

## Chapter 8

# Classroom Applications of Automated Writing Evaluation: A Qualitative Examination of Automated Feedback

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### **ABSTRACT**

*The majority of United States students demonstrate only partial mastery of the knowledge and skills necessary for proficient writing. Researchers have called for increased classroom-based formative writing assessment to provide students with regular feedback about their writing performance and to support the development of writing skills. Automated writing evaluation (AWE) is a type of assessment for learning (AfL) that combines automated essay scoring (AES) and automated feedback with the goal of supporting improvements in students' writing performance. The current chapter first describes AES, AWE, and automated feedback. Next, results of an original study that examined students' and teachers' perceptions of automated feedback are presented and discussed. The chapter concludes with recommendations and directions for future research.*

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## **INTRODUCTION**

Recent national reports and research findings indicate that students in the United States are not performing well in writing (Graham & Perin, 2007; National Commission on Writing, 2006; NCES, 2012). The National Assessment of Educational Progress (NAEP) writing assessment was computer administered for the first time in 2011 to students in middle and high school. Results showed only 27% of students in eighth and twelfth grades performing at or above the *Proficient* level in writing. The majority of students demonstrated only partial mastery of the knowledge and skills necessary for proficient writing (NCES, 2012).

Assessment for Learning (AfL) environments have been proposed as a solution to promote students' learning in writing and other domains. Productive AfL environments provide authentic assessment tasks that allow for extensive practice, include both formal and informal feedback, foster student autonomy, and balance summative with formative assessment (McDowell, Wakelin, Montgomery, & King, 2011). Researchers have called for increased classroom-based formative writing assessment to provide students with regular feedback about their writing performance (Graham, Hebert, & Harris, 2015). Assessments serve a formative function "to the extent that they regulate learning processes" (Wiliam, 2014, p. 2). The high cognitive demands and complexity of writing require that students develop self-regulatory skills to write well (Graham & Harris, 2000; Zimmerman & Kitsantas, 2007), underscoring the importance of formative writing assessment in supporting the development of students' writing skills.

One type of AfL that is increasingly prominent in the United States and abroad is Automated Writing Evaluation (AWE). AWE systems are educational technologies that provide formative writing assessment and automated feedback with the goal of supporting improvements in students' writing performance. This chapter is dedicated to an examination of automated feedback, considering both students' and teachers' perspectives.

## **PURPOSE OF THE PRESENT CHAPTER**

More than 50 years of applying artificial intelligence to the task of writing evaluation has led to the development of mature Automated Essay Scoring (AES) systems capable of evaluating writing with a high degree of accuracy (Shermis, Garvan, & Diao, 2008; Shermis, 2014). AWE pairs AES with automated feedback in the form of customized suggestions for improving writing quality. Grading essays and providing high-quality feedback to student writing is time consuming for teachers (Dikli, 2010), and AWE removes some of the burden on teachers associated with

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