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## Preparing Tomorrow's Leaders for Yesterday: AI and Standardized Grammar Assessment

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Much discussion of what is next for literacy has centered on digital spaces, which importantly examine fundamental ways to reconsider earlier conceptions of teaching and learning. However, few if any have asked how recent advances in artificial intelligence (AI) might necessitate changes in both grammar pedagogy and standardized testing. Considering that grammar currently comprises large sections of college admission exams, this is a conversation that English teachers, supervisors, and researchers need to have.

Writing had long seemed to be an academic skill that might be facilitated by technology (such as online collaboration features in Google Docs), but one that was not fundamentally challenged by technology. Indeed, the complexity of grammar rules and the varied contexts in which they manifest appeared to preclude any foundational changes in writing pedagogy, and the teacher's red pen seemed poised to dominate for a long time. However, recent progress in AI development has refined and improved upon grammar correcting algorithms—commercially available in interfaces such as Grammarly. In lieu of the red pen is Grammarly's red underline, which likewise connotes a writer's error.

Personally, as an English teacher and faculty adviser to a high school newspaper, I have seen this coming. I have witnessed firsthand the drastic difference that a modern grammar checker can make on students' drafts. Freshmen who had until recently been on the receiving end of a salvo of

corrective marks are now submitting clean copy as first drafts, nearly spotless reports that enable us to discuss how to improve reporting, not syntax. Now that students can submit writing that is largely grammatically sound without a teacher's direct instruction, what does this mean for how we teach and assess students' writing?

Despite these paradigmatic changes, many English teachers have not yet deeply considered these new grammar checkers. I understand where they are coming from. Like them, I lived through the 1990s and remember quirky, nonsensical suggestions made by the early grammar checking functionality in Microsoft Word. The grammar checkers of today are profoundly different.

Powered by the latest developments in Natural Language Understanding, a branch of AI research that focuses on machine reading comprehension, the accuracy of the latest generation of grammar checkers is astonishing. While they are by no means perfect, the Standard English grammar of the finished product is significantly improved. In fact, the Grammarly website itself touts that 99% of students who use its program receive better grades in writing.

In my doctoral research, I have investigated how AI-augmented writing is already profoundly challenging notions of curricular writing pedagogy and assessment. During interviews that I conducted, several New Jersey high school English teachers shared that they often deducted points from student assignments for faulty or sloppy grammar, even if grammar was mostly (or,

in some cases, entirely) absent from their curricula.

Considering this and other findings, I developed a critical artificial intelligence theory to offer a new lens for critical pedagogy. This lens utilizes AI to better understand the institutions into which that AI is integrated. For example, it has long been shown that academic language tends to have much in common with the language practices of the white middle and upper classes, effectively making it more difficult for students who come to schools with non-standard practices to succeed (Gee 88; Heath 265; Street 104). By addressing the mismatch, AI grammar checkers have drastically improved users' academic writing grades. Behind the improved writing grades, however, is a tacit acceptance of largely arbitrary language rules in high school English that has greatly favored some students' linguistic practices over others. The AI grammar checker relieves some of the symptoms (i.e., lower grades) of linguistic difference, but it masks the underlying institutional inequity.

For this reason, AI needs to be discussed by stakeholders in education today. Standardized statewide exams such as New Jersey Student Learning Assessment (NJSLA) still base nearly half of the scoring for each of its writing tasks on students' 'Knowledge of Language and Conventions,' a domain that assesses grammatical accuracy. And although students take these exams on computers, they are forbidden from using grammar checking programs.

In addition, both the SAT and ACT place a high value on standardized English grammar, comprising one-fourth of each of the tests—not to mention the optional Writing sections. Running a publicly available ACT English exam through Grammarly, I found the algorithm adeptly identified mistakes in subject-verb agreement, semicolon use, and who-whom

questions. However, questions that asked about tone or sentence placement were beyond the ken of these AI-based grammar checkers. This suggests that questions about writing and grammar need not vanish altogether but rather that standardized exams should endeavor to move away from problems that explicitly test Standard English language mechanics. Instead, questions that ask about transition usage, sentence placement, or paragraph order better assess students' understanding of writing composition.

Still, critics may argue that an over-reliance on technology may diminish students' broader understanding of sentence construction and syntax. This argument has an analogy in an earlier one: the contention that calculators would enfeeble students' mathematical capacities. But just as we teach students arithmetic number sense during their early childhood education, so too can foundational sentence structures and grammar continue to be taught in primary schools. Students' college admission decisions should not be based on whether they've mastered the esoteric distinction between 'who' and 'whom,' a grammatical hiccup that many linguists now agree makes no difference in language understanding (McWhorter).

There are certainly a number of benefits to be gained by introducing AI grammar checkers into the classroom. Tools like Grammarly may help level the playing field by giving more students access to proper grammar. Additionally, teachers in my study suggested that grammar checkers could drastically reduce the amount of time they would need to devote to error correction, allowing them to engage with students' writing at a more meaningful level. However, the issue of AI grammar checkers is not so simple. Despite these numerous benefits, I worry about the consequences of further normalizing any single set of writing

rules. It is important that AI not become intractable in its grammar rules: language naturally develops and evolves over time. Certainly, our language has changed drastically even since the early modern English of Shakespeare.

As an English teacher, I am excited by the application of AI grammar checking in my classroom; I am also concerned that in pursuing those benefits, we further obfuscate underlying institutional issues of equity. With this technology widely accessed by students, AI grammar checking is already shaping how students compose writing. It is my hope that English teachers, supervisors, and researchers will thoroughly consider the many questions raised by artificial intelligence in student writing production.

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