

EFL Learners' Perceived Effects of a Web-based Writing Program in an English Composition Class

Chi-Yen Chiu ^{1*} Wei-Shi Wu ²

¹ Assistant Professor, Department of Applied Foreign Languages, National Formosa University

² Assistant Professor, Department of Applied Foreign Languages, National Formosa University

ABSTRACT

This study examined EFL learners' perceived effects of a web-based writing program known as *Criterion* from the college juniors enrolled in a particular course of intermediate English writing. The students were asked to respond to a questionnaire that surveyed their attitudes toward the use of *Criterion* in this class. It was found that about half of the participants agreed that *Criterion* was easy for them to use (54%, M = 3.5). A good number of students felt very stressful to see *the Timer* during their drafting process (78% , M=4.16). *Criterion* seemed to fulfill the role of a formative evaluation tool (Shermis & Burstein, 2003) in that 78% of the participants felt it helpful to use the function of *Trait Feedback Analysis* in *Criterion* (M = 4.18), and 76% of students revised their drafts according to the *Trait Feedback Analysis* (M = 3.98). Nonetheless, low percentage of the participants (28%) had trust in the scores rated by *Criterion*, and just fourteen students (30%) believed the scores given by *Criterion* were fair and adequate. The findings of this study had provided insights into the use of a web-based writing program in a pedagogical context of English as a foreign language where writing-as-process approach was adopted.

Keywords: Web-based Writing Program, *Criterion*, Writing-as-process approach



I. INTRODUCTION

Over the last two decades, computer technologies have advanced at such a rapid pace that there are now many possibilities to integrate new educational technologies into teaching English writing (Williams, 2005). Since 1960s, web-based writing programs such as *Criterion* are developed to assist writing instructors by providing scoring and feedback analysis on students' essays (Ware & Warschauer, 2006; Warschauer, 2010). *Criterion* comprises two complimentary educational technologies: *E-rater* and *Critique*. *E-rater* is an automatic grading system that assigns holistic scores to students' essays, while *Critique* is a suit of programs known as Trait Feedback Analysis that provide specific feedback or commentary on grammar, usage, mechanics, style, and organization (Burstein, Chodorow & Leacock, 2003).

Like other web-based writing programs, *Criterion* has been promoted to reduce the burden of writing instructors since it is quite a tedious job to provide feedback on students' writings (Warden & Chen, 1998). Nevertheless, researchers are still uncertain of the effects web-based writing programs might bring to the writing of second language learners (Attali, 2004; Chen, 1997; Grimes & Warschauer, 2010; Otoshi, 2005; Ware & Warschauer, 2006). As the developers of *Criterion* suggest, a web-based writing program can only be seen as a supplement, not a replacement of classroom instruction (Burstein, Chodorow & Leacock, 2003; Burstein & Marcu, 2003).

The purpose of this study was to investigate college students' perceived effects of a web-based writing program, *Criterion* in a particular course of Intermediate English Writing at a national university of science and technology. The participants used *Criterion* to write four essays in addition to another

multiple-draft essay assignment which received feedback from both the teacher and the peer. The investigators were interested in the students' perceived effects with respect to the following four aspects of *Criterion*: 1) program interface, 2) feedback analysis, 3) scoring analysis, and 4) subsidiary features.

II. LITERATURE REVIEW

Developed by ETS, *Criterion* is a web-based writing program that provides automatic feedback and score analysis to help learners improve their writing skills (Burstein, Chodorow & Leacock, 2003). With the help of *Criterion*, students are able to write in multiple drafts and submit each of their drafts for immediate scoring as well as feedback on grammar, usage, mechanics, style, and organization. They can also receive additional tips by using writing tools or resources such as error report and writer's handbook. Students' essays are stored in *Criterion*'s online portfolios so that the teacher can review the essays of each individual student, track the overall progress of the class, and manage his or her instruction.

As a well-known writing program, *Criterion* has already found its way into a growing number of schools in the United States and other countries such as Taiwan and Japan. *Criterion* comprises two ETS technologies: *E-rater* and *Critique*. The *E-rater* in *Criterion* is used to score every single essay draft for the learner, whereas the *Critique* does the feedback analysis without determining the score (Burstein, 2003). Although most writing programs were originally developed for summative evaluation, ETS claims *Criterion* a formative evaluation tool. According to Philips (2007), summative evaluation is mainly a one-time assessment that provides an accurate score on any essay submission of the learner; formative evaluation, however aims to provide immediate, detailed and specific feedback not only



about the levels but also the strengths and the weaknesses of the writings submitted.

The instructional efficacy of a computerized writing program increases when its role transforms from that of a summative evaluation into a formative tool (Shermis & Burstein, 2003). According to Taylor (2006), formative evaluation program has become the fastest growing testing industry in recent years. He makes a distinction between assessment *of* learning from assessment *for* learning. Assessment of learning is summative in nature because its aim is to provide final judgments on student writing; assessment for learning, however is formative because it provides feedback or remediation for learners to revise after identifying their own strengths and weaknesses in writing.

Attali (2004) evaluates the feedback and revision features of *Criterion* used by thousands of students from grades 6th to 12th across the United States. In his report, the majority of the students did not make good use of *Criterion*'s revision features but wrote just a single draft. For those who wrote more than one draft, they were claimed to be able to correct errors in that there was a significant decrease in the error rates from their first to final drafts. Other researchers find that computerized feedback can be helpful when it is used to facilitate the early drafting of students' revising process, but students would feel less help after they receive same or similar feedback in the subsequent drafts (Chen & Cheng, 2008; Yu & Yeh, 2003).

Herrington (2001) criticizes that web-based writing programs cannot recognize nuances in students' writing such as sarcasm, idioms, and clichés. Oladejo (2005) also argues that web-based writing programs can only detect errors on surface level but fail to examine larger issues on content or rhetorical aspects. In a survey study that involves 300 college students in Taiwan, Yang (2004) reports that the

feedback given by web-based writing programs is either too vague or inaccurate, and many students do not trust in the scores they receive from the computer. Chen and Cheng (2006) find that nearly 60% of the students in their study are dissatisfied with computer scoring because they find the scores are based on the quantity, not the quality of their writing.

III. METHODOLOGY

Context and Participants

The pedagogical context under investigation was an intermediate writing class (English Writing III) offered in the department of Applied Foreign Languages (AFL) at a national university of science and technology. The writing course was held in a computerized classroom with access to the Internet so that the web-based writing program of *Criterion* could be incorporated. The participants were 52 third-year AFL students enrolled in the class of intermediate English writing. It was their first time to use a web-based writing program to write essays in multiple drafts.

Data Selection

The data drawn from this project included: 1) course syllabus, 2) all the first and final submissions of the essays from the students, 3) computer ratings of the students' first and final submissions, 4) interviews with 12 students selected evenly at three levels (high, mid, low) of proficiency, and 5) a survey questionnaire. The focus of this paper was on the part of the survey questionnaire.

Procedure

A total of forty-four students filled out a questionnaire at the end of the semester, and there were eight absentees who did not participate in the survey. The questionnaire contained twenty three Likert-Scale items in which seventeen of them were reported in this paper. The Likert-Scale items were further organized into four categories: program



interface, feedback analysis, score analysis, and subsidiary features of *Criterion*.

IV. FINDINGS

TABLE 1 reports the learners' reactions towards the program interface of *Criterion*. Around half of the participants (54%) agreed that the writing program of *Criterion* was easy for them to use (M = 3.5) as there were twelve students maintaining a neutral position. 80% of the participants considered the speed of *Criterion* fast enough (M = 4.09). It seemed to be fairly beneficial for the students to use the functions

of *Make A Plan* (M = 3.59) and *Grammar Check* (M = 3.82) during their drafting process. A good number of students (78%) indicated that it was stressful for them to see *the Timer* in *Criterion* during the process of writing (M = 4.16). According to the investigators' observations, several students in this class chose to type their drafts on Microsoft Word and then pasted them to *Criterion* to prevent from seeing the Timer.

TABLE 1: Program Interface

Questionnaire Item/ (N=44)	SA/A	N	D/SD	Mean
1. <i>Criterion</i> is easy to for me to use.	25(54%)	12	7	3.5
2. The speed of <i>Criterion</i> is fast enough.	37(80%)	4	3	4.09
3. It is beneficial to use <i>Make A Plan</i> when I compose a draft.	31(67%)	8	5	3.59
4. It is beneficial to use <i>Grammar Check</i> before I submit a draft.	34(74%)	4	6	3.82
5. It is stressful to see <i>the Timer</i> during my drafting process.	36(78%)	6	2	4.16

Notes: SA (strongly agree) = 5; A (agree) = 4; N (neutral) = 3; D (disagree) = 2; SD (strongly disagree) = 1.

TABLE 2 examines the learners' perceived effects of the feedback analysis from *Criterion*. A high percentage of the participants (78%) indicated that it was helpful for them to use the functions in *Criterion's Trait Feedback Analysis* (M = 4.18). Nonetheless, lower percentage of students agreed that the feedback analysis was clear for them to follow (57%, M = 3.55) and that the feedback analysis provided suggestions which addressed the problems

in their writing (65%, M = 3.73). There were a good number of students (76%) indicating that they revised their drafts according to the feedback from *Trait Feedback Analysis* (M = 3.98). These evidences seemed to be in support of ETS's claim of *Criterion* as a formative evaluation tool which aimed to provide feedback and remediation for learners to make revisions.



TABLE 2: Feedback Analysis

Questionnaire Item/ (N=44)	SA/A	N	D/SD	Mean
6. It is helpful to use <i>Trait Feedback Analysis</i> after I submit a draft.	36(78%)	6	2	4.18
7. The feedback analysis of <i>Criterion</i> is clear for me to follow.	26(57%)	11	7	3.55
8. The feedback analysis of <i>Criterion</i> provides suggestions that address the problems in my writing.	30(65%)	9	5	3.73
9. I revise my drafts according to the <i>Trait Feedback Analysis</i> .	35(76%)	6	3	3.98

Notes: SA (strongly agree) = 5; A (agree) = 4; N (neutral) = 3; D (disagree) = 2; SD (strongly disagree) = 1.

As reported in TABLE 3, about half of the participants (54%) agreed that it was useful for them to check the scores from *Criterion* (M=3.64) and that the score analysis of *Criterion* could prepare them to write timed-writing exams taken on computer (50%, M=3.41). A slightly higher percentage of students (63%) indicated that the score analysis of *Criterion* motivated them to improve their writing (M=3.82). Interestingly, very low percentage of the participants

(28%) had trust in the scores rated by *Criterion* (M=2.86), and merely fourteen students (30%) believed that the scores given by *Criterion* were fair and adequate (M=3.07). The findings in this paper seemed to accord with those in Yang (2004) as well as Chen and Cheng (2006) who all reported that the score analysis of web-based writing programs did not appear to be so satisfactory to students.

TABLE 3: Score Analysis

Questionnaire Item/ (N=44)	SA/A	N	D/SD	Mean
13. It is useful to check my scores in <i>Criterion</i> .	25(54%)	15	4	3.64
14. The <i>Score Analysis</i> of <i>Criterion</i> motivates me to improve my writing.	29(63%)	11	4	3.82
15. The <i>Score Analysis</i> of <i>Criterion</i> can prepare me to write timed essays for exams taken on computer.	23(50%)	14	7	3.41
16. I have strong trust in the scores rated by <i>Criterion</i> .	13(28%)	15	16	2.86
17. The scores given by <i>Criterion</i> are fair and adequate.	14(30%)	20	10	3.07

Notes: SA (strongly agree) = 5; A (agree) = 4; N (neutral) = 3; D (disagree) = 2; SD (strongly disagree) = 1.

TABLE 4 shows the students' perspectives about the three subsidiary features of *Error Report*, *Progress Report*, and *Writer's Handbook*. In *Criterion*, *Error Report* is a statistical analysis of grammar which reports the number of errors in students' writings, whereas *Progress Report* statistically shows students' progress after they have

composed more than two essays. *Writer's Handbook* is a reference where learners can look for instructions and guidelines on sentence-level issues. Among the three subsidiary features, *Error Report* was viewed more favorable than the other two since thirty-six students (78%) considered it useful (M=3.91). Lower percentage of participants agreed that it was



beneficial to use the subsidiary features of *Progress Report* (46%) and *Writer's Handbook* (43%) in *Criterion*.

TABLE 4: Subsidiary Features

Questionnaire Item/ (N=44)	SA/A	N	D/SD	Mean
19. It is beneficial to use <i>Error Report</i> after I complete an essay.	36(78%)	5	3	3.91
20. It is beneficial to use <i>Progress Report</i> after I complete two essays.	21(46%)	20	3	3.5
21. It is beneficial to use <i>Writer's Handbook</i> .	20(43%)	20	4	3.39

Notes: SA (strongly agree) = 5; A (agree) = 4; N (neutral) = 3; D (disagree) = 2; SD (strongly disagree) = 1.

V. CONCLUSION

This paper had examined college students' perceived effects of a web-based writing program (*Criterion*) incorporated into an intermediate writing class. Overall, the students were satisfied with the program interface of *Criterion*; however, there were a good number of students indicating that it was quite stressful for them to see *the Timer* during the process of drafting. *Criterion* seemed to fulfill the role of a formative evaluation tool in that 78% of the participants felt it helpful to use the function of *Trait Feedback Analysis* in *Criterion* (M = 4.18), and 76%

of students revised their drafts according to the *Trait Feedback Analysis* (M = 3.98). Nonetheless, low percentage of the participants (28%) had trust in the scores rated by *Criterion*, and just fourteen students (30%) believed the scores given by *Criterion* were fair and adequate. Although the incorporation of a web-based writing program like *Criterion* into a writing-as-process curriculum could definitely reduce the teacher' workload and allow students to practice more multiple-draft essays, cautions must be made to examine how computerized feedback and scoring might affect learners' writing as well as their learning attitude.

REFERENCES

1. Attali, Y. (2004). *Exploring the feedback and revision features of Criterion*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
2. Burstein, J. (2003). The E-rater® Scoring Engine: Automated Essay Scoring with Natural Language Processing. In M. D. Shermis, & J. Burstein (Eds.), *Automated Essay Scoring: A Cross-Disciplinary Perspective* (pp. 113-122). Mahwah, NJ: Lawrence Erlbaum.
3. Burstein, J., Chodorow, M., & Leacock, C. (2003). Criterion: Online essay evaluation: An application for automated evaluation of student essays. *Proceedings of the Fifteenth Annual Conference on Innovative Application of Artificially Intelligence*, Acapulco, Mexico.
4. Burstein, J., & Marcu, D. (2003). Developing technology for automated evaluation of discourse structure in student essays. In M. D. Shermis & J. Burstein (Eds), *Automated essay scoring: A*



- cross-disciplinary perspective*. Hillsdale, NJ: Lawrence Erlbaum.
5. Chen, C. F., & Cheng, W. Y. (2006). The use of a computer-based writing program: Facilitation or frustration. *Proceedings of the 23rd International Conference on English Teaching and Learning in the Republic of China* (pp.96-111) Taipei: Kuan Tang.
 6. Chen, C. F., & Cheng, W. Y. (2008). Beyond the design of automated writing evaluation: Pedagogical practices and perceived learning effectiveness in EFL writing classes. *Language Learning & Technology*, 12(2), 94-112.
 7. Chen, J. (1997). Computer generated error feedback and writing process: A link. *TESL-EJ*, 2 (3). Retrieved November 6th, 2006 from: <http://www-writing.berkeley.edu/TESL-EJ/ej07/a1.html>
 8. Grimes, D., & Warschauer, M. (2010). Utility in a fallible tool: A multi-site case study of automated writing evaluation. *Journal of Technology, Language, and Assessment*, 8(6).
 9. Herrington, A. (2001). What happens when machines read our students' writing? *College English*, 63 (4), 480-499.
 10. Oladejo, J. (2005). *Automated evaluation in EFL composition: Do we have all the answers?* Paper presented at the conference of Teaching of Languages, Linguistics, and Literature (TELL) in Taipei, NKNU. April, 2005.
 11. Otsoshi, J. (2005). An analysis of the use of Criterion in a writing classroom in Japan. *The JALT CALL Journal*, 1(1), 30-38.
 12. Phillips, S. M. (2007). Automated essay scoring: A literature review. Retrieved November 26, 2008, from <http://www.saeec.ca/pdfs/036.pdf>
 13. Shermis, M. D., & Burstein, J. (2003). *Automated essay scoring: A cross-disciplinary perspective*. Mahwah, NJ: Lawrence Erlbaum.
 14. Taylor, A. R. (2006). A future in the process of arrival: Using computer technologies for the assessment of student learning. Retrieved Oct. 24th 2010 from <http://www.tasainstitute.com/029.pdf>
 15. Warden, C., & Chen, J. (1998). *Improving feedback while decreasing teacher burden in R.O.C. ESL business English writing classes*. Paper presented at Explorations in English for Professional Communication, Hong Kong: City University of Hong Kong, June, 1998.
 16. Ware, P., & Warschauer, M. (2006). Electronic feedback and second language writing. In Hyland, K. & Hyland, F. (Eds.), *Feedback in Second Language Writing: Contexts and issues*. New York: Cambridge University Press.
 17. Warschauer, M. (2010). Invited commentary: New tools for teaching writing. *Language Learning & Teaching*, 14(1), 3-8.
 18. Williams, J. (2005). *Teaching Writing in Second and Foreign Language Classrooms*. Boston: McGraw Hill
 19. Yang, N. D. (2004). Using MyAccess in EFL writing. *The proceedings of 2004 International Conference and Workshop on TEFL & Applied Linguistics* (pp. 550-564). Taipei, Ming Chuan University.
 20. Yu, Y. T., & Yeh, Y. L. (2003). Computerized feedback and bilingual concordancer for EFL college students' writing. *Proceedings of 2003 International Conference on English Teaching and Learning in Republic of China* (pp. 35-48). Taipei, Crane.



APPENDIX

Questionnaire

Instructions: Please circle the number that best describes how you feel about the use of *Criterion* writing program in this class.

(SD = Strongly Disagree ; D = Disagree ; N = Neutral ; A = Agree ; SA = Strongly Agree)

	SD	D	N	A	SA
1. <i>Criterion</i> is easy to for me to use.	1	2	3	4	5
2. The speed of <i>Criterion</i> is fast enough.	1	2	3	4	5
3. It is beneficial to use <i>Make A Plan</i> when I compose a draft.	1	2	3	4	5
4. It is beneficial to use <i>Grammar Check</i> before I submit a draft.	1	2	3	4	5
5. It is stressful to see <i>the Timer</i> during my drafting process.	1	2	3	4	5
6. It is helpful to use <i>Trait Feedback Analysis</i> after I submit a draft.	1	2	3	4	5
7. The feedback analysis of <i>Criterion</i> is clear for me to follow.	1	2	3	4	5
8. The feedback analysis of <i>Criterion</i> provides suggestions that address the problems in my writing.	1	2	3	4	5
9. I revise my drafts according to the <i>Trait Feedback Analysis</i> .	1	2	3	4	5
10. <i>Criterion</i> improves the language (including grammar and vocabulary) of my essays.	1	2	3	4	5
11. <i>Criterion</i> improves the organization of my essays.	1	2	3	4	5
12. <i>Criterion</i> improves the content of my essays.	1	2	3	4	5
13. It is useful to check my scores on <i>Criterion</i> .	1	2	3	4	5
14. The <i>Score Analysis</i> of <i>Criterion</i> motivates me to improve my writing.	1	2	3	4	5



15. The *Score Analysis of Criterion* can prepare me to write timed essays for exams taken on computer. 1 2 3 4 5
16. I have strong trust in the scores rated by *Criterion*. 1 2 3 4 5
17. The scores given by *Criterion* are fair and adequate. 1 2 3 4 5
18. I liked using the writing program of *Criterion*. 1 2 3 4 5
19. It is beneficial to use *Error Report* after I complete an essay. 1 2 3 4 5
20. It is beneficial to use *Progress Report* after I complete two essays. 1 2 3 4 5
21. It is beneficial to use *Writer's Handbook*. 1 2 3 4 5
22. *Criterion* helps me to improve the overall quality of my essays. 1 2 3 4 5
23. I recommend my teacher to use *Criterion* again for next school year. 1 2 3 4 5

24. What is your opinion about the scores given by *Criterion*? Did you find any ways to fool the scoring system of *Criterion*?

25. What are the advantages/disadvantages of *Criterion*'s score and feedback analysis?

26. Please explain in a few words why you liked or disliked the writing program of *Criterion*.



大學生對使用英文寫作軟體之綜合評價

邱智仁^{1*} 吳偉西²

¹國立虎尾科技大學應用外語系 助理教授

²國立虎尾科技大學應用外語系 助理教授

摘 要

本研究目的在探討大學生對於一套英文寫作軟體(名為 *Criterion*)的看法與使用心得。參與的同學是一所國立科技大學三年級中級寫作班的學生。他們在學期末自由填寫一份問卷，以調查他們對於使用英文寫作軟體修改作文的感想。問卷結果顯示：有一半的同學同意 *Criterion* 的介面容易使用 (54%，M=3.5)；許多參與者會害怕看到線上計時的功能(78%，M=4.16)。 *Criterion* 似乎展現出了它所宣稱的形成性評量(formative evaluation)：有 78% 的同學覺得 *Criterion* 的錯誤診斷分析十分有用 (M=4.18)；76% 的同學會依照錯誤診斷分析作出修改(M=3.98)。關於總結性評量方面(summative evaluation)：相當少數的參與者(28%)對 *Criterion* 的評分有信心(M=2.86)；只有 30%的同學覺得 *Criterion* 的評分是公平恰當的(M=3.07)。本研究的成果對線上英文寫作軟體的教學與應用，能提供給有興趣的專家學者以及教寫作課程的老師們作為參考。

關鍵字：線上寫作軟體、*Criterion*、過程式寫作教學法。

聯繫作者：國立虎尾科技大學應用外語系，雲林縣虎尾鎮文化路 64 號。

Tel：+886-5-656315813

E-mail: chiyenchiu@gmail.com

