Automated Essay Scoring feedback for second language writers: How does it compare to instructor feedback?

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**Abstract**

Writing is an essential component of students’ academic English development, yet it requires a considerable amount of time and effort on the part of both students and teachers. In an effort to reduce their workload, many instructors are looking into the use of Automated Essay Scoring (AES) systems to complement more traditional ways of providing feedback. This paper investigates the use of an AES system in a college ESL writing classroom. Participants included 14 advanced students from various linguistic backgrounds who wrote on three prompts and received feedback from the instructor and the AES system (Criterion). Instructor feedback on the drafts (n = 37) was compared to AES feedback and analyzed both quantitatively and qualitatively across the feedback categories of grammar (e.g., subject-verb agreement, ill-formed verbs), usage (e.g., incorrect articles, prepositions), mechanics (e.g., spelling, capitalization), and perceived quality by an additional ESL instructor. Data were triangulated with opinion surveys regarding student perceptions of the feedback received. The results show large discrepancies between the two feedback types (the instructor provided more and better quality feedback) and suggest important pedagogical implications by providing ESL writing instructors with insights regarding the use of AES systems in their classrooms.

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1. Introduction

Despite the different point of views and conflicting findings in research, feedback on form remains an important aspect of second language writing. Gate keeping mechanisms such as high stakes-exams (e.g., Compass and TOEFL – Test of English as a Foreign Language) place great emphasis on grammatical accuracy in writing. Also, many English as a Second Language (ESL) students are likely to request explicit grammar feedback on their writing so to see their errors and learn from them. Similarly, many ESL teachers believe that they are not doing their job effectively if they do not put emphasis on grammatical errors in student essays. Feedback and revision, however, require a considerable amount of time and effort on the part of both students and teachers. In an effort to reduce the workload for both teachers and students, many instructors are looking into the use of Automated Essay Scoring (AES) systems to complement more traditional ways of providing writing feedback.

Due to their capability of evaluating an essay within seconds, AES systems have become an integral part of large scale writing assessments since 1999. Over the years, developing companies expanded their research in AES and produced instructional applications that are able to generate not only immediate scoring but also instant feedback on various traits of writing. Hence, instructional applications of AES systems have gained popularity in school systems including middle and high schools as well as colleges and universities. Four AES systems that are widely used include Project Essay Grader (PEG) by Page and Measurement Inc, Intelligent Essay Assessor (IEA) and WriteToLearn by Pearson Assessments, IntelliMetric and MY Access by IntelliMetric, and e-rater® and Criterion by the Educational Testing Service (ETS) (see Author A, 2006 for a detailed overview of AES systems).

This study employed Criterion, a classroom-based AES system which is supported by ETS’ e-rater scoring engine to be able to score essays within seconds and provide feedback on five traits of writing (grammar, usage, mechanics, style, and organization and development) at the same time. E-rater® uses Natural Language Processing (NLP) techniques and identifies specific lexical and syntactic cues in a text to analyze essays (Burstein, 2003; Kukich, 2000). Criterion, like other classroom-based AES systems, has been developed with native speakers of English in mind, yet it is marketed for and used by English as a Second/Foreign Language (ESL/EFL) speakers as well (Warschauer & Ware, 2006). In our own English for Academic Purposes (EAP) writing classrooms in a program for matriculated, developmental immigrant college students, we confront on a daily basis the dilemma of finding enough hours in the day to provide adequate feedback on student writing. We were intrigued by the marketing of Criterion as providing effective feedback for ESL writers and decided to not only try it with our students but to conduct an investigation of its efficacy as compared to teacher feedback on form. Therefore, the present study explored the use of the AES system Criterion in an English for Academic Purposes (EAP) classroom and compared automated feedback to instructor feedback in order to better understand the affordances and limitations of AES feedback for second language writers.

2. Literature review

2.1. The adequacy and effectiveness of instructor feedback on grammar and usage

Scholars have debated for approximately 30 years about whether focusing on the formal aspects of language or the meaning of the text should be the main concern for teachers while providing feedback. Research results, however, are inconclusive. Zamel started this ongoing discussion when she published her 1985 study advocating the importance of feedback on the content (content should precede form) of an essay. Otherwise, students may neglect to address content-related issues in their writings as they will be concerned more about the accuracy. Fathman and Whalley (1990) disagreed with Zamel (1985), stating that emphasizing grammar might not have a negative influence on the content after all. Likewise, Ferris (1995) found that excessive attention on grammar was not ineffective as it was believed. Based on similar findings in their studies, Both Ferris (1995) and Fathman and Whalley (1990) recommended that teachers keep a balance between feedback on form and content. Ashwell’s (2000) findings also contradicted those of Zamel’s (1985) and supported those of Ferris (1995) and Fathman and Whalley (1990). In his 2000 study, Ashwell found that the feedback pattern that Zamel (1985) recommended was not superior to the other types of feedback patterns that he used in his study, the
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