Florida Atlantic University: Grammarly Efficacy Study

(Fall 2023 and Fall 2024)

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Abstract

Many students enter college with insufficient writing proficiency to succeed academically. However, writing support programs can improve academic outcomes for higher ed students. This mixed-methods study examined the impact of Grammarly's AI-powered writing coach among 10,701 students at Florida Atlantic University during Fall 2023 through Fall 2024, comparing outcomes of 811 Grammarly users with 9,890 nonusers in writing-intensive courses. Grammarly users demonstrated significant improvements across key metrics: Course completion rates differed significantly (92.7% vs. 89.4%, p = .001). Retention rates were also higher among Grammarly users (79% vs. 74%), with first-year dropout rates 11 percentage points lower than the comparison group. Academic performance showed a clear effect of Grammarly usage, with high-frequency users averaging 3.69 GPA vs. 3.29 for nonusers. Writing performance also showed systematic improvements within semesters in both Fall 2023 and Fall 2024–especially among consistent users. Interviews with instructors suggested reduced barriers to students seeking assistance, decreased grading burden, and effective integration within existing writing support systems. These findings indicate that Grammarly provides a range of academic benefits, from providing writing support to positively influencing performance and retention.

Keywords: Writing support technology, automated feedback, academic performance, student retention, course completion, educational technology, higher education, AI

APA Cite: Schechter, R., Chase, P., Ackerman, C., Lam, K. (2025). *Florida Atlantic University: Grammarly Efficacy Study.* LXD Research.

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Introduction

Many high school students graduate with significant gaps in their writing skills that higher education institutions must then address. According to the National Assessment of Educational Progress, only 27% of 12th graders demonstrate proficient writing skills, meaning most students enter college with substantial writing deficiencies (The Nation's Report Card, 2022). The Center for American Progress reported that 40%–60% of first-year college students require remediation in English (Jimenez et al., 2016).

The impact extends beyond writing composition courses. Students across science, technology, engineering, and mathematics (STEM); business; and healthcare disciplines frequently encounter challenges with discipline-specific and academic writing, particularly in areas such as organization, research design, and adapting to different audiences (Galdonez, 2025; Gopee & Deane, 2013). Vulnerable populations such as first-generation college students showed lower performance and satisfaction in literacy activities, as well as lower GPA and retention (López, 2023). Likewise, English-as-a-second-language students (Braine, 1996) and Pell Grant recipients (Kim, 2024) are more likely to report barriers to writing success due to systemic issues, including reduced access to support, language challenges, and financial stress.

The academic stakes of writing proficiency are considerable. Students with strong writing skills consistently achieve higher GPAs, ranging from 10% to 25% higher than their peers with weaker writing abilities (Sullivan & Tinberg, 2006). Writing difficulties also play a significant role in early academic attrition, as it is frequently cited in academic probation cases (Damashek, 2003).

Institutional Challenges and Technology Solutions

Fortunately, writing support programs have been shown to positively influence academic outcomes for higher-ed students. Participation in writing-intensive or support programs has been associated with improvements in course completion rates of 20%–40% (Graham & Perin, 2007). Peer-to-peer consultation can be highly effective in boosting writing self-efficacy by providing students with opportunities to have someone listen to them, translate for them, receive advice, and stay motivated (Lundin et al., 2023). Although traditional writing centers are a key area of writing support, they frequently face significant resource and access constraints, with many able to support only a small fraction of the student population due to limited staff and operational hours (e.g., Reglin, 2017).

This context has driven interest in personalized tools to coach and support writing development, such as Grammarly. The evolution from basic spell-checkers to AI-powered writing coaches represents a significant technological shift, with tools now offering personalized, real-time feedback that adapts in complexity as students' writing improves over time. Immediate Feedback

Theory suggests that timely correction enhances learning retention, while these tools provide scaffolded learning consistent with Vygotsky's Zone of Proximal Development (Opitz & Mecklinger, 2011; Doo, 2020).

Research Gaps and Study Rationale

Despite widespread adoption of automated writing feedback tools, significant research gaps persist in understanding their effectiveness across diverse educational contexts. Published articles about these tools typically provide feature reviews or user feedback surveys rather than rigorous empirical studies. Empirical research studies typically focus on small-scale implementations or short-term interventions that examine isolated writing support technologies rather than on a comprehensive assessment of academic outcomes.

Research on automated writing feedback tools has examined various platforms and typically involves small samples or studies with non-rigorous designs. A recent meta-analysis on ProWritingAid found that only 12 out of 200 identified studies met rigorous inclusion criteria, highlighting the scarcity of high-quality research (Damayanti & Santosa, 2024). Often, studies are conducted by instructors in their own classrooms, a type of research known as action research, which results in small sample sizes and short time frames. For example, a study on the impact of QuillBot was conducted with 48 students, who were given two writing tasks and randomly assigned to use the program (Amyatun & Kholis, 2023).

Studies of Grammarly have shown promise, but their scope has been limited. One study compared 54 university students who used Grammarly with 42 students who received traditional feedback, finding that the students were more satisfied with the automated Grammarly support. However, this research examined only short-term perceptions and did not follow students' long-term writing or overall academic progress (O'Neill & Russell, 2019). Similar limitations come from research on brief interventions that detect improvements in grammar and writing mechanics but fail to capture sustained higher-order thinking skills, such as content development and organization outcomes (Ghufron & Rosyid, 2018). Systematic analysis confirms that the majority of studies have focused on university students for whom English is not their primary language over a single academic semester, severely limiting generalizability.

Another study by Zinkevich and Ledeneva (2021) examined the use of Grammarly among 100 master's students at a Russian university and found that the tool was effective in helping students identify and reduce errors related to redundancy and inappropriate formality. The researchers found Grammarly to be a valuable supplemental tool for enhancing surface-level accuracy. Still, it did not replace teacher feedback or address the conceptual facets of academic writing. These findings reflect broader challenges in automated writing feedback research, where technological

capabilities often focus on mechanical corrections rather than on comprehensive writing development.

Instructors' adoption of automated writing feedback tools reveals both enthusiasm and concern. Many instructors recognize that these technologies can enhance student engagement, encouraging more frequent revisions and providing timely feedback. According to a recent national survey, 69% of higher education executives believe AI-powered writing tools will increase students' ability to write clearly and persuasively, with 27% expecting a significant impact (Watson, 2025). Studies show that students may benefit from more immediate and interactive feedback, and instructors report that properly integrated tools support their instruction, helping students refine their writing (Liu, 2024). However, educators harbor significant concerns about these tools. Instructors frequently worry that automated tools might undermine the depth of teacher-student interaction, potentially reducing opportunities for meaningful, personalized guidance in writing instruction (Yeo, 2023).

Study Significance

This mixed-methods study examines the usage and impact of Grammarly in one institution over two consecutive fall semesters through a full-scale, real-world implementation in 2023 and 2024. The study addresses gaps in existing research by analyzing academic outcomes across multiple measures (GPA, course completion, retention, and writing quality), usage patterns, and instructor perspectives essential for implementation and sustainability. This comprehensive approach extends beyond isolated pilot studies to understand both measurable impacts and implementation dynamics that determine success in real educational settings.

The version of Grammarly used by the end of the study period is considered an AI-powered personalized writing coach that provides real-time feedback on grammar, punctuation, style, tone, and clarity, integrating seamlessly with widely used applications popular with students. In educational settings, it serves as both a learning tool and a writing coach, offering features designed for academic work, including plagiarism detection and citation support. Grammarly's performance score evaluates writing quality on a 0–100 scale, providing measurable feedback while allowing students to receive consistent support without overwhelming instructors and writing centers.

Research Questions

The research questions addressed in this study are as follows:

Evaluate Impact

- How does access to Grammarly influence student performance in writing-intensive courses, including immediate writing outcomes and broader academic achievement measures?
- What is the relationship between intensity of Grammarly usage and improvements in student performance over time?

Understand Usage Patterns

- How do students engage with Grammarly across different academic contexts, and what patterns emerge in usage frequency and feature utilization?
- Which student populations demonstrate the highest and lowest engagement with Grammarly, and what factors contribute to these differences?

Analyze Implementation

- How do instructors implement Grammarly across courses, and what institutional and pedagogical factors affect implementation and sustained use?
- What barriers and facilitators emerge during large-scale implementation of automated writing coaching tools?

Gather Instructor Perspectives

- How do instructors perceive the usability and effectiveness of Grammarly in supporting student writing development?
- What are instructors' attitudes toward integrating automated coaching tools into their writing instruction and teaching practices, and how do these perspectives influence student outcomes?

Method

Research Design

This mixed-methods efficacy study examined the relationship between Grammarly use and student academic outcomes at Florida Atlantic University during Fall 2023 and Fall 2024. The investigation employed a quasi-experimental retrospective design comparing academic performance between students with access to Grammarly and those without access across writing-intensive courses.

The timing of this study is particularly noteworthy, as both academic periods occurred after the public availability of ChatGPT and other generative AI tools but before Grammarly released built-in generative AI features. This temporal positioning allows for examination of traditional automated feedback mechanisms without confounding effects from generative AI–assisted content generation.

The mixed-methods approach of this study combined quantitative analysis of institutional student performance data with qualitative examination of instructor perspectives through semi-structured interviews. This design enabled triangulation of findings while providing both measurable outcomes and contextual understanding of implementation dynamics.

Participants and Setting

Institutional Context

Florida Atlantic University (FAU) served as the research site, providing an ideal setting for examining writing support technology implementation in a large postsecondary institution. FAU serves approximately 30,000 students across multiple campuses in South Florida, representing the diverse access-oriented institutions that make up much of American higher education. The university's significant population of first-generation college students, Pell Grant recipients, and students from underrepresented backgrounds creates a demographically diverse environment for assessing technology interventions designed to support academic success.

The Grammarly implementation at FAU emerged through student-driven advocacy, with the student government requesting institutional licensure after students had previously been purchasing individual subscriptions at their own expense. This organic adoption process, combined with the university's commitment to supporting student success through technological innovation, created conditions conducive to authentic usage patterns rather than forced compliance.

Student Participants

The quantitative analysis included 811 students who used Grammarly while attending writing-intensive courses (660 in Fall 2023; 345 in Fall 2024) compared with 9,890 nonuser students enrolled in similar writing-intensive courses during the same periods (over 5,300 students per academic year).

The sample demographics reflected the diversity of FAU, with 30% Pell Grant eligible, 9% first-generation college students, 25% Latino, 13% Black, and 6% international students. Students demonstrated strong academic preparation, with an average weighted high school GPA of 3.97. Academic distribution by major included 27% from pre-business programs, 6% from

communication, and 6% from biology, ensuring representation across disciplines with varying writing demands. For full details, see Table 1 below.

Table 1. Student Participant Demographics

Characteristic	Grammarly Users (n=811)	Nonusers (n=9,890)	Total Sample (N=10,701)
Enrollment Status			
Fall 2023	660 (81.4%)	5,395 (54.6%)	6,055 (56.6%)
Fall 2024	345 (42.5%)	5,938 (60.0%)	6,283 (58.7%)
Both Semesters	194 (23.9%)	1,443 (14.6%)	1,637 (15.3%)
Demographics			
Pell Grant Eligible	243 (30.0%)	2,967 (30.0%)	3,210 (30.0%)
First Generation	73 (9.0%)	890 (9.0%)	963 (9.0%)
Latino	203 (25.0%)	2,473 (25.0%)	2,676 (25.0%)
Black	105 (13.0%)	1,286 (13.0%)	1,391 (13.0%)
International	49 (6.0%)	593 (6.0%)	642 (6.0%)
Academic Preparation			
Mean High School GPA	4.00 (SD = 1.18)	3.96 (SD = 1.42)	3.97 (SD = 1.34)
Academic Distribution			
Pre-Business	219 (27.0%)	2,670 (27.0%)	2,889 (27.0%)
Communication	49 (6.0%)	593 (6.0%)	642 (6.0%)
Biology	49 (6.0%)	593 (6.0%)	642 (6.0%)
Other Disciplines	494 (61.0%)	6,034 (61.0%)	6,528 (61.0%)

Instructor Participants

Six instructors currently teaching English and business courses participated in semi-structured interviews conducted during Spring 2025. This sample provided perspectives from composition-focused and academically oriented writing instruction contexts. Interviews occurred after generative AI features were released in Grammarly but before comprehensive instructor training using these features was provided.

Data Sources and Collection

Academic Performance Metrics

Student academic data included course completion rates, year-over-year retention, cumulative GPA, and course-specific performance outcomes. Data were collected from institutional records across Fall 2023 and Fall 2024, with retention measured through Spring 2025 enrollment status.

Grammarly Usage Analytics

Platform engagement data captured frequency patterns, feature utilization, writing performance scores, and session duration. The key metric used in this study was average days per week used. Usage frequency was categorized as: low usage (< 3 days per week), moderate usage (3 to < 5 days per week), and high usage (5+ days per week), on average.

Student Background Variables

Demographic and academic preparation data included high school GPA, race/ethnicity, Pell Grant eligibility, first-generation college student status, international student designation, and course enrollment patterns. These variables served as statistical controls in regression analyses.

Measures

Writing Performance Assessment

Grammarly's performance score provided a standardized writing quality assessment on a 0–100 scale. This metric evaluates accuracy, clarity, engagement, and delivery while benchmarking against millions of daily users with similar writing goals. For analysis purposes, improvement was measured by comparing performance scores between the first and second halves of each semester for long-form documents exceeding established word-count thresholds.

Academic Outcome Variables

Course completion was defined as earning grades of C or higher, with grades of D, F, or Withdrawal classified as non-completion. Retention analysis examined four outcomes: continued enrollment (retained), degree completion (graduated), transfer to other institutions, and departure without transfer (dropout). GPA calculations utilized weighted 4.0 scale institutional records.

Qualitative Data Collection

Semi-structured interviews with instructors explored implementation experiences, perceived student benefits, integration challenges, and attitudes toward automated writing support tools. Interview protocols addressed pedagogical approaches, observed changes in student writing quality, and perspectives on technology's role in writing instruction.

Analysis Plan

Quantitative Analyses

Statistical analyses employed multiple approaches to examine relationships between Grammarly use and academic outcomes. Chi-square tests of independence assessed categorical outcomes, including course completion and retention status. Linear regression models examined GPA differences while controlling for baseline characteristics, including high school GPA, demographic variables, and course-level factors.

Usage intensity analyses employed ANCOVA (analysis of covariance) to examine the relationship between engagement frequency and academic outcomes. Regression models incorporated controls for student characteristics to isolate effects attributable to platform use rather than endogenous differences between user and nonuser populations.

Qualitative Analyses

Interview transcripts underwent thematic analysis following established qualitative research protocols. Initial coding identified recurring concepts and experiences, with codes refined through iterative review processes. Similar codes were grouped into broader themes, with research team review ensuring accurate representation of instructor perspectives. Particular attention was directed toward implementation dynamics, observed student benefits, and integration challenges that inform scalability considerations.

Mixed-Methods Integration

Triangulation of quantitative outcomes with qualitative insights provided a comprehensive understanding of both measurable impacts and underlying mechanisms. Statistical findings informed interview interpretation, while instructor perspectives contextualized numerical outcomes and revealed implementation factors that influence program effectiveness.

This methodology addresses limitations present in previous research through its larger sample size, longer observation period, and integration of both usage analytics and academic outcomes within an authentic institutional implementation context.

Quantitative Findings: Student Outcomes

The quantitative portion of this mixed-method study examined course completion rates, year-over-year retention rates, writing performance, and GPAs. Several of the overall findings presented below were also analyzed by relevant subgroup or by Grammarly usage level.

Course Completion

Course completion rates serve as a crucial early indicator of student success, particularly in writing-intensive courses where students often struggle with the dual demands of content mastery and academic writing skills. Course completion in this report is defined as earning grades of C or higher, with grades of D, F, Withdrawn, and Incomplete classified as non-completion.

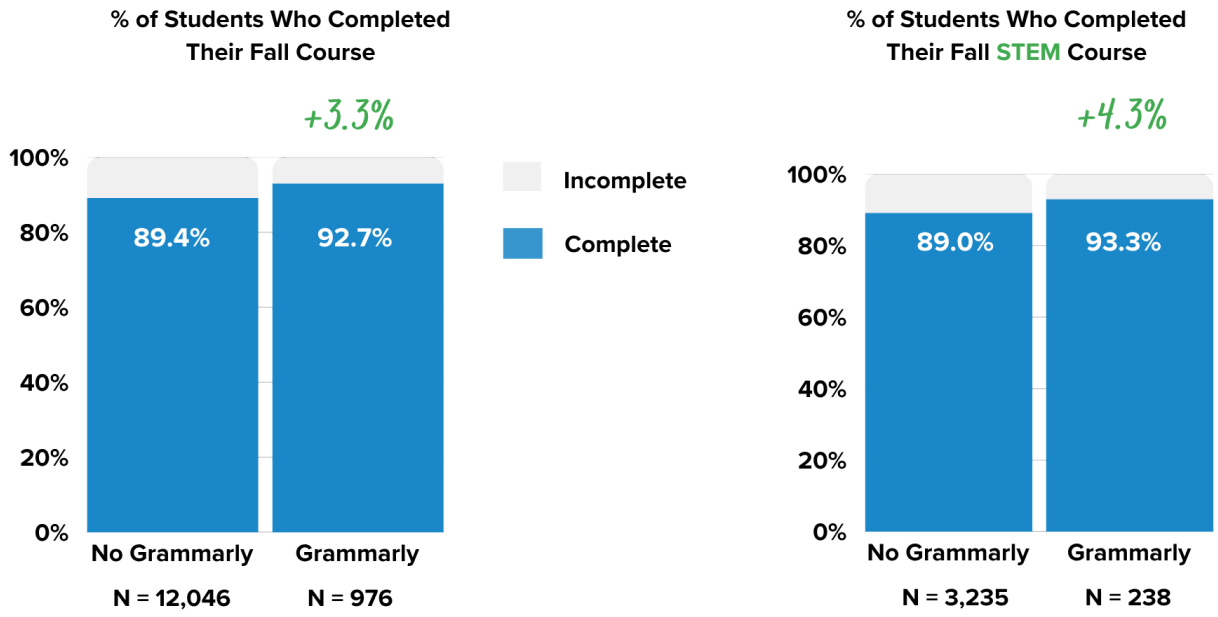
In this study, Grammarly users demonstrated significantly higher course completion rates across both academic years examined (see Figure 1). Students with access to the Grammarly writing assistant completed their writing-intensive courses at a rate of 92.7%, compared to 89.4% for their peers without Grammarly access—representing a 3.3 percentage point improvement ($\chi^2(1, N = 12{,}822) = 10.18$, $p = .001$, $\varphi = .03$, Cohen's $d = 0.06$). This improvement was consistent across both Fall 2023 and Fall 2024, suggesting that Grammarly's impact represents a consistent benefit.

The completion advantage was noteworthy when considering that these were, on average, relatively high-performing students, with an average weighted high school GPA of 3.97. Finding measurable differences in course completion among academically prepared students suggests that Grammarly's real-time personalized writing coach support addressed genuine barriers to success for college students.

The impact of Grammarly was particularly pronounced in science, technology, engineering, and mathematics (STEM) writing-intensive courses (see Figure 2). Grammarly users in STEM courses achieved a 93.3% completion rate compared to 89.0% for nonusers—a substantial 4.3 percentage point improvement ($\chi^2(1, N = 3{,}473) = 3.77$, $p = .052$). This finding is particularly noteworthy

because STEM students often report lower confidence in their writing skills and may avoid or struggle in courses requiring substantial written work. Although this result was just over the .05 significance threshold, this was in large part due to the small sample size of students in the treatment condition that did not complete a course (n = 16). Therefore, this hypothesis will be tested further in a study with a larger proportion of STEM students.

Figures 1 and 2. Course Completion by User Status (Overall and STEM Courses)



Retention

Retention for All Students

Student retention for the following academic year represents a critical predictor of degree completion, particularly for diverse student populations navigating the college transition. We explored differences in four possible outcomes: Retention, Graduation, Transfer, and Drop Out. Grammarly users demonstrated significantly higher retention across these outcomes, suggesting that consistent writing support helped students to become more academically capable.

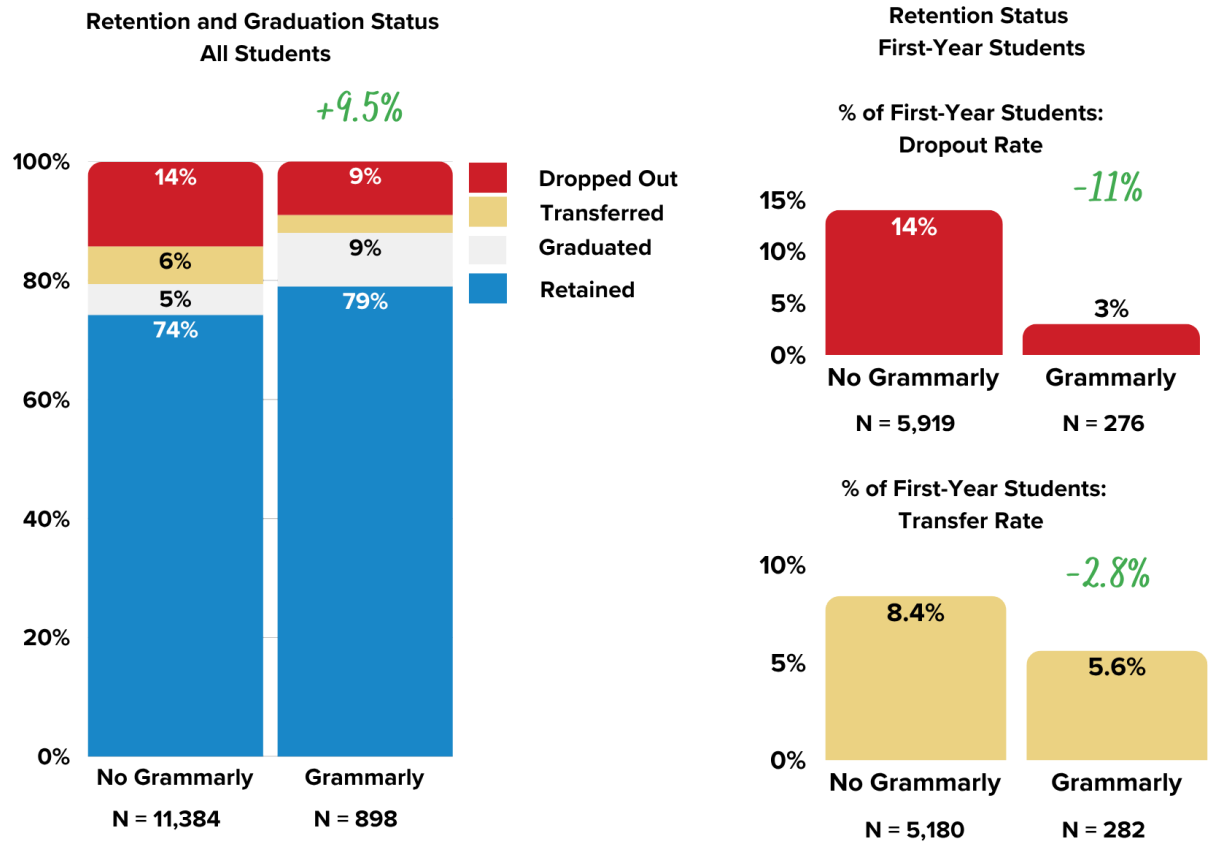
Overall, 79.5% of Grammarly users enrolled in fall courses compared to 74.2% of nonusers—a 5.3 percentage point difference. Critically, Grammarly users showed lower dropout rates (8.6% vs. 14.4% for the comparison group; ($\chi^2(1, N = 12{,}282) = 23.17$, $p < .001$, $\varphi = .043$, Cohen's $d = 0.09$). In addition, Grammarly users were significantly less likely to transfer to other institutions (3.3%) than

the comparison group (6.2%; (χ^2(1, N = 12,282) = 11.82, p < .001, φ = .031). These significant differences in dropout and transfer rates may be an indicator of greater overall satisfaction and academic success at their current institution. See Figure 3 below for full details.

Retention for First-Year Students

The retention benefits were most pronounced among first-year students, who face the steepest learning curve in college-level academic expectations. Among first-year students, only 3.4% of Grammarly users dropped out compared to 14.3% of nonusers—a difference of 10.9 percentage points (χ^2(1) = 24.53, p < .001, φ = .067, Cohen's d effect size = .13). Likewise, first-year transfer rates were 5.6% for Grammarly users vs. 8.4% for nonusers–2.8 percentage points lower. These findings suggest that Grammarly users found greater academic success during this critical transition period to higher education (see Figures 4 and 5, below).

Figures 3–5. Retention Outcomes for All Students and First-Year Students by User Status



Academic Performance

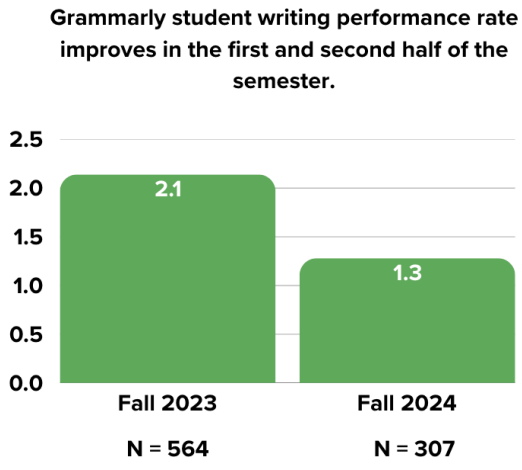
Students' Writing Performance Score

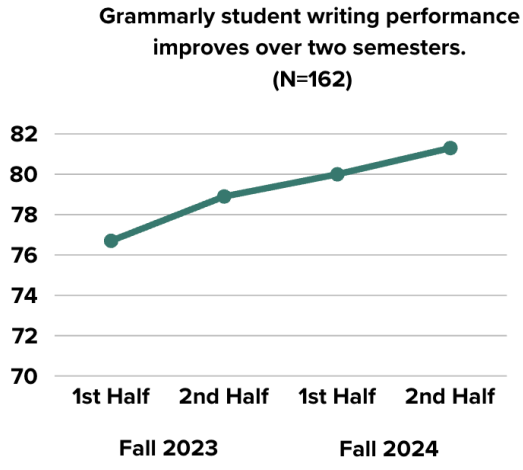
For each Grammarly user, every document they write using Grammarly assistance is scored for performance. Grammarly's performance score combines measures of accuracy, clarity, engagement, and delivery and benchmarks the score of each document against tens of millions of daily users with similar writing goals. For example, a score of 90 means the writing is stronger than 90% of comparable users. By analyzing how their performance score changes for long-form writing (i.e., above a set word-count threshold) over time, we can see if students' writing improves with Grammarly—not just their final drafts. This metric helps distinguish genuine writing development from surface-level editing.

Using this measure, students using Grammarly showed consistent improvement: Fall 2023 users improved an average of 2.14 points from the first to the second half of the semester ((t(563) = 4.26, $p < .001$); Fall 2024 users improved 1.28 points (t(306) = 1.99, $p < .05$; see Figure 6, below).

Of the 162 students in the study who used Grammarly in writing-intensive courses across both academic years, performance scores showed consistent improvement, from 76.7 in the beginning of Fall 2023 to 81.3 by the end of Fall 2024—suggesting that sustained usage supported continued writing development for these students (see Figure 7, below).

Figures 6 and 7. Student Writing Performance by Semester





Grade Point Average (GPA)

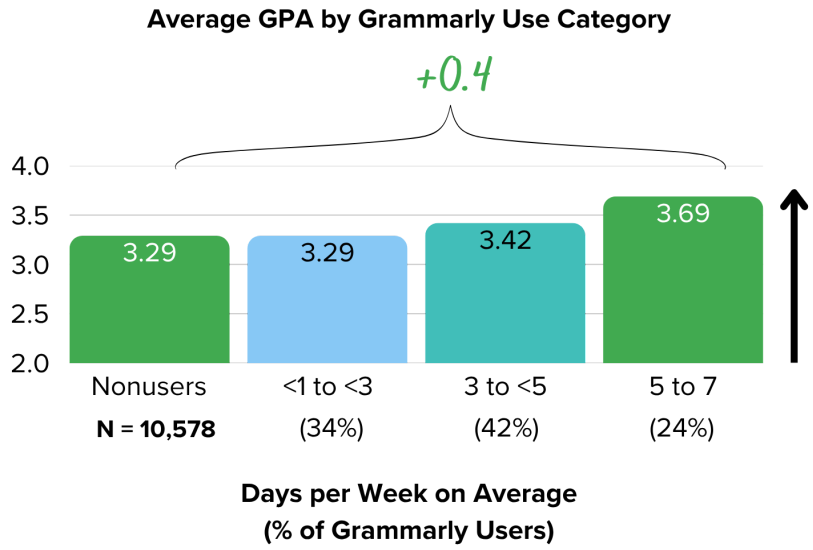
GPA is a key academic outcome and one of the clearest near-term indicators of postsecondary success. A multiple regression analysis was conducted to predict student GPA, which included predictors of High School GPA, Race/Ethnicity, Pell Grant status, and International Student status. The multiple regression model was statistically significant, $F(12, 10879) = 20.83$, $p < .001$. The Grammarly user condition showed a significant positive effect on GPA, $\beta = .17$, $p < .001$. These findings suggest that Grammarly users generally found greater academic success than their nonuser peers.

Usage Frequency

Academic support interventions are typically considered most effective when used regularly. To test whether this pattern held true for Grammarly's writing support tool, we organized students into three usage levels based on their average weekly engagement with Grammarly: low usage (< 3 days per week), moderate usage (3 to 4.9 days per week), and high usage (5+ days per week). The relationship between Grammarly usage frequency and academic outcomes provided an opportunity to determine optimal implementation patterns for writing support technologies.

Most compelling was the clear relationship between usage and GPA. Nonusers and low-usage students both averaged 3.29 GPAs; however, students using Grammarly 3 to 4.9 days per week had higher GPAs (3.42), and high-usage students (5–7 days per week) reached 3.69, a statistically significant difference ($F(3, 10887) = 14.48$, $p < .001$; see Figure 8). This 0.4 GPA difference between high-usage and non-usage groups, nearly half a letter grade improvement, suggests that consistent engagement with writing support can unlock substantial academic benefits. The relationship was significant, indicating that Grammarly's impact extends beyond remedial support to enhance academic performance across all achievement levels.

Figure 8. Average GPA by Usage Frequency



Qualitative Findings: Instructor Perspectives

Analysis of instructor interviews revealed three primary themes characterizing implementation experiences and perceived impacts. These findings provide contextual understanding of the mechanisms underlying the quantitative improvements and illuminate factors that may be important for successful institutional adoption.

Student Access: Breaking Down Help-Seeking Barriers

Instructors reported that students appeared to gain access to writing support without traditional stigma and barriers. Multiple instructors identified shame and fear of remediation as obstacles that may have prevented students from seeking traditional writing support, with Grammarly providing a pathway to assistance that circumvented these psychological barriers.

A writing instructor and course director explained this dynamic: *"Students were less likely to feel that with software. With Grammarly, they were far less likely to feel as though they were being forced to remediate. Whereas if I had forced them to go to the writing center on campus and … to have a report generated of their visit, then they would very much feel like they were being remediated."* This reduction in perceived stigma emerged as one potential mechanism enabling the sustained engagement patterns documented in usage analytics.

A business communication instructor noted: *"Oftentimes, because of the way we have presented kind of help in writing and help in other areas, that it feels like remediation, and there's shame associated with it. You don't feel shame from a computer."* This observation provides insight into why the platform achieved 95% active suggestion implementation rates and may help explain why retention benefits were most pronounced among first-year students.

Generational comfort with technology also appeared to contribute to reduced barriers. An upper-level writing instructor observed: *"Today's student is much more apt and much more comfortable engaging with software where they're not looking someone in the eyes and feeling dumb."* This comfort level may contextualize the sustained usage patterns observed across demographic groups.

Instructor Impact: Reduced Grading Burden

Instructors reported that the reduction of mechanical errors in student submissions allowed them to focus more effectively on content rather than on grammar. This shift corresponded to observable improvements in student writing quality and generated efficiency gains in both instruction and assessment.

An introductory writing instructor reported: *"This helped improve my ability to read their writing because it was far fewer comma splices and things like that."* This observation aligns with the systematic writing performance improvements documented in Grammarly's performance metrics, where students consistently demonstrated measurable gains in accuracy and clarity.

The product appeared particularly beneficial for English-language learners, providing targeted support that addressed specific linguistic challenges. A business communication instructor shared a detailed example: *"I told [a student], tell your dad to switch from paying for ChatGPT to paying for Grammarly … because he didn't need help with generative ideas or organization or flow or anything. What he needed was grammar in English … It helped the clarity of his writing a lot."* Such targeted interventions may help explain why GPA improvements appeared across demographic groups, including the 6% international student population.

Integration Success: Complementing Existing Writing Tools

Instructors found that Grammarly integrated easily and effectively in their ecosystem of existing writing tools, including Microsoft Word and Outlook. Rather than requiring pedagogical restructuring, the product functioned as a supplement that enhanced existing instructional approaches. Microsoft Word emerged as the foundational tool for writing in most courses. An introductory writing instructor explained: *"I always would spend one whole class within the first week … I'll have the students bring in their computers, and we set up Word."*

Within this ecosystem, Grammarly provided enhanced capabilities that extended existing support mechanisms. A business communication instructor noted: *"Word has those style checks and grammar style refinements. But then I started suggesting on top of that, Hey, download Grammarly. Some students took to that because it embedded in other tools and has a browser plug-in."* However, concerns about AI features emerged as an implementation consideration. A business and technical communication instructor who had previously advocated for the product stated: *"I'd been promoting Grammarly for several years because the students I have that used it–it improved their writing. But when Grammarly went full over into that whole AI, I told my students not to use it anymore."* This tension highlights the importance of feature-specific training and clear institutional policies to maintain the trust relationships necessary for sustained engagement.

These qualitative findings suggest that successful implementation may depend on addressing psychological barriers to help seeking, maintaining instructor confidence in pedagogical value, and ensuring seamless integration within existing educational technology ecosystems.

Discussion

Scale and Duration Address Previous Research Gaps

This study addresses some of the methodological limitations present in previous research on automated writing feedback tools. The relatively large sample of 811 Grammarly users compared with 9,890 nonusers across multiple courses and subject areas provides more robust evidence than previous studies examining 54–100 students (O'Neill & Russell, 2019; Ghufron & Rosyid, 2018). This scale enables the detection of smaller but meaningful effects while supporting generalizability across diverse student populations.

The full semester analysis and year-over-year examination extend beyond the short-term interventions characteristic of earlier research. While O'Neill and Russell (2019) examined immediate student perceptions and Ghufron and Rosyid (2018) focused on brief skill assessments, this investigation tracked academic outcomes across entire academic terms, capturing both immediate and sustained impacts on student performance.

The observed GPA improvements of .17 points aligns with Sullivan and Tinberg's (2006) findings demonstrating that students with strong writing skills achieve 10%–25% higher GPAs than peers with weaker writing abilities. The impact of Grammarly usage levels on GPA observed in this study—with high-frequency users averaging 3.7 GPA versus 3.3 for nonusers—supports the hypothesis that Grammarly use leads to improved writing proficiency. This proficiency then leads to greater academic achievement.

Likewise, differences in course completion rate by condition provided particularly meaningful evidence of the impact of Grammarly use. The differences in overall retention in school, especially the dramatic differences for first-year Grammarly users, support the conclusions of Graham and Perin's (2007) research documenting 20%–40% improvements in course completion rates through writing support programs. The higher STEM course completion rates directly address the issues of writing challenges across various disciplines as identified by Galdonez (2025) regarding challenges with technical communication.

Instructors Provide Examples of Implementation Realities

Instructor interviews illuminated implementation dynamics that contextualized the quantitative findings while addressing gaps in existing literature. The consistent framing of Grammarly as a supplement rather than a replacement—facilitated by how easy it is to integrate, including as a browser extension—suggests the need for an integrated writing support ecosystem, validating calls for comprehensive rather than isolated technological interventions.

The documented reduction in stigma associated with seeking help directly addresses Lundin et al.'s (2023) findings about barriers to traditional writing center access. Instructor observations that *"Students were far less likely to feel as though they were being forced to remediate"* when using Grammarly, as compared with face-to-face consultation, provided a qualitative explanation for the high implementation rate of active suggestions and sustained engagement patterns revealed in analysis of the product data. This stigma reduction mechanism helps explain why retention benefits proved most pronounced among first-year students, who often face the steepest adjustment challenges.

Concerns about AI features by some instructors reflects broader academic integrity discussions documented by Perkins (2023) and Watson (2025). The 95% of higher education leaders expecting academic integrity impacts from generative AI tools suggests that implementation success depends on careful feature selection, ongoing instructor training, and coaching (Watson, 2025). These implementation considerations will be especially critical as new features are released in order to maintain the relationships that facilitate strong usage patterns associated with positive academic outcomes.

Beyond Surface-Level Improvements

The retention and GPA outcomes identified in this study suggest benefits beyond the mechanical error correction identified in earlier studies (e.g., Zinkevich & Ledeneva, 2021). Although such previous research documented surface-level accuracy improvements, this investigation indicates impacts on fundamental academic success metrics including course completion, persistence, and achievement.

Usage patterns identified in this study provide evidence of intense and sustained engagement rather than passive tool use. Over 2,000 weekly users were consistently working on three to four long-form documents, with 95% actively implementing suggestions, indicating genuine integration into academic workflows rather than sporadic consultation. This engagement reflects the product's design, whereby it presents approximately 15–20 targeted suggestions per writing session, requiring a student to address each recommendation individually through intentional, methodical effort.

The dose-response relationship—with GPA advantages scaling from no effect for low-usage students to .40 higher GPA for high-frequency users—supports scaffolded learning theory and immediate feedback benefits documented by Opitz et al. (2011). The systematic writing performance improvements demonstrate that regular engagement with automated feedback facilitates skill development rather than dependence on the technology for assistance.

These patterns align with Vygotsky's Zone of Proximal Development theory, suggesting that automated feedback provides appropriate scaffolding for diverse learners. The consistency of benefits across demographic groups indicates that technological support can address the equity gaps identified in the introduction, particularly for first-generation students and those from underrepresented backgrounds who make up significant portions of FAU's student population.

Study Limitations

Several limitations should be considered when interpreting these findings. The voluntary adoption model introduces potential self-selection bias, as students choosing to use Grammarly may possess different motivation levels or academic orientations than nonusers. While demographic and pre-intervention performance controls partially address this concern, seeing consistent results from two different cohorts of students (Fall 2023 and Fall 2024) helps ease some concerns about these limitations; however, unmeasured characteristics may still influence both platform adoption and academic success.

The retrospective analysis design, while reflecting authentic implementation conditions, limits causal inferences. Although the consistent patterns across multiple outcome measures and the dose-response relationship strengthen causal plausibility, randomized controlled trials could provide more causal evidence of Grammarly's impact on student outcomes.

Measurement of writing improvement presents inherent challenges for standardization across disciplines and assignments, particularly given the lack of consistent writing assessments that all college students take within courses or across universities, unlike K–12 systems. While Grammarly's performance score provides a consistent metric, it is an embedded assessment that

monitors students over time and compares them to a sample of other students rather than a particular criterion or norm.

Data collection for this study took place before Grammarly's generative AI features were made available to students at FAU. This limits how well the findings apply to the version of Grammarly with the latest generative AI tools. However, the primary utility and features of Grammarly in 2025 were already present at the time of data collection. Given that some instructors have concerns about students' use of generative AI and that 56% of higher education leaders expect major impacts on academic integrity from generative AI (Watson, 2025), implementation of Grammarly with generative AI features should be a priority in future studies.

Suggestions for Future Research

Future investigations should examine longitudinal impacts with current generative AI–enhanced versions, given the rapid evolution of automated writing assistance capabilities, using either cross-cohort comparisons or by conducting large quasi-experimental studies. Understanding how instructor support and training may impact student usage and outcomes represents a critical research gap. The variation in instructor attitudes toward Grammarly integration, particularly regarding generative AI–enhanced features, suggests that implementation success could depend on factors beyond product availability to students. Research examining instructor support and guidance for implementation that optimizes both usage patterns and pedagogical integration would inform institutional adoption strategies.

Expanding analysis to full academic years (rather than isolated semesters) would provide insight into long-term academic outcomes including retention and degree completion. For example, whereas the current study documented single-year retention benefits, multiyear tracking would determine whether early advantages translate into graduation rate improvements and sustained academic success.

In addition, discipline-specific analyses comparing courses with and without intensive writing requirements would illuminate disciplinary differences in product effectiveness. The particularly strong effects observed in STEM courses suggest that writing support needs and effects may vary across academic contexts, warranting research into optimal implementation strategies for various disciplines.

Conclusion

The evidence in this study indicates that Grammarly's AI-powered personalized writing coach can provide meaningful benefits complementing traditional writing instruction and as part of a 21st-century college education. As colleges and universities deal with changing AI policies and

seek out proven solutions for diverse student groups, the benefits demonstrated in this study—from better retention to improvements in writing skills—demonstrate that well-designed technology products can support instructional expertise. Postsecondary institutions' focus should be on using technology that fits educational aims while supporting evolving policies on academic integrity. As personalized writing coaches like Grammarly offer more diverse generative AI features to meet the changing needs of students and instructors, universities can integrate them wisely, creating writing support systems that are inclusive and effective for all students.

Acknowledgments

The authors of this study would like to express their deepest gratitude to Florida Atlantic University for partnering with LXD Research to complete this study. The authors also want to express their sincere thanks to Grace Baker-Whitcomb, Abigail Oakes, Ying Liu, James Capp, Robert Wicks, and Wendy Hinshaw for contributing to this work.

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Appendix

Statistical Citations by Key Finding

Key Finding: Course completion rates were 3.3% higher for Grammarly users vs. nonusers

All students: $\chi^2(1, N = 12{,}822) = 10.1806$, $p = .001$.

Students in STEM courses: $\chi^2(1, N = 3{,}473) = 3.7651$, $p = .052$.

Key Finding: Retention rates were significantly higher for Grammarly users (80%) vs. nonusers (74%)

$\chi^2(1, N = 13{,}020) = 11.76$, $p = .001$. Retention defined as enrollment in spring semester or graduation.

$\chi^2(1, N = 12{,}282) = 23.17$, $p < .001$, $\varphi = .043$. Dropout is defined as non-enrollment without transfer to another institution.

$\chi^2(1, N = 12{,}282) = 11.82$, $p < .001$, $\varphi = .031$. Transfer rates based on institutional records of student movement to other colleges.

$\chi^2(1) = 24.53$, $p < .001$, $\varphi = .067$. First-year dropout analysis included 267 Grammarly users and 5,180 comparison students.

Key Finding: Students' writing performance increased systematically over time using Grammarly

Fall 2023: $t(563) = 4.26$, $p < .001$; Fall 2024: $t(306) = 1.99$, $p = .047$.

Based on 162 students who used Grammarly consistently during both semesters.

Key Finding: Students averaged 3.7 GPA if they use Grammarly 5–7 days per week vs. 3.3 for nonusers

ANCOVA with post-hoc comparisons, $F(3, 10887) = 14.48$, $p < .001$.