EVIDENCE SUPPORTING THE WRITING REVOLUTION METHOD

Given the importance of writing skills, it's surprising that there has been <u>so little high-quality</u> <u>research</u> into effective methods of writing instruction (Barshay, 2019). To the extent that there has been research, however, it clearly supports various aspects of TWR's approach. For example:

Explicitly teaching strategies for planning, revising and editing writing has had strong and consistent positive effects on writing skill across grade levels. (Graham et al., 2012; Graham & Perin, 2007)

Embedding writing instruction in content and having students write about what they are learning in English language arts, social studies, science, and math has boosted reading comprehension and learning across grade levels. (Graham et al., 2020; Graham and Hebert, 2010)

Providing feedback on the effectiveness of students' writing and monitoring students' progress has improved students' writing. (Graham et al., 2011)

Summarization and sentence-combining, both TWR strategies, have had strong positive effects on learning and on writing skill. (Graham & Perin, 2007)

Teaching sentence-construction skills has improved reading fluency and comprehension. (Graham and Hebert, 2010)

The What Works Clearinghouse, part of the federal government's Institute of Education Sciences, has recommended that students be taught to construct sentences, specifically mentioning sentence-combining and sentence expansion, another strategy used in TWR's method. (IES Practice Guide, 2018)

Cognitive science research that has not focused primarily on writing instruction also provides support for TWR's approach. For example:

Retrieval Practice or the Testing Effect: Recalling information that has been slightly forgotten has been found to provide a powerful boost to retention. (Roediger and Karpicke, 2006.) While this effect has generally been studied in the context of testing or quizzing, retrieving information is also an inherent part of the writing process.

The Protege Effect: Explaining information to another person in one's own words—or even planning to—increases both comprehension and retention. While this effect has been studied primarily in the context of having one student explain something orally to another, virtually any writing activity requires explaining something in one's own words to a reader. (J.F. Nestojko et al., 2014; Chase et al., 2009)

More generally, TWR's approach is supported by well-established research on working memory, which is roughly equivalent to short-term memory or consciousness. Working memory can only hold a few items for a limited period of time—perhaps 10 or 15 seconds. Inexperienced writers may be trying to juggle everything from letter formation to spelling to word choice to

organization in working memory, in addition to the content they are writing about. Writing <u>can</u> <u>impose</u> such a heavy burden on working memory that students become overwhelmed—unable either to improve their writing skill or to benefit from the positive effects that writing can have on reading comprehension and learning in general. (Wexler, 2019)

TWR's method helps to alleviate this burden on working memory—or "cognitive load"—in at least three ways:

1. Writing instruction begins at the sentence level if that is what students need. Limiting the amount of writing that students are asked to do—and providing parameters and guidelines in the form of sentence stems, etc.—lightens the cognitive load and frees up space in working memory that students can devote to absorbing and analyzing content.

2. Repeated practice with writing conventions, along with prompt feedback, enables students to store these conventions in long-term memory, also freeing up space in working memory. For example, if students need to connect ideas, they will have an arsenal of transition words in long-term memory to draw on (e.g., *however, especially, in the end*).

3. With longer writing, the kind of logical, linear outlines that TWR teaches students to create enable them to organize their thoughts before writing and provide them with a clear map during the writing process. Students don't have to rely on working memory to stay on track, avoid repetition, etc.

Additional research on effective methods of writing instruction is sorely needed. In the meantime, evidence from the current limited research on writing and the broader field of cognitive science indicates that TWR's approach can have significant positive effects not only on students' writing but also on their reading comprehension, retention of information, and analytical thinking.

References:

Barshay, J. (2019) Scientific evidence on how to teach writing is slim. *Hechinger Report*, https://hechingerreport.org/scientific-evidence-on-how-to-teach-writing-is-slim/

Chase, C.C., Chin, D.B., Oppezzo, M.A., and Schwartz, D.L., Teachable agents and the protégé effect: Increasing the effort towards learning. *Journal of Science Education and Technology* (2009). 18, pp. 334-352.

Graham, S. & Perin, D. (2007). Writing Next: Effective strategies to improve writing of adolescents in middle and high schools—A report to Carnegie Corporation of New York, Washington, DC: Alliance for Excellent Education.

Graham, S., and Hebert, M. A. (2010). *Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation Time to Act Report.* Washington, DC: Alliance for Excellent Education.

Graham, S., Harris, K., and Hebert, M.A. (2011). *Informing writing: The benefits of formative assessment. A Carnegie Corporation Time to Act report.* Washington DC: Alliance for Excellent Education.

Graham, S., Harris, K., and Hebert, M.A. (2011). *Informing writing: The benefits of formative assessment. A Carnegie Corporation Time to Act report.* Washington DC: Alliance for Excellent Education.

Graham, S., Kiuhara, S.A., and MacKay, M. (2020) The effects of writing on learning in science, social studies, and mathematics: A meta-analysis. *Review of Educational Research*. vol. 90, no. 2, pp. 179-226.

Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, U.S. Department of Education (2018). *Teaching elementary school students to be effective writers*.

https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/WWC_Elem_Writing_PG_Dec182018.pdf#pag e=18

Nestojko, J.F., Bui, D.C., Kornell, N., and Bjork, E.L. (2014). Expecting to teach enhances learning and organization of knowledge in free recall of text passages. *Memory & cognition*. 42. 10.3758/s13421-014-0416-z.

Roediger, H.L., and Karpicke, J.D. (2006) The power of testing memory: Basic research and implications for educational practice. *Perspectives on Psychological Science*, vol. 1, no. 3.

Wexler, N. (2019). Writing and cognitive load theory. ResearchED Magazine, https://researched.org.uk/writing-and-cognitive-load-theory/