

Montana ELA Standards Revision: Brief 2

Relationship Between Reading and Writing

April 2024

Introduction

For the second of five briefs, REL Northwest summarized research and common theoretical frameworks to respond to the following question: *What is the relationship between reading and writing across grade levels?*

The set of briefs aims to provide the Montana Office of Public Instruction (OPI) with relevant research to help their English language arts (ELA) standards development team generate actionable, evidence-based state standards that will form the foundation for literacy instruction.

The brief is organized into two sections:

1. Overview of the relationship between reading and writing
2. Evidence-based recommendations for developing effective writing

Throughout the brief, REL Northwest has defined key terms to establish shared understanding of relevant concepts and has embedded guided questions that prompt the reader to pause, reflect on what was read, and consider how the information presented can be used to inform the standards revision process.

As sources for evidence, this brief draws upon

- large **meta-analyses**, which are quantitative syntheses of empirical studies from multiple independent researchers who used causal (e.g., quasi-experimental, experimental) methods to evaluate a particular literacy approach and effects on specific learner outcomes;
- **Institute of Education Sciences (IES) practice guides** developed by the U.S. Department of Education to synthesize hundreds of individual studies and translate the available rigorous research evidence over the past few decades into actionable recommendations for practitioners; and
- **individual peer-reviewed research studies and research reviews** on underlying theoretical frameworks, extensions and considerations for reading instruction, and additional evidence identified by subject matter experts or included in other briefs within this series.

Overview of the relationship between reading and writing

This section outlines common theoretical frameworks used to describe the relationship between reading and writing, the research on specific reading and writing activities and how they support reading and writing performance, and the multidimensional nature of writing.

It primarily pulls from two large meta-analyses: a peer-reviewed meta-analysis of 95 experiments on the impact of writing instruction on reading, which included learners from grades 1–12 (Graham & Hebert, 2011) and a peer-reviewed meta-analysis of 89 studies that examined the impact of reading interventions on writing in preschool through grade 12 (Graham et al., 2018). It also includes

evidence from IES’s practice guide *Teaching Secondary Students to Write Effectively* (Graham et al., 2016) that summarizes 15 causal studies on teaching adolescents to write effectively and evidence from peer-reviewed articles—identified by subject matter experts—that provide theoretical support and practical considerations for adapting writing instruction.

Theory underlying the relationship between reading and writing.

Reading and writing are connected processes whereby readers read what others write, and writers write so that others may read (Graham, 2020). Instruction and development in one area improve the other, and learners who have difficulty with either reading or writing often have challenges with the other (Graham, 2020). Empirical evidence shows there are strong associations between individuals’ word reading and printing skills as well as between their reading comprehension and writing cohesion competencies (Conrad & Deacon, 2022; Graham & Hebert, 2011; Zagata et al., 2023).

Even though specific reading or writing acts may not directly involve the other, the two domains share underlying cognitive processes (Graham, 2020; Graham et al., 2016). This idea—or *shared knowledge model*—allows learners to draw on common sources of knowledge when reading and writing, namely general knowledge, meta-knowledge, pragmatic knowledge, and procedural knowledge (table 1). Through recognizing and understanding how writers convey meaning through text as they read, learners can intentionally communicate through their own writing. Thus, reading and writing can reinforce one another.

Table 1. Shared knowledge model of reading and writing

	Reading	Writing
Domain or general knowledge about the content in a text	Used to understand and respond to text	Used to obtain ideas and support for writing
Meta-knowledge about function and purpose of text	Used to comprehend what is read	Used to construct written messages
Pragmatic knowledge of text features, words, syntax, and usage	Used to decode words and comprehend texts	Used to encode words and construct texts
Procedural knowledge of how to set goals, access information, question, predict, summarize, visualize, and analyze	Used to understand what is read	Used to regulate and engage in the processes of writing

Connections across writing and reading in all disciplines, not just in ELA, helps learners develop their reading comprehension, critical thinking skills, and content knowledge in addition to their writing skills across subject areas (Graham et al., 2016). For example, incorporating argumentative writing in science classes can enhance learners’ understanding of specific concepts while also helping them build overall scientific reasoning by using evidence to support or disprove scientific hypotheses (Newell & Misar, 2022; Drew et al., 2017). Furthermore, prompting learners to create informational texts (e.g., reports) in one subject area can help develop academic language—or the language in which disciplinary knowledge is codified, transmitted, and evaluated—that is essential to academic success (Fang & Park, 2020).

⇒ To learn more about evidence-based reading instructional practices in the early grades, see Brief 5, entitled *Disciplinary Literacy Processes and Procedures*, within this series.

Pause and reflect

Why is it important to consider how reading and writing are connected processes?

Writing activities and practices that improve reading performance

The following writing instructional practices have been shown to improve reading performance (Graham & Hebert, 2011):

- **Writing about materials that learners have read** includes asking and answering questions, note-taking, writing a summary, or writing an extended piece (e.g., in the form of narration, application, or persuasion). Writing about reading materials improves comprehension, both among learners as a whole and learners who are classified as weaker readers and/or writers (based on studies with learners in grades 2–12). Findings hold across types of text (e.g., expository, narrative) and subject areas.
- **More time spent writing** includes the time learners spend composing texts in varied activities (e.g., journaling, writing on self-selected topics or personal experiences, emailing). Increasing how much learners write enhances reading comprehension in studies that included typically developing learners in grades 1–6.
- **Explicit writing instruction** includes teaching approaches to writing (e.g., planning, drafting, organizing, revising writing), vocabulary of writing, the functions and features of different texts, sentence and paragraph instruction, spelling instruction, and handwriting or typing instruction. Teaching learners how to write improves their reading comprehension (in studies with learners in grades 4–12), reading fluency (in studies with learners in grades 1–7), and word reading (in studies with learners in grades 1–5). Explicit writing instruction in the process of writing and in word reading skills contributes to better reading outcomes for all learners and for weaker readers and/or writers.
- **Making direct connections between reading and writing** includes being instructionally explicit about the connections between reading and writing, (e.g., “read like a writer and write like a reader”) as well drawing attention to graphophonemic and morphological connections between reading and writing.

Reading activities and instructional practices that improve writing performance

Additionally, the following reading activities and instructional practices can improve writing performance across grade levels (Graham et al., 2018):

- **Interacting with authentic and varied texts** involves reading authentic texts (e.g., real books and/or websites instead of worksheets and practice tests) inside each of the disciplines (e.g., ELA, science, social studies, math, art). Increasing children’s exposure to different types of texts (e.g., length, content, purposes) produces meaningful improvements in writing quality and in spelling. Specifically, in studies with learners in preschool through grades 12, increasing the amount of time spent reading, reading and analyzing writing produced by peers, and observing other readers interact with text enhances learners’ writing quality and/or spelling.
- **Explicit reading instruction** includes time spent on foundational skills and strategies for younger children (e.g., comprehension, phonological and phonemic awareness, phonics, fluency, and vocabulary) and older learners (e.g., syntax, oral and silent reading fluency, advanced word identification and knowledge strategies, comprehension, and vocabulary). This also includes explicitly teaching the functions and elements of different types of texts. In studies including participants in preschool through grade 12, explicit reading instruction is positively associated with writing quality, writing output, and spelling in both the short and long term for both typical learners and learners experiencing challenges in learning to read or write.

Overall writing quality refers to the overall effectiveness of writing in terms of clarity, coherence, organization, grammar, punctuation, vocabulary usage, style, tone, and suitability for an intended audience.

Pause and reflect
How do these practices support one another?
How can all practices be embedded in literacy instruction?

Multidimensional nature of writing development

Effective writing is a vital component of literacy achievement and a lifelong skill. To develop effective writers, writing instruction should address not just the *products* of writing, but also cognitive *processes* that facilitate writing, social and contextual *practices* around writing, and different *pathways* to writing (Smith, 2019).

The following broad theoretical principles can guide how educators approach writing development across disciplines and grade levels (Bazerman et al., 2017):

- Writing develops across the lifespan as part of changing contexts.
- Writing development follows no single path.
- Writers adapt to changing social needs, opportunities, resources, and technologies of their time and place.
- Writing has a reciprocal and mutually supportive relationship with other areas of learning development.
- Language resources can be used in different ways to present meaning in written text.
- Curriculum plays a significant and formative role in writing development.

Evidence-based recommendations for developing effective writing

This section summarizes evidence-based practices for developing effective writers, instructing writing, and producing effective writing across grades, with special considerations for writing in digital spaces, supporting biliteracy and multiliteracy through writing, and promoting learners' reflexivity and identify development.

The following practices are primarily drawn from two IES practice guides: *Teaching Secondary Students to Write Effectively* (Graham et al., 2016), which includes recommendations based on 15 causal studies on teaching adolescents to write effectively, and *Teaching Elementary School Students to be Effective Writers* (Graham et al., 2012), which includes 34 causal studies on teaching effective writing in elementary school.

Evidence in this section also includes peer-reviewed articles identified by subject matter experts that provide theoretical support and practical considerations for adapting writing instruction to meet the unique needs of diverse learners.

Identifying, celebrating, and capitalizing on what learners already know about writing

Use dynamic forms of assessment (formal and informal) to identify what young children know (e.g., print awareness, alphabetic principle, and forms of writing). Then, provide learners with opportunities to practice what they know while transitioning to more academic ways of engaging in writing.

Explicitly teaching writing skills, processes, or knowledge

This takes place through sustained, direct, and systematic instruction and includes a gradual release of responsibility from teacher to learner (figure A1) by first ensuring learners have the knowledge they need to understand the writing concept that is being taught, and then describing the new skill or process, modeling the target skill or process, and guiding learners as they practice applying the strategy.

Based on findings from studies that include participants in **grades K–6**, explicit teaching is recommended for the following writing-related topics (Graham et al., 2012):

- The writing process (e.g., planning and goal setting, drafting, sharing and evaluating, revising, and editing; figure A2) as a flexible means through which writers compose texts. Teachers should use grade-appropriate strategies for facilitating the writing process
- Different purposes and audiences for writing (e.g., describing, narrating, informing, persuading, and analyzing) and strategies for effectively addressing them
- Foundational skills (e.g., handwriting, spelling, sentence construction, typing, word processing)
- Connections between reading and writing (e.g., word study in reading should correspond to word study in writing)

Results from studies with learners in **grades 4–12** recommend explicit teaching in the following (Graham et al., 2016):

- The writing process (see figure A2)
- Writing strategies for specific audiences and purpose
- Summarization of one or more texts
- Sentence combining

Scaffolding learners' writing

Scaffolding learners' writing refers to providing assistance that helps the learner carry out increasingly complex types of writing. The following scaffolding strategies are recommended for writing based on results from studies with learners in **grades K–6** (Graham et al., 2012):

- Setting specific and concrete writing goals for each product (e.g., a rubric or checklist) that learners can use to regulate their own writing
- Exposing learners to a variety of texts—through both read-alouds and independent reading—that support the lesson, are appropriate for learners' reading skills, and provide them with exemplary models for writing
- Encouraging learners to emulate characteristics of exemplar texts, whether focused on sentence patterns or substituting words in appropriate places, retelling a story, or using texts as a springboard for their own writing

The following scaffolding strategies are recommended for adolescent writers, based on results from studies with participants in **grades 4–12** (Graham et al., 2016):

- Engaging in prewriting activities (e.g., mapping or discussing ideas to generate or organize writing)
- Engaging in writing based on inquiry (e.g., comparing and contrasting, collecting and evaluating data to answer specific questions, synthesizing information)
- Studying and emulating written exemplars to highlight key features of different types of text
- Setting specific writing goals for each product (e.g., a rubric or checklist) that learners can use to organize and evaluate their own writing

Exemplar texts are examples that clearly illustrate specific features of effective writing, including organization or structure, word choice, grammar, punctuation, spelling, use of literary devices, voice, and style.

Developing a supportive environment and writing community

Supportive environments help writers feel safe, connected, and motivated to write. Based on results from studies with writers in **grades K–6**, the following approaches are recommended (Graham et al., 2012).

- Providing daily and varied opportunities for applying writing strategies, techniques, and skills; writing practices can be embedded across domains to help learners think more critically about content-area material
- Creating opportunities for learners to collaborate, share, and receive feedback from adults and peers
- Publishing learners’ writing and displaying learners’ work prominently in the classroom or community

The following classroom strategies are recommended for learners in **grades 4–12** (Graham et al., 2016):

- Providing opportunities for learners to work with peers to workshop their writing
- Using writing assignments to gauge learners’ mastery and identify areas for improvement—in addition to being a multidisciplinary opportunity for learners to write, written assignments and on-demand writing prompts allow learners to meaningfully apply knowledge, which educators can assess to modify instruction and provide feedback

Pause and reflect

*What considerations should be made across all grade levels?
What considerations should be considered at different grade spans?*

Considerations for supporting writing in digital spaces

The meaningful use of writing technology in daily classroom practice is one way to improve learners’ writing quality and output (Wen & Walters, 2022). This might include mobile technology, word processing programs, online tools and programs, assistive technology, and/or artificial intelligence (AI). Mobile technology—specifically, computer or tablet-based applications that guide learners through planning, idea generation, and visual memory—is a promising form of writing technology for improving learners’ writing quality and quantity, especially for narrative writing (Wen & Walters, 2022). Word processing is also a helpful tool for supporting writing among all learners. Last, human-centered AI—in which AI is coupled with human judgment and decisionmaking—can help learners augment their writing (Cardona et al., 2023).

To supporting reading and writing in digital spaces, teachers can practice the following (Cardona et al., 2023; Graham et al., 2012; Graham et al., 2016; Wen & Walters, 2022):

- Instruct learners—as early as in grade 1—on grade-appropriate ways to use word processor editing features (e.g., using spelling and grammar checkers, copying and pasting, highlighting key words within a text or writing prompt, using bullet points to outline writing).
- Select writing technologies that are appropriate for specific writing genres (e.g., promoting the usage of online tools like search engines and digital databases to find evidence that supports or disproves an argument or theory, using AI to help organize writing).
- Empower learners to use assistive technology (e.g., speech recognition tools, keyboards or touch screens, word prediction, translation functions) and AI (e.g., multimodal learning paths tailored to learners’ strengths) to ensure an inclusive classroom environment in which all learners engage in writing.

Considerations for supporting multiliteracy

Multiliteracy refers to being able to read and write in more than one language. Classrooms that foster multiliteracy view the usage of languages other than English as an asset to be supported and sustained. In these classrooms, educators encourage learners to pay attention to the different forms, functions, and meanings across the languages they speak. Furthermore, multiliteracy practices help create spaces in which children feel safe drawing on their multilingual expertise. Below are several suggestions on how to tailor writing instruction to support multiliteracy and multiliterate writers (Rowe, 2022; Salmerón, 2022):

- Create a classroom environment that values multilingualism and multiliteracy (e.g., classroom labels in different languages, inviting family members to read to the class, welcoming and using other languages).
- Provide learners with frequent and authentic opportunities and encouragement to draw on their full linguistic repertoires when talking or writing.
- Encourage learners to blend elements of different languages within the same discourse, as opposed to keeping languages separate from one another, a concept referred to as translanguaging.
- Use multilingual exemplar texts that learners can use as examples for their own writing.
- Teach rationales and strategies for selecting different language resources to fit specific audiences and purposes (e.g., to speak to a family member, to communicate with a pen pal).
- Provide feedback on writing that is supportive of learners' multilingualism and multiliteracy.
- Recognize and acknowledge learners' multilingual writing.

Considerations for supporting reflexivity and identity development

Reflexive writing provides learners with opportunities to authentically reflect on concepts discussed in class in the context of personally relevant topics, such as interests, experiences, values, beliefs, and power in relation to ideas or purposes (Spence et al., 2021). This form of writing is not only important for affirming self-identify but also utilizing and celebrating learners' knowledge and experiences that may lie outside of the classroom. In these experiences, learners express themselves around a familiar topic, receive and give peer feedback, all while making decisions about writing style and tone with their audience and purpose in mind. Again, previous recommendations can be tailored to support learners' reflexivity and identity development. Suggestions (Spence et al., 2021) include the following:

- Provide learners with regular opportunities to engage in reflective writing, including opinion writing, memoir, and collaborative fiction writing.
- Select exemplar texts featuring the lived experiences of children of different sociocultural backgrounds and written by authors of different sociocultural backgrounds, especially those that reflect the backgrounds of learners in the class.
- Choose topics that are relevant to learners' lives and/or communities that allow learners to authentically express themselves through writing on subjects that matter to them.

Pause and reflect

What additional factor should be considered in order to engage learners in authentic writing practices?

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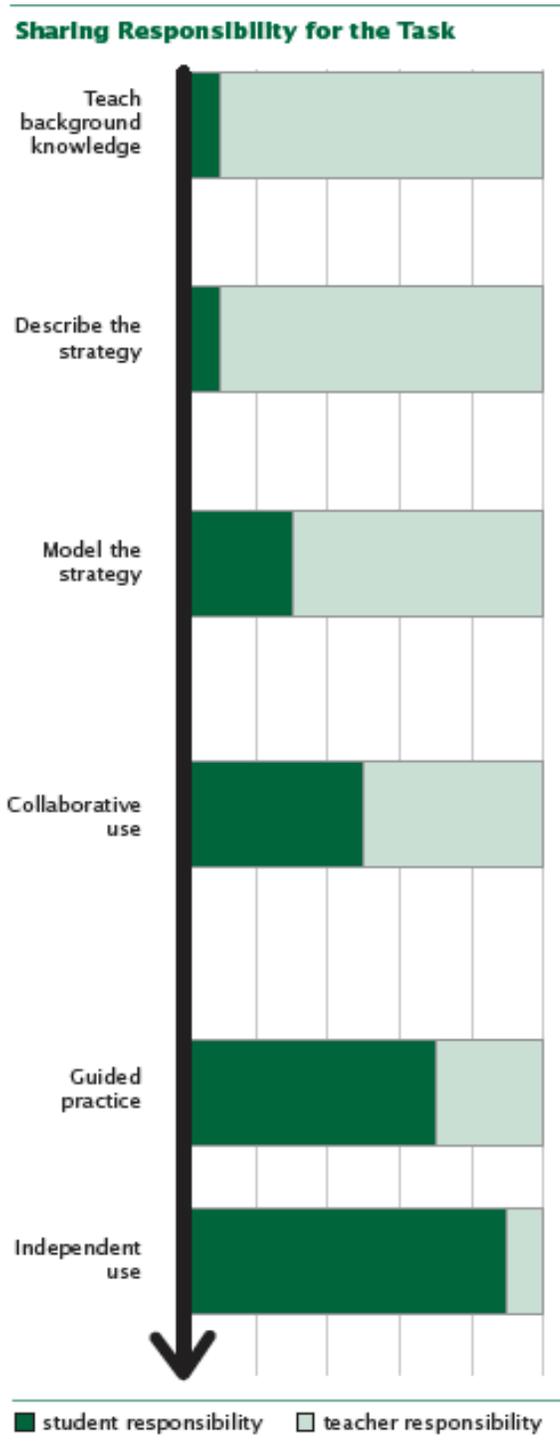
References

- Bazerman, C., Applebee, A.N., Berninger, V.W., Brandt, D., Graham, S., Matsuda, P.R., Murphy, S., Rowe, D.W., & Schleppegrell, M. (2017). Taking the long view on writing development. *Research in the Teaching of English, 51*(3), 351–360.
- Cardona, M.A., Rodríguez, R.A., & Ishmael, K. (2023). *Artificial intelligence and the future of teaching and learning: Insights and recommendations*. U.S. Department of Education, Office of Educational Technology. <https://www2.ed.gov/documents/ai-report/ai-report.pdf>
- Conrad, N. J. and Deacon, S. H. (2022). Print learning: A theoretical framework for the role of children's learning about the orthography in the development of reading skill. *Reading Research Quarterly, 58*(1), 113–125. <https://doi.org/10.1002/rrq.489>
- Drew, S.V., Olinghouse, N.G., Faggella-Luby, M., & Welsh, M.E. (2017). Framework for disciplinary writing in science grades 6–12; A national survey. *Journal of Educational Psychology, 109*(7), 935–955. <http://dx.doi.org/10.1037/edu0000186>
- Fang, Z., & Park, J. (2020). Adolescents' use of academic language in informational writing. *Reading and Writing, 33*, 97–119. <https://doi.org/10.1007/s11145-019-09937-8>
- Graham, S. (2020). The sciences of reading and writing must become more fully integrated. *Reading Research Quarterly, 55*(S1), S35–S44. <https://doi.org/10.1002/rrq.332>
- Graham, S., Bollinger, A., Olson, C.B., D'Aoust, C., MacArthur, C., McCurthen, D., & Olinghouse, N. (2012). *Teaching elementary school students to be effective writers* (NCEE 2012-4058). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. <https://ies.ed.gov/ncee/WWC/PracticeGuide/17>
- Graham, S., Fitzgerald, J., Friedrich, L. D., Greene, K., Kim, J. S., & Olson, C. B. (2016). *Teaching secondary students to write effectively* (NCEE 2017-4002). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. <https://ies.ed.gov/ncee/wwc/PracticeGuide/22>
- Graham, S., & Hebert, M. (2011). Writing to read: A meta-analysis of the impact of writing and writing instruction on reading. *Harvard Educational Review, 81*(4), 710–744. <https://doi.org/10.17763/haer.81.4.t2k0m13756113566>
- Graham, S., Liu, X., Bartlett, B., Ng, C., Harris, K. R., Aitken, A., Barkel, A., Kavanaugh, C., & Talukdar, J. (2018). Reading for writing: A meta-analysis of the impact of reading interventions on writing. *Review of Educational Research, 88*(2), 243–284. <https://doi.org/10.3102/0034654317746927>
- Newell, G.E., & Misar, K.S. (2022). Argumentative writing as an epistemic practice in middle school science. *Journal of Literacy Research, 54*(3), 272–297. <https://doi.org/10.1177/1086296X221116860>

- Rowe, L.W. (2022). Disrupting monolingual ideologies: Constructing biliterate composing practices in a second-grade classroom. *Reading Research Quarterly*, 57(4), 1149–1166. <https://doi.org/10.1002/rrq.465>
- Salmerón, C. (2022). Elementary translanguaging writing pedagogy: A literature review. *Journal of Literacy Research*, 54(3), 222–246. <https://doi.org/10.1177/1086296X221117188>
- Smith, A. (2019). Waves of theory building in writing and its development, and their implications for instruction, assessment, and curriculum. In D. E. Alvermann, N. J. Unrau, M. Sailors, & R. B. Ruddell (Eds.), *Theoretical models and processes of literacy* (7th ed., pp. 65–83). Routledge.
- Spence, L.K., Costa, P.J.B.M., & Cullars, A. (2021). “They’re killing our imaginations”: Dialogue and reflexive writing development in historically marginalized students. *Reading Research Quarterly*, 57(3), 847–862. <https://doi.org/10.1002/rrq.449>
- Wen, X., & Walters, S.M. (2022). The impact of technology on students’ writing performances in elementary classrooms: A meta-analysis. *Computers and Education Open*, 3, 100082. <https://doi.org/10.1016/j.caeo.2022.100082>
- Zagata, E., Kearns, D., Truckenmiller, A.J. & Zhao, Z. (2023), Using the features of written compositions to understand reading comprehension. *Reading Research Quarterly*, 58(4), 624–654. <https://doi.org/10.1002/rrq.503>

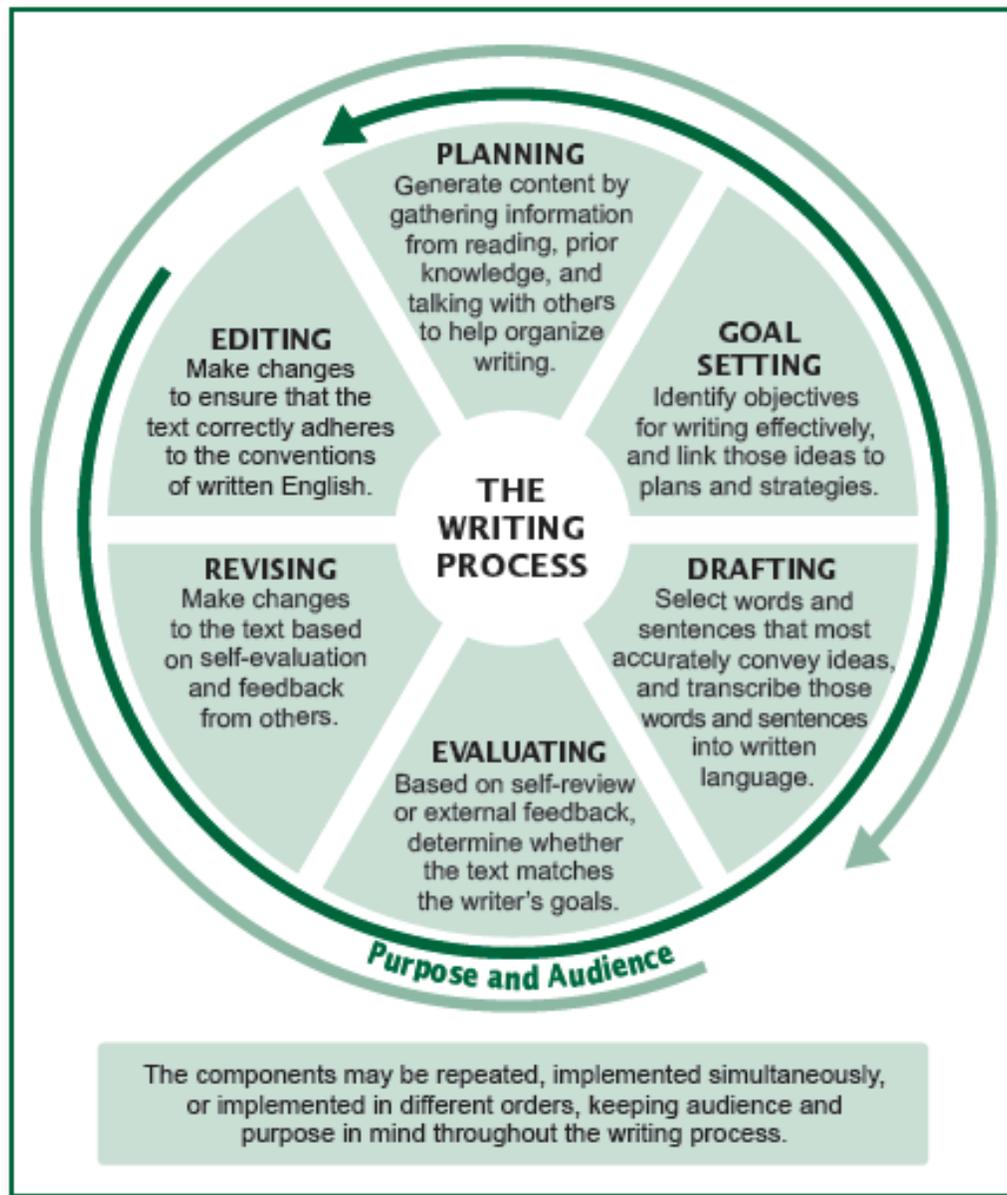
Appendix A

Figure A2. Gradual Release of Responsibility



Source: Graham et al., 2012

Figure A3. The Writing Process



Source: Graham et al., 2016