output hypothesis: The effect of pushed output on noticing and inductive learning of the Spanish future tense. *Foreign Language Annals*, 47(1) 25-47.
- Ryan, S. (2009). Self and identity in L2 motivation in Japan: The ideal L2 self and Japanese learners of English. In: Z. Dornyei & E. Ushioda (Eds.), *Motivation, Language Identity and the L2 Self* (pp. 120-143). Bristol: Multilingual Matters.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Sadler, R. (2012). Text analyzers – readability. *The TESL Reading & Writing Forum*, (topic 991.0). Retrieved from <http://www.eslweb.org/resources/index.php?topic=991.0>
- Safia, A., Mala, T. (2012), Ascertaining the More Knowledgeable Other among peers in collaborative e-learning environment. *IEEE-Fourth International Conference on Advanced Computing*, ICoAC 2012 MIT, Anna University, Chennai. doi:10.1109/ICoAC.2012.6416852

- Sasaki, M. (2011). Effects of varying lengths of study-abroad experiences on Japanese EFL students writing ability and motivation: A longitudinal study. *Journal of English to Speakers of Other Languages*, 45(1), 81-105.
- Sato, K., & Kleinsasser, R. C. (1999). Communicative language teaching (CLT): Practical understandings. *The Modern Language Journal*, 89(4), 494-517.
- Schinke-Llano, L. (1993). On the value of a Vygotskian framework for SLA theory and research. *Language Learning*, 43, 121-129.
- Schmidt, R. W. (1983). Interaction, acculturation, and the acquisition of communicative competence. In N. Wolfson & E. Judd (Eds.), *Sociolinguistics and Language Acquisition* (pp. 137-174). Rowley, MA: Newberry House.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11, 129-158.
- Schmidt, R. W., & Crookes, G. (1991). Motivation: Reopening the research agenda. *Language Learning*, 41(4), 469-512.
- Schmidt, R. W., & Frota, S. (1986). Developing basic conversational ability in a second language: A case study of an adult learner of Portuguese. In R. R. Day (Ed.), *Talking to learn: Conversation in second language acquisition* (pp. 237-322). Rowley, MA: Newberry House.
- Seeroi, K. (2012). Why are the Japanese so bad at English? *Japan Today*. Retrieved from <http://www.japantoday.com/category/opinions/view/why-are-japanese-so-bad-at-english>
- Shernoff, D. J., Csikszentmihalyi, M., Schinder, B., & Shernoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly*, 18(2), 158-176.
- Shute, V. J. (2007). Focus on formative feedback. *Educational Testing Service Research Report*. Retrieved from <https://www.ets.org/Media/Research/pdf/RR-07-11.pdf>
- Silva, T. (1990). Second language composition construction: Developments, issues, and directions in ESL. In B. Kroll (Ed.), *Second language writing: Insights for the classroom* (pp. 11-23). Cambridge: Cambridge Press.
- Silva T. (1993). Toward an understanding of the distinct nature of L2 writing: The ESL research and its implications. *TESOL Quarterly*, 27(4), 87, 111.
- Silva, T. (2005). From the working class to the writing class: A second generation American teaches second language composition. In L. L. Blanton & B. Kroll (Eds.), *ESL composition tales* (pp. 50-82). Ann Arbor: University of Michigan Press.



- Skehan, P. (1989). *Individual differences in second language learning*. London: Edward Arnold.
- Skehan, P. (1998). *A cognitive approach to language learning*. Oxford: Oxford University Press.
- Skehan, P. (2003). Task-based instruction. *Language Teaching*, 36, 1-14.
- Skehan, P. (2009). Modeling second language performance: Integrating complexity, accuracy, fluency, and lexis. *Applied Linguistics*, 30(4), 510-532.
- Skehan, P., & Foster, P. (1997). Task type and task processing conditions as influences on foreign language performance. *Language Teaching Research*, 1, 185-211.
- Skehan, P., & Foster, P. (1999). The influence of task structure and processing conditions on narrative retellings. *Language Learning*, 49(1), 93-120.
- Skinner, B. F. (1957). *Verbal Behavior*. New York, NY: Apple-Century Crofts.
- Smith, B. (2012). Coping with institutional regimes: Towards a Japanese CLT. *Polyglossia*, 23, 193-197. Retrieved from <http://r-cube.ritsumei.ac.jp/bitstream/10367/3957/1/15-Coping%20With%20Institutional%20Regimes.pdf>
- Smith, K. A., Sheppard, S. D., Johnson, D. W., & Johnson, R. T. (2005). Pedagogies of engagement: Classroom-based practices. *Journal of Engineering Education*, 94(1), 87-101.
- Spolsky, B. (1989). *Conditions for second language learning*. Oxford: Oxford University Press.
- Stanley, J. (1992). Coaching student writers to be effective peer writers. *Journal of Second Language Writing*, 1(3), 217-223.
- Susser, B. (1994). Process approaches in ESL/EFL writing instruction. *Journal of Second Language Writing*, 3(1), 31-47.
- 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. (2007). *The output hypothesis: Its history and its future*. Retrieved from <http://www.celea.org.cn/2007/keynote/ppt/merrill%20swain.pdf>
- Swain, M., & S. Lapkin. (1991). Heritage language children in an English-French bilingual program. *Canadian Modern Language Review*. 47:4, 635-641.
- Swain, M., & Lapkin, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics*, 16, 371-391.

- Swain, M., & Lapkin, S. (1994). Additive bilingualism and French immersion education: The roles of language and proficiency and literacy. In A. Reynolds (Ed.), *Bilingualism, multiculturalism, and second language learning* (pp. 203-214). New York, NY: Psychology Press.
- Swain, M., & Lapkin, S. (2001). Focus on form through collaborative dialogue: Exploring task effects. In M. Bygate, P. Skehan & M. Swain (Eds.), *Researching Pedagogic Tasks: Second Language Learning, Teaching and Testing* (pp. 99-118). London: Longman.
- Swain, M., & Lapkin, S. (2002). Talking it through: Two French immersion learners' response to reformulation. *International Journal of Educational Research*, 37(3-4), 285-304.
- Taguchi, T., Magid, M., & Papi, M. (2009). The L2 motivational self system amongst Chinese, Japanese, and Iranian learners of English: a comparative study. In: Z. Dornyei & E. Ushioda (Eds.), *Motivation, Language Identity and the L2 Self* (pp. 66-97). Bristol: Multilingual Matters.
- Taylor, J. (2013). U. of C. has the best writers, according to Grammarly survey. *Redeye*. Retrieved [http://articles.redeyechicago.com/2013-05-22/news/39452526\\_1\\_stanford-university-duke-university-colleges](http://articles.redeyechicago.com/2013-05-22/news/39452526_1_stanford-university-duke-university-colleges)
- Tzu, A. B. M., & Ng, M. (2000). Do secondary writers benefit from peer comments? *Journal of Second Language Writing*, 9(2), 147-170.
- Tuzi, F. (2004). The impact of e-feedback on the revision of L2 writers in an academic writing course. *Computers and Composition*, 21, 217-235.
- Tyler, S. (2006). *Communities, livelihoods, and natural resources: Action research and policy change in Asia*. Ottawa: International Development Research Center. Retrieved from <http://www.idrc.ca/EN/Resources/Publications/openebooks/230-9/index.html>
- Uematsu, H. (2013). Improving intermediate learners' writing skills: Combining listening and writing in teaching English. *21<sup>st</sup> Century Education Forum*, 8, 39-44.
- Ueno, M. (2010). *An Item Response Theory for Peer Assessment, Advances in Learning Processes*, M. B. Rosson (Ed.), DOI: 10.5772/7928
- Ushida, E. (2005). Computer The role of student' attitudes and motivation in second language learning in online classrooms. *Assisted Language Instruction Journal*, 23(1), 2. Retrieved from [https://calico.org/html/article\\_131.pdf](https://calico.org/html/article_131.pdf)
- Valentine, C. (2012). What's wrong with Japan's education? *Japan Today*. Retrieved from: <http://www.japantoday.com/category/opinions/view/whats-wrong-with-japanese-education>
- van Harmelen, M. (2008). Design trajectories: Four experiments in PLE implementation. *Interactive Learning Environments*, 16(1), 35-46.

- Van Gelderen, A., & Oostdam, R. (2004). Revision of form and meaning in learning to write comprehensible text. In L. Allal, L. Chanquoy & P. Largy (Eds.), *Revision of written language: Cognitive and instructional processes* (pp. 103–123). Dordrecht: Kluwer Academic Publishers
- Van Gelderen, A., & Oostdam, R. (2004). Does foreign language writing benefit from increased lexical fluency? Evidence from a classroom experiment. *Language Learning*, 61(1), 281-321.
- Vann, R. J. (1979). Oral and written syntactic relationships in second language learning. In C. Yorio, K. Perkins, & J. Schachter (Eds.), *On TESOL '79: The learner in focus* (pp. 322-329).
- Vercellotti, M. L. (2012). Complexity, accuracy, and fluency as properties of language performance: The development of the multiple subsystems over time and in relation to each other (Doctoral Dissertation). Retrieved from [http://d-scholarship.pitt.edu/12071/1/Vercellotti\\_CAF\\_v3.pdf](http://d-scholarship.pitt.edu/12071/1/Vercellotti_CAF_v3.pdf)
- Villa, O. S., & DeGuerrero, M. C. M. (1996). Peer revision in the L2 classroom: Social-cognitive activities, mediating strategies, and aspects of social behavior. *Journal of Second Language Writing*, 5(1), 51-75.
- Vygotsky, L. G. (1962). *Thinking and speaking*. Cambridge, MA: MIT press.
- Vygotsky, L. G. (1978). *Mind in society: The developmental of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wigfield, A., & Guthrie, J. T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology*, 89(3), 420-432.
- Wolfe-Quintero, K., Inagaki, S., & Kim, H. Y. (1998). *Second language development: Measures of fluency, accuracy & complexity*. Second Language Teaching and Curriculum Center, University of Hawaii Press.
- Wong, B. Y. L. (1999). Metacognition in writing. In R. Gallimore, et al. (Eds.), *Developing perspectives on children with high-incidence disabilities* (pp. 183-198). Mahwah, N.J.: Erlbaum.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology* 17, 89-100. Retrieved from <http://isites.harvard.edu/fs/docs/icb.topic862383.files/Wood1976.pdf>
- Yang, J., & Kim, T. (2011). The L2 motivational self system and perceptual learning styles of Chinese, Japanese, Korean and Swedish students. *English Teaching*, 66(1), 141-162.
- Yoon, H. (2008). More than a linguistic reference: The influence of corpus technology on L2 academic writing. *Language learning & Technology*, 12(2), 31-48.

- Yoon, H., & Harvela, A. (2004). ESL student attitudes towards corpus use in L2 writing. *Journal of Second Language Writing*, 13, 257-283.
- Yorozuna, R. (2008). Elementary school community: CELENET. *Hokkaido University of Education Repository*. Retrieved from <http://s-ir.sap.hokkyodai.ac.jp/dspace/bitstream/123456789/1055/1/yorozuya-1.pdf>
- Yoshida, K. (2013). Reconsidering Japan's English education based on the principles of plurilingualism. *Selected papers from the Twenty-second International Symposium on English Teaching English Teacher's Association*. 121-129, Republic of China: Taipei.
- Youmiuri Shimbun. (2013). University students remain passive learners. *Education in Japan Community Blog*. Retrieved from <https://educationinjapan.wordpress.com/college-entrance-angst/japan-times-univ-students-remain-passive-learners/>
- Zeping H. (2012). The effects of lexical input in second language writing: A corpus-informed approach. *TESL Reporter*, 45(1), 1-16.
- Zhang, S. (1995). Reexamining the affective advantage of peer feedback in the ESL writing class. *Journal of Second Language Writing*, 4(3), 209-222.
- Zaho, C., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, 45(2) 115-138.

## **APPENDICES**

## Appendix A: 2014 JALT CALL Workshop Announcement

CALL-Plus Workshop 2014, Saturday, November 8

Location: Sapporo Gakuin University, Building A, Room A-201, Ebetsu, Hokkaido

Schedule:

Registration opens 9:30 am, Workshops 10-12am,

Keynote Presentation 1-2pm, Concurrent Presentations: 2-5pm,

Networking Party 5:30-7:30pm

Timetable: [Link to latest timetable](#)

Fee: 500 yen, JALT Members free.

Website: <http://englishforum.sgu.ac.jp/callworkshop/>

CALL-Plus refers to all types of blended learning, where students and teachers employ face-to-face teaching for the majority of activities and incorporate online activities to support and extend the learning. With blended learning, a 24-hour learning community is possible.

Keynote Presentation: Unleashing Potential! 可能性を引き出す:

Changing Students' Attitudes Towards English Through Teacher Collaboration

教員のコラボレーションを通して学生の英語に対する姿勢を変える

Keynote Abstract: New data shows that almost 43% of high school students in Hokkaido do not understand what is being taught to them during English class. Furthermore, over 53% of high school students in Hokkaido dislike learning English. This presentation will look at addressing the problem by outlining a course made by using a fresh approach to teacher collaboration, which strikes a balance between teacher independence and teacher interdependence. This presentation will look at the practicalities of designing a university course in such a way, as well as the advantages and disadvantages for both the students and the teachers involved.

新しいデータは、北海道の高校生の約43%が英語の授業で教えられている内容を理解出来ていないということを示唆している。さらに、53%を超える北海道の高校生が英語を学ぶのが嫌いであると示している。このプレゼンテーションは、教員のコラボレーションに対して教員の主体性と相互依存のバランスを図るという斬新なアプローチを用いることでコースの概略を述べて考察している。また、このような方法で大学のコースの設定の実用性と、関係する学生と教員の両者の長所や短所にも同様に考察している。

Presenters: Haruhiko Tsuru, Peter Schinckel, Helen Takahashi, Kate Sato, and Matt Cotter; faculty of Sapporo Gakuin University.

Contact Persons: Don Hinkelman (JALT) [hinkel@sgu.ac.jp](mailto:hinkel@sgu.ac.jp) and Lisa Mizushima (JACET) [lisa@sgu.ac.jp](mailto:lisa@sgu.ac.jp)

## Appendix B: Class Schedule for the Computer Mediated Writing Course

### Syllabus for ESL Computer Mediated Peer Review/Evaluation Writing Course

Session #	Date	Activity
1	9/30(class/Mon) Online writing due 10/6	Orientation - Writing Test 1 (in class). Do reading and submit Writing 1 by midnight 10/6(Tue).
2	10/7 (class/Mon) Online writing due 10/13	Peer reviews and re-writing of Writing 1 (Corporal Punishment) Do reading and submit Writing 2 by midnight 10/13(Tue).
3	10/28 (class/Mon) Online writing due 11/3	Peer reviews and re-writing of Writing 2 (fight against drugs) Do reading and submit Writing 3 by midnight 11/3(Tue).
4	11/11(class/Mon) Online writing due 11/7	Peer reviews and re-writing of Writing 3 (housewives or career women) Do reading and submit Writing 1 by midnight 11/7(Tue).
5	11/25(class/Mon) Online writing due 12/1	Peer reviews and re-writing of Writing 4 (prison life) Do reading and submit Writing 1 by midnight 12/1(Tue).
6	12/2(class/Mon) Online writing due 12/8	Peer reviews and re-writing of Writing 5 (same sex marriage) Do reading and submit Writing 1 by midnight 12/8(Tue).
7	12/9(class/Mon) Online writing due 2/15	Peer reviews and re-writing of Writing 6 (cloning) Do reading and submit Writing 1 by midnight 12/15(Tue).
8	12/16(class/Mon) Online writing due 12/22	Peer reviews and re-writing of Writing 7 (cloning 2 - revision) Do reading and submit Writing 1 by midnight 12/22(Tue).
9	12/23(class/Mon) Online writing due 12/29	Peer reviews and re-writing of Writing 8 (Taiji dolphin fishing) Do reading and submit Writing 1 by midnight 12/29(Tue).
10	1/20(class/Mon) Online writing due 1/26	Peer reviews and re-writing of Writing 9 (bioinformatics) Do reading and submit Writing 1 by midnight 1/26(Tue). Writing Test 2 (in class)
11	1/27-2/02	Essay Writing Practice (65 minutes – all you can write) Done in class, 1/27
12	2/3(class)	Final Exam - Essay Writing 1 (65 minutes – all you can write) Done in class, 2/3

Note: Actual attendance = (78 - absentees).

## Appendix C: Example of Guided Reading

### **Police are to investigate the widow of a British man who died after committing assisted suicide in Switzerland on Monday.**

Reginald Crew suffered motor neurone disease for four years and made his way to Switzerland on Monday, where assisted suicide is not legalised but is widely seen as a humane act. Swiss politician has denounced the practice of travelling abroad to be medically helped to die, fearing Switzerland will become a destination for so-called "death tourism". With his wife by his side, 70-year-old Mr Crew planned to take a lethal barbiturate, which is not illegal as long as he drank it himself. Mr Crew told the BBC before his death: "I don't want to go on living like this. I have had enough." Helping someone to commit suicide is illegal in Britain, despite a number of legal challenges.

### **What do you think about the practice? Should British laws on assisted suicide be relaxed? Is it ever justified to help someone to die? Readers' Reactions:**

I had to watch my father die of MND. His last words were "give me a gun so I can die". Then, 3 years later, I watched my mum die of cancer, a long painful death. She had asked my family to help her die but we never had the guts to do so. However, I feel that if a person wishes to be allowed to die on their terms then we should respect their wishes. I have a living will saying this and hope somebody listens to me and allows me to die the death of my choice. If that is against the laws of God and the state I am sorry. Maybe I am being selfish and stupid, but I thought God was a forgiving and compassionate God.

*Shirlieann Chalmers, USA / Scotland*

I personally believe that when one comes to a stage of no cure and quality of life starts diminishing rapidly then if one wishes to die should be allowed to do so. In the same time some other factors needs to be considered as well. Often a seriously ill person wants to die because s/he does not want to a burden to his/her carers.

*Sibani Roy, North Wales. UK*

We make choices in our lives, whether or not to have children, whether or not to believe in God whether or not to die when the time comes should be included in that equation. It would always remain a personal decision. Euthanasia is and will always be strongly debated but the choice should be there for those who are of sound mind but know that their life will shortly be at an end. Why should we as human beings be forced to live the rest of our days in excruciating pain when we would not wish it on any much loved pet? My condolences go to Mrs Crew.

*Georgina Lawrence, England*

As a parent of a severely handicapped son, only now I appreciate that there is substantial value and potential in people's lives. Therefore, if we allow even one step along this very dangerous path, what message does that send to any of our disabled colleagues?

*Martin, UK*

Life is a gift from God. I believe we are all created in the image and likeness of God and have no right to end someone's life. If we have a quality or pain threshold in a life on which we base whether someone is entitled to die, we have seriously failed as human beings.

*Sean O'Connor, England*



## Appendix D: Output for L2 Syntactic Complexity Analyzer

### ***Syntactic structures***

Word count (W)  
Sentence (S)  
Verb phrase (VP)  
Clause (C)  
T-unit (T)  
Dependent clause (DC)  
Complex T-unit (CT)  
Coordinate phrase (CP)  
Complex nominal (CN)

### ***Syntactic complexity indices***

Mean length of sentence (MLS)  
Mean length of T-unit (MLT)  
Mean length of clause (MLC)  
Clause per sentence (C/S)  
Verb phrase per T-unit (VP/T)  
Clause per T-unit (C/T)  
Dependent clause per clause (DC/C)  
Dependent clause per T-unit (DC/T)  
T-unit per sentence (T/S)  
Complex T-unit ratio (CT/T)  
Coordinate phrase per T-unit (CP/T)  
Coordinate phrase per clause (CP/C)  
Complex nominal per T-unit (CN/T)  
Complex nominal per clause (CN/C)

## Appendix E: Output for Grammarly.com

Keep at it, Ronald You still have room for improvement (don't we all?) When you are reviewing your work, pay close attention to Contextual Spelling and Grammar errors.	SCORE <b>33</b> ERRORS <b>13</b> PLAGIARISM <b>0%</b>	
<b>Contextual Spelling</b>	<b>6</b>	
Misspelled Words	6	
<b>Grammar</b>	<b>3</b>	
Faulty Subject Verb Agreement	2	
Incorrect Noun Number	1	
<b>Punctuation</b>	<b>2</b>	
Comma Misuse within Clause	2	
<b>Sentence Structure</b>	<b>0</b>	No errors
<b>Style</b>	<b>2</b>	
Inappropriate Colloquialisms	1	
Wordy Sentence	1	
<b>Vocabulary Use</b>	<b>0</b>	

**Download detailed report**

## Appendix F: Input Screen for Readability-Score.com

# Readability-Score.com

Paste or type your text here to see its readability on the right. HTML will be ignored. Results update as you type.

### Reading Ease

A higher score indicates easier readability; scores usually range between 0 and 100.

Readability Formula	Score
<u>Flesch-Kincaid Reading Ease</u>	–
Grade Levels	

A grade level (based on the USA education system) is equivalent to the number of years of education a person has had. Scores over 22 should generally be taken to mean graduate level text.

Readability Formula	Grade
<u>Flesch-Kincaid Grade Level</u>	–
<u>Gunning-Fog Score</u>	–
<u>Coleman-Liau Index</u>	–
<u>SMOG Index</u>	–
<u>Automated Readability Index</u>	–
<b>Average Grade Level</b>	–
Text Statistics	

Character Count	–
Syllable Count	–
Word Count	–
Sentence Count	–
Characters per Word	–
Syllables per Word	–
Words per Sentence	–

## Appendix G: Course Rubric for Peer Review and Evaluation

### RUBRIC FOR PEER EVALUATION AND COMMENTS:

- a. Grammatical correctness (5) (1- very poor, 2 - poor, 3 - average, 4 - good, 5 - very good)
- b. Discourse and Passage structure (5) (1- very poor, 2 - poor, 3 - average, 4 - good, 5 - very good)
- c. Content (Impressiveness / Persuasiveness) (5) (1- very poor, 2 - poor, 3 - average, 4 - good, 5 - very good)

### ②Comments and Impressions

- a. Post your comments on errors and incomprehensible parts of your group members' writings in Japanese.
- b. Post your impressions on the content of the writings

Start with A: he is tallest → the tallest となり, the が必要だと思います。

B: 私も同じ意見です／私は反対の意見です。しかし, ○○の部分がとても説得力があり, 賛成派にも一理あると思いました。

## **Appendix H: Instructions for Extended Essay Writing**

### Instructions for the practice extended essay

#### Whaling

Japan is one of the countries which captures whales to eat them. However some countries in Europe and in the southern hemisphere, like Australia, express strong objections to the custom. What do you think about whaling? Should it be prohibited or not? Make a full-page essay to present your idea.

### Instructions for the final extended essay

#### Introduction of foreign language teaching in elementary school

English education in elementary school started in 2011. It is also publicized that a new plan to promote early English education is going to be executed in 2020. However, serious discussions have been made whether English teaching in elementary school will lead to a better result. What is your opinion? Do you think English should be taught in elementary school? Make a full page essay. You have to make clear whether you agree or disagree to further introduction of English teaching in elementary school.

## Appendix I: Rubric Used by the Expert Readers for Holistic Scoring

### RUBRIC

	LEVEL	Spread	Score	Max/Min
Content	Excellent to Very Good Good to Average Fair to Poor Very Poor	30-27 26-22 21-17 16-13		30/13
Organization	Excellent to Very Good Good to Average Fair to Poor Very Poor	20-18 17-14 13-10 9-7		22/7
Vocabulary	Excellent to Very Good Good to Average Fair to Poor Very Poor	20-18 17-14 13-10 9-7		20/7
Language Use	Excellent to Very Good Good to Average Fair to Poor Very Poor	25-22 21-18 17-11 10-5		25/5
		TOTAL		

\*Using this rubric will result in Total Scores between 32 and 95 points.

\*\*The rubric is 'weighted' to avoid scores below 32.

\*\*\*In terms of Levels:

A = Excellent to Very Good

B = Good to Average

C = Fair to Poor

D = Very Poor

## Appendix J: Jacobs et al. Rubric

<b>ESL COMPOSITION PROFILE</b>				
STUDENT		DATE		TOPIC
<b>SCORE</b>	<b>LEVEL</b>	<b>CRITERIA</b>	<b>COMMENTS</b>	
<b>CONTENT</b>	30-27	EXCELLENT TO VERY GOOD: knowledgeable • substantive • thorough development of thesis • relevant to assigned topic		
	26-22	GOOD TO AVERAGE: some knowledge of subject • adequate range • limited development of thesis • mostly relevant to topic, but lacks detail		
	21-17	FAIR TO POOR: limited knowledge of subject • little substance • inadequate development of topic		
	16-13	VERY POOR: does not show knowledge of subject • non-substantive • not pertinent • OR not enough to evaluate		
<b>ORGANIZATION</b>	20-18	EXCELLENT TO VERY GOOD: fluent expression • ideas clearly stated/ supported • succinct • well-organized • logical sequencing • cohesive		
	17-14	GOOD TO AVERAGE: somewhat choppy • loosely organized but main ideas stand out • limited support • logical but incomplete sequencing		
	13-10	FAIR TO POOR: non-fluent • ideas confused or disconnected • lacks logical sequencing and development		
	9-7	VERY POOR: does not communicate • no organization • OR not enough to evaluate		
<b>VOCABULARY</b>	20-18	EXCELLENT TO VERY GOOD: sophisticated range • effective word/idiom choice and usage • word form mastery • appropriate register		
	17-14	GOOD TO AVERAGE: adequate range • occasional errors of word/idiom form, choice, usage <i>but meaning not obscured</i>		
	13-10	FAIR TO POOR: limited range • frequent errors of word/idiom form, choice, usage • <i>meaning confused or obscured</i>		
	9-7	VERY POOR: essentially translation • little knowledge of English vocabulary, idioms, word form • OR not enough to evaluate		
<b>LANGUAGE USE</b>	25-22	EXCELLENT TO VERY GOOD: effective complex constructions • few errors of agreement, tense, number, word order/function, articles, pronouns, prepositions		
	21-18	GOOD TO AVERAGE: effective but simple constructions • minor problems in complex constructions • several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions <i>but meaning seldom obscured</i>		
	17-11	FAIR TO POOR: major problems in simple/complex constructions • frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions • <i>meaning confused or obscured</i>		
	10-5	VERY POOR: virtually no mastery of sentence construction rules • dominated by errors • does not communicate • OR not enough to evaluate		
<b>MECHANICS</b>	5	EXCELLENT TO VERY GOOD: demonstrates mastery of conventions • few errors of spelling, punctuation, capitalization, paragraphing		
	4	GOOD TO AVERAGE: occasional errors of spelling, punctuation, capitalization, paragraphing <i>but meaning not obscured</i>		
	3	FAIR TO POOR: frequent errors of spelling, punctuation, capitalization, paragraphing • poor handwriting • <i>meaning confused or obscured</i>		
	2	VERY POOR: no mastery of conventions • dominated by errors of spelling, punctuation, capitalization, paragraphing • handwriting illegible • OR not enough to evaluate		
<b>TOTAL SCORE</b>		<b>READER</b>	<b>COMMENTS</b>	

## **Appendix K: End of Course Survey (Motivation Survey)**

This is a survey for our English writing class. Please using the following scale mark the answer that most closely reflects your feeling towards the statement:

1) Strongly Disagree, 2) Disagree 3) Neither Agree nor Disagree 4) Agree 5) Strongly Agree

### **Attitudes Toward the Course**

Q1 私はもっと英語の学習がしたい。

I want to study English more.

Q2 私は英語の学習が好きだ。

I like to study English

Q3 英語は好きな教科のひとつである。

English is one of the subjects I like.

Q4 英語の学習は長時間続けても飽きない。

Even if English study goes on for a long time, I never feel fed up.

Q5 私は先生を喜ばせるために、英語の学習を頑張りたい。

I want to work hard in English lessons to make my teacher happy.

Q6 英語の学習は難しくも易しくもないので、楽しめる。

English study is neither too hard nor too easy, so I can enjoy it.

Q7 私は英語の以外の科目の学習に時間を取りたい。

I would rather spend time studying subjects other than English.

Q8 私にとって、英語を学ぶことは重荷である。

For me, English is a heavy burden.

Q9 英語の学習で、将来役に立つことを学んでいると思う。

In studying English, I think that we are learning things that will be useful in the future.

### **Linguistic Self-Confidence**

Q10 私は自分の英語力が伸びていると感じている。

I feel that I am making progress in my English.



Q11 私は英語の学習でよい評価がもらえると思う。

I believe that I will receive good grades in English this semester.

Q12 私は英語の学習で成功感を経験している。

I feel I have experienced success in my English studies.

Q13 私はいつか英語が話せるようになると思っている。

I am sure that I will be able to speak English someday.

Q14英語の学習で、私は何をどのようにするのかをほとんど理解している。

I understand what to do and how to do when I study English.

Q15 私は英語を学ぶことが得意である。

I am doing well at learning English.

Q16 私は自分の英語力に不安がある。

I am worried about my ability in English.

## **L2 Classroom Anxiety**

Q17 私は英語の学習で、間違いを犯さないかとても心配である。

I get very worried if I make mistakes in English.

Q18 私は他の教科よりも英語の学習の方がより緊張すると思う。

I feel more nervous when I study English than when I study other languages.