

**Use of AEE Technology for Feedback Generating on Written Text: A
Revolution in Academic Writing Domain**

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AEE, a computer-generated grading system that delivers written comments on the quality of written texts, is the topic of this book. It is already possible to find both commercial and non-commercial AEE applications that feature a scoring engine that provides automatic scores based on techniques like artificial intelligence (AI), natural language processing (NLP), and latent semantic analysis. AEE scoring engines are taught using human ratings, and AEE is being used for summative assessments in tests such as the TOEFL and the Graduate Management Admissions Test, in combination with human ratings. In addition to spoken feedback, many AEE programmes also incorporate written feedback in the form of comments and corrections. Using written AEE feedback to give formative input in writing courses has grown in popularity in recent years, especially in American schools at the secondary and postsecondary levels. The book is a follow-up to *Automated Essay Scoring: A Cross-Disciplinary Approach*, which was published in 2003 and is the subject of this volume. Published in 2003, (Lawrence Erlbaum Associates) The writers of this book intend to provide a comprehensive summary of the past decade's advancements in the field. According to the preface, the term "automated essay evaluation" has been changed from "automated essay scoring" to "automated essay evaluation." AEE alias AES's assessment-oriented roots were examined in the preceding book, which focused on the test scores and the software used to create these findings. Computational-linguistic and psychometric theories were greatly inspired by it. The introduction appears to be setting the stage for the new book to broaden its reach by offering written AEE feedback aimed toward teaching as well as opinions on

educational policy and writing research alongside those of computational linguists and psychometricians.

AEE is shown in the novel as a problematic topic. Because of the "terrified" the author of the preface goes so far as to state that he is "the drumbeat of criticism concerning AEE" about writing the foreword (p vii). Some of the most prominent thinkers in the world, including Noam Chomsky, have signed an online petition titled "Professionals Against Machine Scoring of Student Essays in High-Stakes Assessment," which has been reported in a number of media, including the New York Times. Critics of the AEE programme have voiced concerns about the program's authenticity and integrity and about the possible repercussions of writing for a non-human audience, as is acknowledged by the prologue. It appears that this volume will address these problems by evaluating the current data supporting AEE's value in connection to students' writing, as well as an informative and well-balanced discussion of the topic.

Synopsis

There are four loosely organised sections, according to the preamble. Introduces AEE and its development history; also discusses various concerns with AEE. The sections that follow provide a quick overview of each of the four components. Because neither the introduction nor the table of contents specifies where the sections begin and end, I have used my own judgement to establish the beginning and conclusion of each part.

Section 1: Introduction

Section 1 focuses on AEE and research paper preparation. Second-year college students in the United States can use AEE as a quick evaluation technique to identify those who require remedial writing assistance. In the chapter, AEE is suggested for this purpose because of both the drop in remediation rates and the statistically significant favourable correlations between AEE scores, SAT scores, and writing portfolio scores as reasons. Detailed discussion of AEE scoring and comments may be found in Chapter 3. There are numerous insights regarding AEE's capabilities (or lack thereof) that are applicable to writing in general even though this book focuses on EFL and ESL. The chapter concludes with a brief review of the effectiveness of automated feedback in helping students improve their writing.

The second section is titled

In the second part, certain AEE programmes' traits and capabilities are explored in further depth. Computational linguistics and psychometrics affect the chapters in this area, and numerical feedback is emphasised rather than written feedback in the chapters. Chapter 4 discusses the E-rater software, developed by the Education Testing Service, which uses natural language processing to identify linguistic elements in a document. Pearson Knowledge Technologies' Intelligent Essay Assessor is based on Latent Semantic Analysis (LSA), which is detailed in Chapter 5. There are two types of assessments being used in West Virginia schools: summative (WESTEST 2) and formative (West Virginia Write). Intellimetric, a technology developed by Vantage Learning, uses a combination of linear analysis, Bayesian analysis, and Latent Semantic analysis. At Carnegie Mellon's Language Technologies Institute, LightSIDE, a programme that uses open source technologies, was first created in Chapter 8.

Section 3 of this document

Section 3 focuses on psychometric issues related to AEE, and again emphasises scoring rather than textual input. Chapter 9 focuses on the logistics and limits of automated short response scoring. This chapter examines the validity of AEE by examining how the logic that drives the assignment of scores to essays when automated scoring is applied may change when human raters are used. Findings from this chapter show that AEE scoring is able to measure certain parts of writing, but not all aspects of writing, based on the current data. In Chapter 12, a heavily psychometric and statistically oriented chapter, we go into great depth on scaling and norming for automated essay scoring. Chapter 13 delves at the relationship between AEE scores and human assessments. "Reader drift," which relates to a human inclination toward deviation from scoring criteria, is extensively covered in Chapter 14. AEE may also be used to monitor the performance of human raters, which is detailed in Chapter 15.

Section 4

There are a number of current developments in the field of AEE discussed in Section 4, including the use of AEE to evaluate discourse coherence in essays (Chapter 15); current techniques in the grammar error detection of AEE (Chapter 15); using AEE to evaluate

discourse coherence (Chapter 16); and using AEE to identify attitudinal expressions (Chapter 18). In Chapter 19, which examines AEE systems, the connections between AEE scores and human scores are explored in depth. The book's last chapter examines the role AEE can play in the Single Core State Standards Initiative (CCSSI), which is a common set of education standards for Language Arts/Literature and Mathematics in the United States for K-12 students.

Evaluation

As a whole, this book provides an excellent overview of the current status of AEE systems, even if it is a tad lengthy. You may find this book useful if you wish to understand how AEE systems function, what their capabilities are like, and how these capabilities compare to the capabilities of human raters or those of other AEE systems. From the most fundamental to the most cutting-edge research, this book gives an excellent summary of the most significant advances that have happened in the previous ten years. Validity, dependability, and norming, among other things, are all addressed in great detail. These are all crucial problems in the construction of meaningful and accurate automated scoring systems.

It is unfortunate that the book fails to meet its goal of providing a comprehensive vision of AEE that incorporates opinions from writing research and educational policy, as well as those from other disciplines. " Again, it looks like the book was primarily created for audiences in the disciplines of computer assisted language learning and psychometric analysis. It is reasonable to assume that this is the case, given the backgrounds of the vast majority of the writers and the fact that many of them work for or are somehow closely associated with the companies that design and market AEE systems.

Writing researchers and educationalists may find themselves bewildered and probably a bit disappointed by the book's lack of theoretical and pedagogical ideas drawn from writing research or writing teaching. No insights into how AEE written feedback is utilised in schools as a kind of formative evaluation, how it affects authors, or how it might be successfully integrated into classroom instruction are supplied to readers. While AWE is discussed in one of the two chapters on writing instruction, nothing is said about its usage in the writing classroom in the other (Chapter 2). Another (Chapter 3) includes both summative and formative applications of AEE and is by far the most beneficial in terms of writing study and

education. In particular, Chapter 3 is the most intriguing. It's also worth noting that Chapter 18 does relate the continuous development of AEE to a cognitive model of writing and, via this, to particular abilities and processes, which is a good development in the area.

The book's major concentration is on AEE systems rather than writing or authors. On the other side, many of the negative claims regarding AEE have focused on its supposed influence on writers and the writing process. This is a common theme. The book is unable to address many of the concerns levelled about AEE systems since it essentially excludes authors from the equation. When it comes to assessing various components of the writing process, AEE systems have limits that the book candidly and openly acknowledges. A brief review of the effects of AEE on students' writing is all that is provided. Two chapters (Chapter 3 and Chapter 15) make short reference of the impacts of AEE feedback on students' writing, but neither goes into considerable length regarding these or gives anything that approaches a full examination of the research on the issue. This is problematic since there is a growing body of work that analyses the impacts of AWE in terms of the quality of students' writing, the effects of AEE on students' writing processes, the effects on student and teacher perceptions, and the utilisation of AEE systems in the classroom. Not only is there no reference of this literature here, but there is no mention of it anywhere else in the book.

It promises more than it can give when it comes to comprehensiveness and scope as a comprehensive guidebook for automated essay grading. While there are some unmet promises in this book, those promises may be overlooked if the reader accepts the book for what it is: a detailed and rigorous examination of AEE scoring systems and their capabilities as well as the psychometric qualities they possess and their continual development.