

Effect of High School Academic Writing Interventions on College Readiness Outcomes Among Rural US Students: A Systematic Review

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ADMINISTRATIVE INFORMATION**Support** - No external funding.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202630017**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 6 March 2026 and was last updated on 6 March 2026.**INTRODUCTION**

Review question / Objective Among US high school students, what is the effect, if any, of writing or literacy interventions compared to usual curriculum, on student self-efficacy?

Rationale Educational attainment in rural America has increased over recent decades, but significant rural–urban disparities persist, particularly in college degree attainment. Data from the U.S. Department of Agriculture’s Economic Research Service indicate that while the overall share of rural adults with a bachelor’s degree has risen, the gap between rural and urban degree attainment has widened over time, reflecting persistent structural inequalities in educational access and opportunity (ERS, 2025).

Research consistently shows that rural high school students enroll in postsecondary education at lower rates than their nonrural peers even when accounting for socioeconomic characteristics. For

example, Wells, Chen, Bettencourt, and Haas (2023) found that rural students had lower overall college enrollment rates and lower four-year college enrollment than nonrural students in nationally representative longitudinal data, and that these differences were not wholly explained by socioeconomic status alone (Wells et al., 2023). These findings underscore enduring rural–nonrural enrollment gaps and highlight the need to better understand the contextual and individual factors that contribute to these disparities.

Academic self-efficacy — defined as an individual’s belief in their capacity to organize and execute actions required to achieve specific academic tasks — plays a critical role in students’ educational trajectories. Bandura’s Social Cognitive Theory positions self-efficacy as a key determinant of goal setting, persistence, and performance across domains (Bandura, 1986). Social Cognitive Career Theory (SCCT) extends this framework to academic and career decision-making, specifying that self-efficacy influences students’ interests, goals, and choices

regarding educational pathways (Lent et al., 1994). Importantly, research has shown that rural students' beliefs about their ability to complete postsecondary education predict their academic and career pathways, such that higher educational self-efficacy is associated with a greater likelihood of pursuing college rather than entering the workforce immediately after high school (Ali & McWhirter, 2006).

Proficiency in academic writing is widely recognized as a core component of college readiness. Writing ability affects performance on standardized tests, college admission essays, and undergraduate coursework, and students' confidence in their writing can influence their readiness to embark on postsecondary study. Qualitative research on graduates' perceptions of college readiness highlights that students' sense of preparedness — including their confidence in academic communication — shapes how they approach the transition to college. Writing interventions, particularly those structured to build skill and confidence, have been shown to improve writing self-efficacy and performance in various educational settings, suggesting that targeted literacy instruction can be an effective strategy for enhancing students' academic self-beliefs.

Despite this theoretical and empirical groundwork, no systematic review has yet examined whether school-based writing and literacy interventions influence measurable self-efficacy outcomes among rural U.S. high school students. Identifying effective interventions is essential to informing practice and policy that support rural students' college readiness and enrollment, potentially narrowing the rural–urban gap in postsecondary attainment by enhancing students' academic confidence and preparation.

Sources:

Ali, S. R., & Saunders, J. L. (2006). College expectations of rural Appalachian youth: An exploration of social cognitive career theory factors. *Career Development Quarterly*, 55(1), 38–51. <https://doi.org/10.1002/j.2161-0045.2006.tb00003.x>

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45(1), 79–122. <https://doi.org/10.1006/jvbe.1994.1027>

U.S. Department of Agriculture, Economic Research Service. (2025). Educational attainment in rural America rises, but urban areas widen the degree gap. <https://www.ers.usda.gov/index.php/topics/rural-economy-population/employment-education/rural-education>

Wells, R. S., Chen, L., Bettencourt, G. M., & Haas, S. (2023). Reconsidering rural–nonrural college enrollment gaps: The role of socioeconomic status in geographies of opportunity. *Research in Higher Education*, 64(8), 1089–1112. <https://doi.org/10.1007/s11162-023-09737-8>.

Condition being studied This review examines academic writing self-efficacy and literacy preparedness among U.S. high school students, with particular attention to students attending rural schools. Writing proficiency and confidence in academic writing are widely recognized components of college readiness, as students must demonstrate these skills through standardized assessments, college application essays, and coursework during postsecondary education. However, many high school students—especially those in rural areas—may have limited access to structured writing instruction, college-preparatory literacy programs, or academic support resources that promote writing confidence and preparedness for postsecondary study.

Self-efficacy refers to students' belief in their ability to successfully perform specific academic tasks, and research suggests that higher academic self-efficacy is associated with improved academic persistence, performance, and educational aspirations. Writing or literacy interventions implemented in high school settings may improve students' writing ability and their confidence in completing college-level writing tasks.

This systematic review, therefore, examines the existing literature on writing and literacy interventions among U.S. high school students and evaluates whether these interventions are associated with improvements in student self-efficacy related to writing and academic preparedness.

METHODS

Search strategy A comprehensive literature search will be conducted to identify studies examining writing or literacy interventions and their association with student self-efficacy among U.S. high school students. Electronic database searches will be conducted in the following

databases: PubMed/MEDLINE, Embase, Scopus, Web of Science, Cochrane Library.

The search strategy will combine controlled vocabulary terms (when available) and free-text keywords related to three primary concepts: (1) population (high school students), (2) writing or literacy interventions, and (3) self-efficacy or academic confidence.

Example search terms will include combinations of the following keywords:

Population terms:

“high school student*”
 “secondary school student*”
 “adolescent*”
 “grades 9–12”
 “secondary education”

Intervention terms:

“writing intervention”
 “literacy intervention”
 “academic writing”
 “writing instruction”
 “writing program”
 “writing workshop”
 “literacy program”
 “college preparation writing”

Outcome terms:

“self-efficacy”
 “writing self-efficacy”
 “academic self-efficacy”
 “student confidence”
 “perceived preparedness”
 “academic preparedness”

Search terms will be combined using Boolean operators (AND/OR). Searches will be limited to peer-reviewed articles published in English between 2000 and the present.

In addition to electronic database searches, manual searches of reference lists of included studies and relevant review articles will be conducted to identify additional eligible studies. Duplicate records will be removed prior to screening, and all records will be screened using systematic review management software (Covidence).

Participant or population Population: Rural US high school students

Setting: Students enrolled in US high schools

Grade Level: 9-12th grade

Age: 14-18 years

Rurality: Students attending a rural school district (NCES definition); Data on rural students' needs to be reported separately

Rural status will be determined using the National Center for Education Statistics (NCES) locale classification system. Studies will be included if participating schools are classified as rural (locale codes 41–43) or if authors explicitly define rurality using NCES or an equivalent census-based geographic classification.

Exclusion:

Elementary/middle schoolers
 Postsecondary students (community college/university)
 International studies
 Special education-only populations
 Private schools
 Studies where “rural” is implied but not defined and rural outcomes are not separable.

Intervention Intervention / Exposure: Academic writing interventions

Inclusion: Intervention must be supplemental (in addition to “business-as-usual” instruction) and focused on professional/academic writing for postsecondary readiness, such as:
 Reading comprehension programs
 Writing instruction/workshops
 Academic writing curriculum
 College prep literacy programs
 Structured tutoring focused on reading and writing

All above must occur during HS

Exclusion:

Test prep courses only
 Behavioral interventions
 General academic support without a literacy component
 Interventions that are structured with no measured student outcomes (especially no self-efficacy/self-confidence/preparedness measure)
 Purely reading-only programs, unless they explicitly include writing preparedness outcomes aligned to your question.

Comparator Comparison: A standard curriculum, usual instruction, or simply no intervention

Exclusion:

Studies with no comparison group and no baseline (unless your team plans to include pre–post single-group designs; your current draft excludes “no comparison group or baseline”) as well as case reports/case studies.

Study designs to be included Randomized controlled trials, quasi-experimental studies, cohort studies, and cross-sectional studies that evaluate writing or literacy interventions among U.S. high school students and report quantitative measures of student self-efficacy or writing preparedness. Studies must include a comparison condition (e.g., usual curriculum, standard instruction, or no intervention) or a pre–post evaluation of an intervention.

Eligibility criteria Studies will be included if they examine writing or literacy interventions among U.S. high school students (grades 9–12) and report quantitative measures of student self-efficacy related to academic writing or preparedness. Eligible studies must include a comparison condition (e.g., usual curriculum, standard instruction, or no intervention) or a pre–post evaluation of an intervention. Only peer-reviewed studies published in English between 2000 and the present will be included.

Studies will be excluded if they focus on elementary or middle school students, postsecondary populations, non-U.S. populations, or special education–only samples. Studies without measurable self-efficacy outcomes, case studies, editorials, conference abstracts, and non-peer-reviewed publications will also be excluded.

Information sources Electronic searches will be conducted in the following databases: PubMed/MEDLINE, Embase, Scopus, Web of Science, and the Cochrane Library. These databases were selected to capture literature from education, psychology, and interdisciplinary health and social science research.

Additional studies will be identified through manual searches of the reference lists of included studies and relevant review articles. Citation tracking will also be used to identify studies that cite key included articles. Authors will not be contacted for missing data.

All records identified through database searches will be imported into systematic review management software (Covidence), where duplicates will be removed prior to title/abstract and full-text screening.

Main outcome(s) The primary outcome of interest is student self-efficacy related to academic writing and preparedness for postsecondary writing tasks. Self-efficacy will be defined as students’ perceived confidence in their ability to perform writing-related academic tasks, such as composing essays, organizing written arguments, completing college application essays, or performing writing assignments required for postsecondary coursework.

Eligible studies must report a quantitative measure of writing-related self-efficacy or academic confidence. This may include validated self-efficacy scales, standardized survey instruments, or Likert-scale measures assessing students’ perceived writing ability or preparedness for college-level writing.

Outcome data will be extracted at the time points reported in the original studies, including post-intervention measurements and any follow-up assessments when available. Measures of change from baseline or differences between intervention and comparison groups will also be recorded when reported.

Additional outcome(s) Secondary outcomes will include additional indicators related to writing ability and academic readiness when reported by the included studies. These may include measures of writing performance (e.g., rubric-scored essays, standardized writing assessments, or course writing grades), literacy or English achievement scores, and changes in writing-related behaviors such as writing motivation, writing anxiety, or writing strategy use.

Additional outcomes may also include indicators of college readiness associated with writing preparedness, such as completion of college application essays, enrollment intentions, or other measures of perceived academic preparedness.

Data management All records identified through database searches will be imported into systematic review management software (Covidence). Duplicate records will be identified and removed prior to screening. Title and abstract screening will be conducted independently by two reviewers, followed by full-text screening of potentially eligible studies.

Data extraction will be conducted using a pilot-tested data extraction form developed in Covidence. The form will be tested on a subset of included studies and refined prior to full data

extraction to ensure clarity and consistency between reviewers.

Two reviewers will independently extract data from each included study. Disagreements between reviewers during screening or data extraction will be resolved through discussion. Extracted data will be stored within Covidence and exported for synthesis and analysis.

Variables to be extracted: Study design, sample size, participant characteristics, Intervention details, comparator characteristics, primary/secondary outcomes, effect sizes, and confounders adjusted for.

Quality assessment / Risk of bias analysis Risk of bias in included studies will be assessed using the Newcastle–Ottawa Scale (NOS), a validated tool commonly used for evaluating the methodological quality of observational studies. The NOS evaluates studies across three domains: selection of study groups, comparability of groups, and outcome assessment.

Two reviewers will independently assess the quality of each included study using the NOS criteria. Disagreements between reviewers will be resolved through discussion. The results of the risk-of-bias assessment will be considered during the interpretation of the findings. Greater weight will be given to studies with higher methodological quality, and conclusions will be interpreted cautiously when evidence is derived from studies with a higher risk of bias.

Strategy of data synthesis A meta-analysis will not be conducted due to the anticipated heterogeneity across included studies. Specifically, the writing and literacy interventions are expected to vary in format (e.g., curricular models, tutoring, workshops, literacy programs), duration, and delivery setting. In addition, the primary outcome of interest, student self-efficacy, is likely to be measured using different instruments and non-standardized scales. Because these differences make effect sizes unlikely to be directly comparable across studies, quantitative pooling would be inappropriate and potentially misleading. Therefore, a structured narrative synthesis will be performed.

Included studies will be grouped according to study design, population characteristics, and outcome type. Study design groupings will include randomized controlled trials, cohort studies, and cross-sectional studies. Population characteristics will be compared based on the rural definition used

(e.g., NCES versus other definitions), grade level, demographic composition such as socioeconomic status, first-generation college status, and race/ethnicity, as well as geographic region. Outcomes will be grouped into primary outcomes, including student self-efficacy, writing self-efficacy, and perceived preparedness for college writing, and secondary outcomes, such as writing performance and literacy scores.

The findings of included studies will be compared qualitatively by examining the direction of associations, the magnitude of reported effects, and the consistency of findings across similar interventions and populations. Direction of association will be categorized as improvement in self-efficacy, no measurable change, or negative effect. Where reported, the magnitude of findings will be described in terms of statistically significant improvement and relative effect size. Consistency will be assessed by noting whether similar patterns emerge across multiple studies or whether findings are conflicting.

Risk of bias will be incorporated into the synthesis by interpreting findings in the context of methodological quality as assessed using the Newcastle–Ottawa Scale. Greater weight will be given to studies with higher methodological quality, and conclusions will be interpreted cautiously when the available evidence is primarily derived from studies at higher risk of bias.

Finally, the review will identify gaps in the literature by documenting understudied student populations, limited rural geographic representation, inconsistent intervention effects, small sample sizes, lack of longitudinal follow-up, insufficient measurement of writing self-efficacy outcomes, and weak control for confounding variables. This approach will allow the review not only to summarize the current evidence base, but also to identify areas where future intervention research is needed.

Subgroup analysis Where sufficient data are available, subgroup analyses will be conducted through qualitative comparison of study findings across key study and population characteristics. Studies will be grouped by study design (e.g., randomized controlled trials, cohort studies, and cross-sectional studies), as well as by population characteristics such as grade level, socioeconomic status, first-generation college status, and race/ethnicity. Additional subgroup comparisons may be conducted based on the rural definition used (e.g., NCES versus other classifications), geographic region, and type of intervention (e.g.,

writing workshops, literacy programs, tutoring, or curriculum-based interventions).

Outcome-related subgroup comparisons will also be explored by distinguishing between measures of general academic self-efficacy, writing-specific self-efficacy, and perceived preparedness for college-level writing. These subgroup analyses will be used to explore potential sources of variation in findings across studies and to identify patterns in the effectiveness of different types of writing and literacy interventions.

Sensitivity analysis Sensitivity analyses will be conducted to assess the robustness of the findings in relation to study quality and methodological differences. Specifically, analyses will be repeated after excluding studies assessed as having a higher risk of bias according to the Newcastle–Ottawa Scale to determine whether their inclusion influences the overall interpretation of results.

Additional sensitivity analyses may consider differences in study design, sample size, and outcome measurement methods, particularly where studies use different instruments to measure student self-efficacy. These analyses will help determine whether conclusions are consistent across studies with varying methodological rigor and measurement approaches.

Because this review will use a narrative synthesis rather than a meta-analysis, sensitivity analyses will be conducted through qualitative comparison of findings after excluding studies with a higher risk of bias or substantial methodological limitations.

Language restriction Yes. The review will be limited to studies published in English. This restriction is applied due to feasibility constraints and the language proficiency of the review team.

Country(ies) involved United States.

Other relevant information This systematic review is being conducted to synthesize the existing evidence on writing and literacy interventions and their association with student self-efficacy among U.S. high school students. In addition to summarizing current findings, the review aims to identify gaps in the literature related to intervention type, study design, population characteristics, and outcome measurement. Identifying these gaps will help inform the development of future educational interventions designed to improve writing preparedness and academic confidence among high school students.

Any protocol amendments made during the course of the review will be documented and reported in the final manuscript.

Keywords writing intervention; literacy intervention; writing self-efficacy; academic self-efficacy; high school students; secondary education; college readiness; writing instruction; literacy programs; educational.

Dissemination plans The results of this systematic review will be disseminated through submission to a peer-reviewed academic journal and presentation at relevant academic conferences, as well as the expansion of existing interventions already occurring at Baylor University. The findings will also be shared with academic and educational stakeholders interested in literacy interventions and college readiness among high school students. The review aims to inform future research and intervention development related to writing instruction and student self-efficacy.

Contributions of each author

Author 1 - Evan Ashman - Evan Ashman contributed to the development of the research question, study design, and protocol preparation. He will participate in literature screening, data extraction, risk of bias assessment, and synthesis of the review findings.

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Author 2 - Trisha Sudeep - Trisha Sudeep contributed to the development of the research question, study design, and protocol preparation. She will participate in literature screening, data extraction, risk of bias assessment, and synthesis of the review findings.

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