Gender Differences in Taiwan Business Writing Errors

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This study demonstrates the ease with which computers can be integrated into the writing class and how that integration can play a role in helping a teacher achieve a deeper understanding of his/her students' abilities and progress. In this case, I was able to examine the differences between males and females in the same classes, using identical software and receiving the same type of computer generated error feedback.

Analysis of errors for each assignment reveals that males and females did have differing rates of errors. Overall, male students scored higher error rates on 71.5 percent of the error types measured. Female students' errors were higher on 28.5 percent of the error types. On the most common errors, females consistently scored lower error rates than their male counterparts. Trend analysis and complete listing of error types and the differences between groups is included.

Introduction

This study is a follow-up on previous studies the author, collaborators and other researchers in Taiwan (Liou, 1993a, 1993b; Warden & Chen, 1995) have conducted on the impact of computer generated error feedback on Taiwan EFL writing students. Specifically, the differences between males and females using the same software and receiving the same type of feedback in a business English writing class. Simultaneously, this study demonstrates the ease with which computers can be integrated into the writing class and how that integration can play a role in helping a teacher achieve a deeper understanding of his/her students' progress.

Gender Differences

Researchers have found that gender can have a significant impact on how students learn a language. For example, Oxford et. al. (1993) reported that females scored higher means than the males in a Japanese language class. Numerous researchers have focused on the differences between the genders in the use of language learning strategies. A common finding is that female students employ more learning strategies and/or employ strategies more effectively (Nyikos, 1990, Erhman and Oxford, 1989, Oxford, et. Al., 1988).

Inside Taiwan, this research has been continued with studies by Yang (1993) and Sy (1994 and 1995). These studies examined large numbers of EFL students, sample sizes of 250 to 500, to investigate differences in social, cognitive and compensation strategies, just to name a few. If these researchers are all pointing in the right direction, with the assertion that gender impacts the use of language learning strategies, then by implication, performance is also impacted since the use of learning strategies tends to characterize a successful language learner (Van & Abraham, 1990).

Hard evidence of any differences, especially in the specific L2 environment, can be useful for further development of linguistic theory as well as applicable in today's EFL classroom. As Sy (1995) points out, "A longitudinal study, together with quantitative and qualitative analyses of data, may also shed light on sex differences and Language Learning Strategies."

Computers & Student Writing

The specific application of computers for finding errors in students' writing has been investigated in numerous studies. Observed benefits and advantages of such systems include, but may not be limited to:

1) Analysis of writing can help to improve students knowledge of conventions in such areas as spelling, punctuation and grammar (Wresch, 1988).

2)Such use of software can encourage students to be more independent of the instructor (Wresch, 1988).

3)Students prefer critical feedback that is impartial, such as that produced by a computer, as opposed to feedback from instructors that is often seen as biased or unfair (Frase et al., 1985).

4)Students improve their editing and writing skills significantly more than other students not using computer based feedback systems (Reid, 1986).

Method

Subjects

For this study, three sections of intact business English writing, from Feng-Chia University, located in central Taiwan, were used. The class was mandatory for all second year international trade department students (see Table 1). The class sizes were large, with the total number of students turning in assignments ranging from 165 to 201.

All students had completed required courses in English for the previous six years, including University freshman English courses in writing and conversation (the later being taught by native speakers from the U.S). Nearly all students had attended high school and taken the university entrance exam, which includes sections on English. Five students had transferred from two-year colleges through the university transfer exam. The uniformity of the students is common in Asian classrooms, as university track programs are highly structured and tend to be based on previous schools attended and exam performance. While the students came from all parts of Taiwan, their average age was 20. There was no reason to suspect that the English training or skill levels differed between the sexes, based on any past academic opportunities.

Table 1 Subjects of study

Class	Students	Male	Percent	Female	Percent
A	53	28	52.8302	25	47.1698
B	72	30	41.6667	42	58.3333
C	76	26	34.2105	50	65.7895
Total	201	84		117	

Computer Based Assignments

For this experiment, the author used of the QBL (Quick Business Letters) software. This system allows students to complete writing assignments on floppy disks on their own computers or school facilities. Custom created, for EFL students in Taiwan (Yao & Warden, 1996), the QBL system addresses problems often faced by EFL teachers in Taiwan who want to incorporate software into the writing class. The main features include:

Guiding students through the correct formatting of a business letter.

Complete program contained on a single floppy disk, included with manual written in Mandarin Chinese.

DOS based with advanced menu and mouse support, while staying completely compatible with older computers (supports IBM PC compatibles, i8086-Pentiums).

Low cost, approximately US$ 4 per disk, requiring no special computer labs or powerful machines.

1)The disks, one for each student, are then turned into the instructor, along with printouts of the completed assignment.

Error Correction Through QBL

Correction procedures normally used by the instructor are used on the hard copy while the floppy disk is used to download the

assignment. Students' files are then run through an automated correction system, QBL TOOLS (Warden & Chen, 1995), which prints the errors for each student. These printouts are then returned to the class (each student receiving one printout that lists his/her errors for that specific assignment). This printout is also accompanied by the teacher's comments and corrections placed on the original printout turned in along with the floppy disk. The computer correction finds 46 error types within the body of the students' letters.

This system includes a heavily modified version of the Grammatik (WordPerfect/Novel Corp.) parsing engine and database. Included are many expanded rules for common errors of Chinese students. The resulting program is then placed in a customized shell, written in Visual BASIC, which allows hundreds of students' files to be processed quickly by a single teacher. Additionally, this software combination supplies detailed information on error types, totals and progress of whole classes as well as individual students.

Through the academic year, five assignments were given that used the QBL system (see Table 2). Other writing assignments were given, but were not tracked with the QBL system because they used formats that were not conducive to such computer analysis, such as résumé and promotion.

Table 2 The assignments

Assignment 1	Assignment 2	Assignment 3	Assignment 4	Assignment 5
Application Letter	Inquiry Letter	Response Letter	Trade Negotiation Letter	Complaint Letter

Data Analysis

The application of computers in the correction of errors allows for the generation of large amounts of detailed data. For this experiment, I was mainly concerned with finding any significant differences between the male/female populations. The data from all three classes was pooled and then split into the male/female groups for the analysis.

General Findings

Analysis of errors for each assignment reveals that males and females did have differing rates of errors. Overall, male students scored higher error rates on 71.5 percent of the error types measured. Female students' errors were higher on 28.5 percent of the error types. On the most common errors, females consistently scored lower error rates than their male counterparts.

As in previous studies using the QBL TOOLS software, a general decline in errors was found across the five assignments, although attempting to describe a clear downward trend is difficult. This is because each assignment may have its own individual error profiles, and present students with differing levels of difficulty. Trend analysis of total mean errors found that female students show an overall steeper downward trend in error rate of -0.79 compared with the male rate of -0.29.

Statistical Findings

For detailed statistical analysis, two areas were examined. The first was the sum of all 46 errors types over the five assignments. The second was an analysis of the change in error rates, for each error type, within each of the five assignments. Any error types for which both groups scored zero were eliminated from the analysis.

Analysis of Totals

For the first part of the analysis, each error type was summed across all five assignments then divided by the number of students to obtain a mean rate of errors for each error type. The grand total across all assignments revealed a difference that is reinforced by other analysis. That difference is, in this experiment, that the female group consistently scored lower error rates than their male counterparts.

Seven of the error types were statistically significantly different between the two groups using a t-test assuming unequal variance and differing sample sizes (see Table 3). No error type was significantly lower for the male group.

Table 3 Differences between genders for each error type

| Total/students	Female	t value	Male	
Total	38.47009	2.4559*	42.95238	X
Adverb:	0.333333	1.2402	0.428571	X
Adjective:	0.247863	1.3576	0.154762	
Article:	0.358974	1.3438	0.47619	X
Capitalization:	3.435897	0.6229	3.595238	X
Colloquial:	0.068376	1.2038	0.119048	X
Comma Splice:	0.333333	0.4963	0.369048	X
Comparative:	0	1	0.011905	X
Conjunction:	0	1	0.011905	X
Custom:	6.324786	2.8958*	7.511905	X
Double Neg.:	0.025641	0.4197	0.035714	X
Incomplet Sen.:	0.495726	0.4080	0.440476	
Infinitive:	0.111111	0.2407	0.119048	X
Jargon:	0	1.744	0.035714	X
Long Sen.:	0.589744	0.5177	0.511905	
Noun Phrase:	3.025641	3.0232*	3.809524	X
Overstated:	0.179487	0.0459	0.178571	
Poss. Form:	0.376068	1.8109*	0.559524	X
Preposition:	0.068376	0.2213	0.059524	
Pron. Number:	0.367521	1.3886	0.25	
Pronoun Case:	0.290598	0.3054	0.309524	X
Punctuation:	2.564103	1.0984	3.154762	X
Ques. Usage:	0.478632	0.1102	0.452381	
Redundant:	0.076923	0.2128	0.083333	X
Rel. Pronoun:	0.051282	0.2751	0.059524	X
Repeated:	0.136752	0.8087	0.178571	X
Run-on:	0.017094	1.4205	0	
S/V Agreement:	2.213675	1.3175	2.452381	X
Sent. Variety:	2.076923	0.1786	2.047619	
Similar Words:	0.034188	0.5125	0.047619	X
Spelling:	8.948718	1.6591*	9.761905	X
Subordination:	0.213675	2.0759*	0.369048	X
Vague Adv.:	0.094017	1.6226	0.035714	
Verb Form:	0.512821	1.8128*	0.72619	X
Verb Object:	0.692308	0.4567	0.72619	X

* Statistically significantly different using t-test at the .05 level

X Females scored lower error rate

Analysis of Each Assignment

The next analysis, looking at each error type within each assignment, provided a more detailed understanding of the differences between the genders. Mean errors for each of the five assignments revealed significant differences between the genders in the second and fifth assignments(see Figure 1). For all statistical analysis of the error types between the five assignments, an LSD (lowest significant difference) test was used. Once again, at no time did the mean error rate of any assignment show the male group to score a lower error rate than the female group.

Figure 1 Differences between genders for each assignment
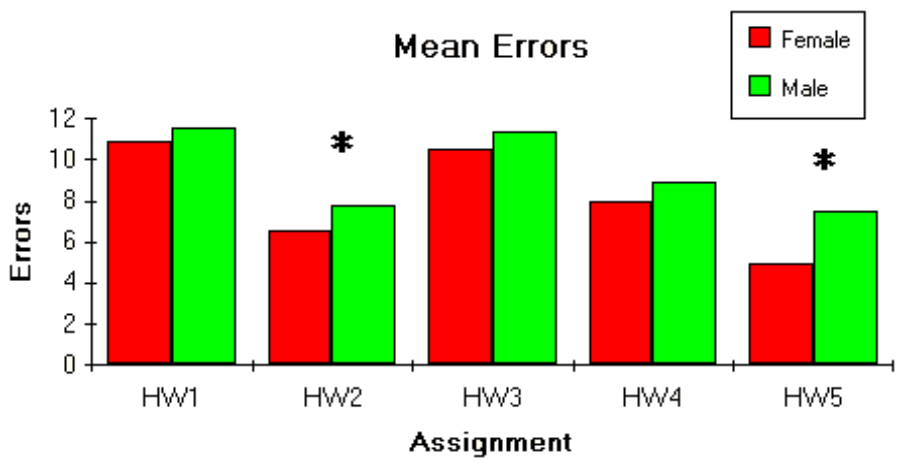
* Statistically significantly different using an LSD test at the .05 level

Applying an LSD test to each error type within each assignment revealed that as the number of homework assignments increased, the number of error types that showed significant difference between the genders increased. As in the analysis of the sum over all assignments, it was apparent that females exhibited lower overall error rates, although these rates did not often reach the 0.05 level of significance (see Table 4). Males scored numerically higher error rates in 58% of the error types. Seven specific error types were significantly different, in the females favor. No error type was significantly lower for the male group in any of the assignments.

Table 4 Error Types statistically significantly different from each assignment

Assignment 1	Assignment 2	Assignment 3	Assignment 4	Assignment 5
Custom	Custom			Punctuation
	Poss. Form			Spelling
				Verb Form
				Article

Conclusions

The results presented here do not actually test the application of computers in the EFL classroom, but instead give an example of how easily integration of computers can produce data which is potentially useful to the teacher. With medium level technology, software can produce a range of detailed data that can help teachers get a grip on their students, especially in large class settings. Modern computer based tools can give individual EFL teachers the chance to see how previous research and theory actually impacts their own students. The application of a computer system for completing assignments, gave me a window onto the very detailed error patterns of my students. Results clearly show that female students do consistently score lower error rates and show more improvement over time than do their male classmates.

Beyond the impact the computer can have on EFL classes, this study may point toward the need to include more specialized training of language learning skills to our male students. On the macro level, questions can be raised about the possibility of increased training for male EFL male students or even special classes.

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