

Note

Productive Failure and GenAI**Michael Pak**

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Students have increasingly turned to generative artificial intelligence (GenAI) to produce their writing, forcing educators to face new challenges in assessing student work. Like Fotu (2024), I've had students turn in essays written by GenAI tools, such as ChatGPT, without them realizing that their papers with perfect grammar might include factually incorrect, or even bigoted, ideas. There are at least two failures here: the failure of a student to produce their own work and the failure of the student to realize that their work is not competent. Instead of responding punitively, I have learned from the concept of productive failure (Buttigieg, 2023; Carr, 2017; Kapur, 2016) to approach these occasions as teachable moments, where students have opportunities to engage in critical thinking by revising, questioning, and refining the GenAI's output. By examining the four outcomes of productive failure, unproductive failure, productive success, and unproductive success, I explore how GenAI can be leveraged to foster critical thinking and refine writing assessments.

Productive failure is part of a foursquare logic that educators such as Kapur (2016) use to illustrate that "learning and performance are not always commensurable" (p. 289). According to this logic, productivity is linked with learning, and success is linked with performance or results. For instance, a productive success would refer to a student completing an assignment and meeting its learning outcomes. However, if a student does not learn anything from an assignment but receives an excellent assessment, that result can be deemed an unproductive success. In this case, a student perhaps reaches a solution too easily, without grappling with the complexities of the problem. This type of success may lead to superficial learning, where students have not genuinely internalized the knowledge or developed critical problem-solving skills. Another example of unproductive success could be the deceitful use of GenAI, where a student has employed it to produce their work successfully, without the instructor realizing the writing was not explicitly the student's. The product might be a successful performance, but it is doubtful that the student has learned anything, except perhaps that such academic dishonesty pays off. This example of unproductive success is a significant concern for educators. The MLA-CCCC Joint Task Force on Writing and AI (2023) reported that "the two most common categories of concerns [among instructors] included concerns about plagiarism and integrity, and the inability of instructors to be able to detect AI" (p. 14). In addition, overreliance on GenAI in students' writing process remains a major concern, particularly with issues of plagiarism (Werse 2023).

The use of GenAI can also create a student outcome of unproductive failure. Simply put, unproductive failure occurs when the student's performance does not lead to cognitive growth, such as when students are left without feedback, when they become overwhelmed by the task, or when the failure is not viewed as an opportunity for deeper learning. Unproductive failure often leads to frustration or disengagement, without advancing the student's understanding. However, unproductive failure can become a much richer

opportunity for learning in comparison to unproductive success. Responding punitively to student academic dishonesty, such as plagiarism, creates a situation of unproductive failure, but forcing students to confront gaps in their knowledge, reconsider assumptions, and develop deeper insights when provided with appropriate guidance and feedback can render these moments productive failures. The challenge, then, is to frame GenAI as a tool that promotes critical thinking, particularly through the lens of productive failure.

The dialogical process of using GenAI is a form of critical engagement. When students ask GenAI tools to produce writing, they are prompted by questions that determine the output results that they desire. In essence, students are mirroring the processes of productive failure, where the struggle to make sense of GenAI-produced content may push students to examine their own assumptions and ideas. For instance, students who encounter productive failure in this context may experience cognitive growth as they revise AI-generated content, engage with their own thinking, and make decisions about what stays and what goes. However, this scenario assumes that students are cognizant and self-actualizing in their writing processes. If students are not orientated to prioritize such critical thinking in their writing, they risk outcomes of unproductive failure or unproductive success, both resulting when GenAI suggestions go unchallenged, without students reflecting on their accuracy, relevance, or alignment with their own voice.

Students will be using GenAI tools more and more, with and without approval. But educators do have the ability and responsibility to make these situations productive, through more explicit instruction and attention to the learning process productive failure imbues and to the functional and critical literacies of using GenAI tools. Traditionally, composition studies has valued process-oriented pedagogy (Murray, 1972) and learning from errors (Shaughnessy, 1979), and GenAI tools should be taught and understood in that same genealogy. The value of failure shines when students use GenAI tools to engage in critical thinking: evaluating, revising, and refining their ideas. This process of productive struggle can lead to better writing, as students internalize their learning and become more reflective about their ideas. Educators can foster this engagement by designing assessments that value the process of critical engagement with GenAI and by emphasizing critical thinking in the writing process. Doing so moves beyond superficial success or failure and focuses on the cognitive journey that enhances learning, fostering a generation of students who not only succeed but think critically and creatively in an increasingly AI-driven world. GenAI may have forever changed certain perceptions of authorship, but if this technology can be addressed directly and in a way that nurtures critical thinking, even our students' failures can, and will, be productive.

References

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