

RESEARCH CARDS

Students who responded to metacognitive and affective questions in addition to text-related questions demonstrated better retention of content material as evidenced by course grades at the end of the study.

Karen S. Smith, Johan Erik Rook & Thomas W. Smith (2007) Increasing Student Engagement Using Effective and Metacognitive Writing Strategies in Content Areas, Preventing School Failure: Alternative Education for Children and Youth, 51:3, 43-48, DOI: [10.3200/PSFL.51.3.43-48](https://doi.org/10.3200/PSFL.51.3.43-48)

These results suggest that students who respond to questions designed to promote thinking, as well as personal connections, experience a positive effect on achievement.”

Karen S. Smith, Johan Erik Rook & Thomas W. Smith (2007) Increasing Student Engagement Using Effective and Metacognitive Writing Strategies in Content Areas, Preventing School Failure: Alternative Education for Children and Youth, 51:3, 43-48, DOI: [10.3200/PSFL.51.3.43-48](https://doi.org/10.3200/PSFL.51.3.43-48)

Writing appears on Kuh’s (2008) list of high-impact practices, is identified by Bean (2001) as “the most intensive and demanding tool for eliciting sustained critical thought” (xiii) and can create more authentic and inviting occasions for learning (Bain, 2004, 62-63).

Bain, K. 2004. What the best college teachers do. Cambridge, MA: Harvard UP.

Bean, J. C. 2001. Engaging ideas: The faculty’s guide to integrating writing, critical thinking, and active learning in the classroom. San Francisco, CA: Jossey-Bass.

Kuh, G. 2008. High-impact educational practices: What they are, who has access to them, and why they matter. Association of American Colleges and Universities, Washington, D.C

The relationship between the amount of writing for a course and students’ level of engagement...is stronger than the relationship between students’ engagement and any other course characteristic.

Light, R. J. 2001. Making the most of college: Students speak their minds. Cambridge, MA: Harvard UP.

The arguments for writing in the sciences are grounded in the beliefs that writing is thinking (Menary, 2007), that writing can deepen learning by activating priming, calibration, chunking, synthesis, reflection, elaboration, and metacognition (Brown, Roediger & McDaniel, 2014), and that writing can empower student success by giving students space to digest course material, raise questions, and formulate opinions in ways that honor student agency (Gottschalk & Hjortshoj, 2004).

Brown, P. C., Roediger, H. L., & McDaniel, M. 2014. *Make it stick: The science of successful learning*. Cambridge, MA: Harvard UP.

Gottschalk, K. & Hjortshoj, K. 2004. *The elements of teaching writing: A resource for instructors in all disciplines*. New York, NY: Bedford/St. Martins.

Menary, R. 2007. Writing as thinking. *Language Sciences*. 29: 621-632.

Land recognized that the first hypothesis (that merely adding writing would automatically improve student learning) was incorrect.

Camfield, E. K., & Land, K. M. (2017). The Evolution of Student Engagement: Writing Improves Teaching in Introductory Biology Courses. *Bioscience: Journal of College Biology Teaching*, 43(1), 20–26.

To be clear, the intention of adding writing to the class was not to make them master writers by the end of the semester but rather to help them more actively engage in their learning and to change their attitudes about writing in science classes, recognizing it as an excellent study tool for digesting course material.

Camfield, E. K., & Land, K. M. (2017). The Evolution of Student Engagement: Writing Improves Teaching in Introductory Biology Courses. *Bioscene: Journal of College Biology Teaching*, 43(1), 20–26.

The goal of low-stakes writing is not to produce excellent pieces of writing but to increase how much students think about, understand, and learn what we are teaching.

How to use writing in your classes to improve student learning. John Jay College of Criminal Justice. (2016, January 6). Retrieved November 8, 2021, from <https://www.jjay.cuny.edu/how-use-writing-your-classes-improve-student-learning>.

As opposed to sitting and listening to a lecture, having to write about ideas forces students to process information actively. Active processing of information forces the brain to translate between mental processing domains, which in turn leads to the formation of distinctive memories and hence to better retention.

How to use writing in your classes to improve student learning. John Jay College of Criminal Justice. (2016, January 6). Retrieved November 8, 2021, from <https://www.jjay.cuny.edu/how-use-writing-your-classes-improve-student-learning>.

Writing is a process of doing critical thinking and a product that communicates the results of critical thinking.

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Study after study confirms that students who process course material through writing retain that information longer, improve critical thinking skills, and become more nuanced readers and writers.

How to use writing in your classes to improve student learning. John Jay College of Criminal Justice. (2016, January 6). Retrieved November 8, 2021, from <https://www.jjay.cuny.edu/how-use-writing-your-classes-improve-student-learning>.

The more writing done in a course, the more the student engages with the material in the course.

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If you want your students to meaningfully process what you are teaching, there is no better way than to assign writing prompts that ask them to read assigned materials carefully, find information that will help them think through ideas, and then write about what they have learned or what they think about a particular topic.

How to use writing in your classes to improve student learning. John Jay College of Criminal Justice. (2016, January 6). Retrieved November 8, 2021, from <https://www.jjay.cuny.edu/how-use-writing-your-classes-improve-student-learning>.

Instructors typically think they must be English instructors to assign and assess writing, or that teaching writing will come at the expense of teaching content.

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Students are too often passive readers. If they are instructed to write notes in the margins of their books—where they can challenge new notions or ask questions—the reading process becomes far more active.

Motivating students to read and write in all disciplines: U-M LSA Sweetland Center for Writing. LSA. (n.d.). Retrieved November 8, 2021, from <https://lsa.umich.edu/sweetland/instructors/teaching-resources/motivating-students-to-read-and-write-in-all-disciplines.html>.

When writing in the margins, students find that there is “room” on the page for their conversations—a visual reminder that all texts are part of an ongoing discussion and are not the last word on a given subject.

Motivating students to read and write in all disciplines: U-M LSA Sweetland Center for Writing. LSA. (n.d.). Retrieved November 8, 2021, from <https://lsa.umich.edu/sweetland/instructors/teaching-resources/motivating-students-to-read-and-write-in-all-disciplines.html>.

Students can exchange their “marked-up” texts and notes with other students, so that each can see the kind of active reading the others are doing.

Motivating students to read and write in all disciplines: U-M LSA Sweetland Center for Writing. LSA. (n.d.). Retrieved November 8, 2021, from <https://lsa.umich.edu/sweetland/instructors/teaching-resources/motivating-students-to-read-and-write-in-all-disciplines.html>.

Nowadays, some students have low engagement in writing classes because the genres of writing inside the classes are disconnected from students’ real lives. Since today’s students are close to social media, integrating it into writing activities can promote student engagement in the learning process.

Prasetyawati, O. A., & Ardi, P. (2020). Integrating Instagram into EFL Writing to Foster Student Engagement.. The Journal of Teaching English with Technology, 20(3), 40–62.

The findings showed that Instagram promoted student engagement in five ways, namely allowing the students to be more actively involved in the learning process, providing a new learning environment for the students, providing greater target readers, allowing the collaboration and interaction between the students, and facilitating the students to choose their own learning style during the process of writing.

Prasetyawati, O. A., & Ardi, P. (2020). Integrating Instagram into EFL Writing to Foster Student Engagement.. *The Journal of Teaching English with Technology*, 20(3), 40–62.