

PRACTICE, PATIENCE, AND PROCESS IN THE AGE OF ACCOUNTABILITY: WHAT COGNITIVE PSYCHOLOGY SUGGESTS ABOUT THE TEACHING AND ASSESSMENT OF WRITING

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It's a scenario experienced by many writing instructors: When chatting with colleagues from other disciplines at your institution, someone says, "You teach writing? So: How come our students can't write?" Or you meet someone who works outside academia who finds out where you teach and soon that person claims, "No one we've hired from that school can write."

To respond meaningfully yet concisely to such remarks is challenging. Most of us who teach writing are well aware of the complexity of the task we face, and regardless of where we place ourselves philosophically as composition instructors—whether we identify with "process," "post-process," "social-epistemic," "rhetorical," or other labels—we most likely agree that growth in writing requires extensive practice over a lengthy period of time, situated within a specific context. The recent work of cognitive psychologists Ronald Kellogg and Alison Whiteford not only confirms that this is so, but points toward some reasons *why* this is the case. Understanding how composition skills develop from the perspective of cognitive psychology can help us design and implement more effective writing instruction as well as more

meaningful assessments. Such an understanding may also help us to articulate more effectively the need for extensive practice, time, and discipline-specific knowledge to the various constituencies we serve—something especially crucial when dealing with those who mistakenly believe that helping students learn to write better should be the sole province of composition teachers, and/or that a good first-year writing course should be able to “take care of” any problems. Given the current high level of cultural anxiety regarding student writing abilities along with the intensified emphasis on programmatic and institutional accountability, the time is ripe for considering how we might ground our writing instruction and assessment in a scientific understanding of what actually happens in our brains as we write;¹ such a consideration is what I will attempt here.

I begin by elucidating some of Kellogg and Whiteford’s most salient findings with regard to memory, deliberate practice, “knowledge-telling” versus knowledge transformation, and domain familiarity. I then explore the implications of these concepts for both teaching and assessment. Given the current emphasis on “measurable” and quantifiable data, I assert that cognitive psychology provides a scientific and evidence-based rationale for much of what composition has already come to value, as well as a means of both articulating that rationale to our constituencies and designing more meaningful assessment tools. Finally, I conclude by calling for a recommitment to revitalized writing instruction at all levels; enhanced Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID) programs; and writing pedagogies and assessments that are grounded in awareness of cognitive processes rather than in any particular ideology of composition studies.

Kellogg and Whiteford: Key Principles

The concept of “deliberate practice” is arguably the most crucial aspect of composition instruction that Kellogg and Whiteford emphasize; in order to grasp why this is so crucial, it is helpful first to explore key aspects of memory and executive

attention, and the high demands that composing places on both. *Working memory* (sometimes called “short-term memory”) can be seen as analogous to the RAM in a computer in that the contents of our working memories never enter long-term storage. *Executive attention*—what we might refer to in lay terms as our “focus”—is the mindful and conscious attention that we bring to a task at any given moment, and is necessarily finite. (Our limited ability to focus executive attention on more than one thing at a time explains, for instance, why certain kinds of multi-tasking, such as driving a car while texting, is inadvisable.) Finally, *long-term memory* speaks for itself. It is where we “store” both knowledge and skills that have become automated through extensive practice—for instance, riding a bicycle, reading, or typing.

The task of composing places high demands on executive attention as well as both working and long-term memory. As Kellogg and Whiteford point out, the successful writer possesses numerous cognitive resources, including sufficient verbal ability to express ideational content; ability to manage high demands on working memory due to concurrent need for planning of ideas, generation of text, reviewing of ideas, rapid retrieval of domain-specific knowledge from long-term memory, maintenance of current planning/sentence generation/reviewing in working memory, simultaneous mental representations of author’s intention, meaning of text, and possible meanings construed by audience (254).

For well-practiced writers, many of these resources are stored in long-term memory—that is, “automated”—leaving executive attention and working memory free to attend to the multiple cognitive demands of a specific writing situation. In contrast, the less practiced writer will have automated far fewer of the necessary resources, and whatever is not automated will make demands on working memory, diverting significant executive attention and slowing down the composing process. Thus, “for the skill as a whole to be well controlled, its component processes must become *relatively* automatic and effortless through practice” (Kellogg & Whiteford 251). (To quote the famous words of the

late Duke Ellington: “Sure is easy when you know how!”) The writer who does not “know how” in the sense of having stored multiple resources in long-term memory must instead engage in “effortful cognitive processing” (251), rendering the composing process both time-and labor-intensive.

In order to automate certain components of the writing task, then, Kellogg and Whiteford point out the necessity of “deliberate practice” that, they emphasize, takes place over many years, not merely fourteen weeks. “Deliberate practice” entails (a) effortful exertion to improve performance, (b) intrinsic motivation to engage in the task, (c) carefully tailored practice tasks, (d) feedback that provides knowledge of results, and (e) high levels of repetition over several yearsThe term *deliberate* indicates that one must undertake the practice with an explicit goal of learning the skill and improving one’s performance. Practice in the sense of putting in the time, but just going through the motions, is not enough. The learner must be sufficiently interested to endure the effort required by deliberate practice (253-254).

For those of us who teach many reluctant writers, I would highlight the importance of “effortful exertion,” “intrinsic motivation,” and “sufficient interest”—key points to which I will later return. Writers who do not consciously try to improve, do not care, or are motivated primarily by the prospect of extrinsic reward are less likely to improve than those who exert significant, intrinsically motivated effort. Drawing on the work of Hattie and Timperley, Kellogg and Whiteford also note the importance of receiving formative feedback that helps the novice writer to approach target expectations more closely: “Feedback in educational environments is most effective when it informs the learner how to do the task better as opposed to providing praise for correct performance or punishment for mistakes” (260).

While quality of practice is crucial, quantity also matters; as stated by the power law of skill acquisition, “Performance improves as a power function of the amount of practice” (251). Skill development in any domain entails three stages: the early cognitive stage, in which the learner becomes acquainted with the

targeted expectations; the intermediate associative stage, in which “specific inputs are associated with appropriate responses from the study of examples” (251); and the autonomous stage, in which the learner has sufficiently internalized the complex skill, “thus reducing the degree of attention and effort required” (251). Only through practice that is both repetitive (frequent and over time) and deliberate (high quality) can writers make the quantum shift from the early cognitive stage to the intermediate associative stage.

To make this shift also requires a further transition: from “declarative knowledge,” or knowing *about* what a task entails, to “procedural knowledge,” or knowing *how* to perform a task. (This distinction brings to mind the widespread “Monday morning quarterback” syndrome; many people know, or think they know, a fair amount about many things, without being able to do those things very well themselves.) In terms of writing, novice writers may have sufficient declarative knowledge to be able to recognize, say, a powerful argumentative strategy; yet without deliberate practice and formative feedback, writers will not build the procedural knowledge they need to deploy a similar strategy effectively themselves. Indeed, say Kellogg and Whiteford, we can expect that the initial attempts of novices to imitate expert examples will necessarily fall short—not necessarily because our students lack intelligence or because our teaching is poor, but because a time lag is built into our cognitive structures (250).

At first glance, the stages of improvement outlined by Kellogg and Whiteford would not appear to be “news”; we all recognize the familiar stages of “beginning,” “intermediate,” and “advanced,” as well as the fact that declarative knowledge is much more easily achieved than procedural knowledge. What is less well understood by many, however, is the nature of learning curves: “Performance improvements are initially rapid and then gradually lessen with higher and higher amounts of practice” (251). In other words, the more a learner advances, the more slowly he or she will appear to make progress. Further, because the “complexity of the task increases as one develops” (260), progress may *appear* to

slow down as a learner approaches expertise. Thus, those unfamiliar with the nature of learning curves may mistakenly see deterioration when a writer is actually progressing toward a higher level of mastery.

Further adding to the complexity of developing writing skills is the expectation that intermediate and advanced writers shift from “knowledge telling,” or “communicating what one knows”—the kind of “book report” or summary writing engaged in by novices—toward “knowledge transformation,” or “writing used to transform/actively constitute knowledge” (253). (Kellogg points out in his earlier work that a handful of advanced writers will progress even further, toward “knowledge crafting”—the level achieved by experts (Kellogg 5).) Notably, as learners shift from knowledge telling to knowledge transformation, the speed of learning relative to massed practice will *slow down*, though such a transition “ultimately benefits long-term retention” (258). Once again, then, at the very moment when a student is making significant progress, he or she may *appear*, at least for a while, to be getting worse.

With any composite skill, then, we move more quickly from incompetent to basic than from basic to intermediate; we move more slowly from intermediate to advanced and most slowly of all from advanced to expert, with more hours of deliberate practice resulting in fewer immediately visible improvements (though paradoxically, as a writer advances, additional practice becomes even more vital). This finding, as I will discuss later, carries crucial implications for both instruction and assessment.

Into this already convoluted situation, Kellogg and Whiteford point out that we must consider the crucial role of domain-specific knowledge in reducing demands on executive attention. Superior writing skills—not surprisingly—correlate with “writing in the professionally relevant domain of greatest interest to the student” (258). This is because “demand reduction . . . occurs by learning domain-specific knowledge that can be rapidly retrieved from long-term memory rather than held in short-term working memory” (Kellogg 3). When a writer deeply understands the

material he or she is writing about and is familiar with both the discursive norms held by the target audience and the expected features of the genre, he or she can “retrieve relevant knowledge from long-term memory at just the right moment” (3). Indeed, says Kellogg, “Writing about topics that students know well provides a scaffold to support the writers and to allow them to devote a higher degree of executive attention to the juggling of planning, generating, and reviewing” (15).

Here it is worth noting a point observed by numerous composition instructors: Many students write reasonably coherent personal essays but do not do as well when they attempt source-based research writing. Often, we are tempted to attribute this differential performance to student laziness or solipsism. The question of whether today’s so-called “millennial generation” displays more narcissism than previous generations is highly debated (see, for example, Jean Twenge and Keith Campbell’s *The Narcissism Epidemic* and Twenge’s *Generation Me*, along with counter-arguments such as Eric H. Greenberg and Karl Weber’s *Generation We* and Neil Howe, William Strauss, and R.J. Matson’s *Millennials Rising*). But momentarily setting aside that discussion—and allowing for the fact that temporary narcissism is often a feature of adolescence, although one best outgrown eventually—it may be that students’ superior performance on personal essays stems not so much from egocentricity as from domain familiarity. Bearing in mind the crucial role played by intrinsic motivation in the quality of practice, Kellogg and Whiteford further suggest that students are more likely to succeed when they have opportunities to write about issues on which they hold strong feelings and opinions. Of course those who can *only* write well when composing personal essays are unlikely to succeed as writers in upper-division college courses or in the workplace; thus it is vital that instructors introduce students to relevant disciplinary conventions and domain-specific conversations, and that colleges and universities continue to develop and expand WAC and WID programs rather than expecting first-year composition classes to “do all the work” singlehandedly. This, of course, is hardly news

for composition teachers. David Bartholomae long ago pointed out in “Inventing the University” that students’ unfamiliarity with discursive conventions will necessarily produce “amateur” performances that are imitative at best, and that learning to use academic language appropriately is one of the many demanding tasks placed on student writers. Again, Kellogg and Whiteford’s work is not so much new information as *why* this is so: When writers are working within a familiar domain (whether that domain is considered properly “academic” or not), working memory and executive attention do not need to be diverted toward domain familiarization and away from the primary writing task (253).

Kellogg and Whiteford point out further possible factors adding to the complexity of college writing tasks—performance anxiety generated by high-stakes assignments, for example, or motor skills or technological know-how that may not be fully developed. Adding to the complexity of teaching younger writers is the fact that the regions of the brain most associated with executive attention—the prefrontal cortex and frontal lobe—are not fully developed in most individuals until the mid-twenties. (The slow maturation of the frontal lobe accounts for a good many of the challenges of adolescence, since this region of the brain governs self-regulation.) For all these reasons, then, it is unreasonable to expect most student writers to write at expert level. As Kellogg states, “Learning to become an accomplished writer is parallel to becoming an expert in other complex cognitive domains. It appears to require more than two decades of maturation, instruction, and training” (2).

The fact that the frontal lobes are still developing—and with them, the capacity for executive attention—means that analytical writing will be challenging enough for most students of traditional college age; those who have not automated key components of the composing process through extended deliberate practice during the K-12 years will take even longer to achieve expertise than their peers who have. Many entering college students will have engaged in few writing tasks more substantive than the standard

five-paragraph essay, especially in this era of “No Child Left Behind” with so much writing instruction squeezed to fit the “box” of standardized testing. Meanwhile, in our hyper-technological age, more simultaneous demands are made on executive attention—for *all* of us—than, arguably, at any previous time in history. Last but hardly least, one must consider the wild cards of intrinsic motivation and effortful exertion; many students openly state that they are only in a writing class because it is required, and too many of them exert minimal or inconsistent effort. Furthermore—due at least in part to excessive teacher workloads—a good many of our students arrive at college having received primarily summative assessments in the form of reductive letter grades, rather than the formative assessment that is crucial in shaping deliberate practice.

Implications of Cognitive Psychology for Design of Writing Instruction

Given all this, some might suggest it is hopeless to try and teach college-level writing at all. Yet Kellogg and Whiteford—while certainly acknowledging the cognitive complexity of advanced composition tasks—do not make this claim; instead they emphasize the necessity of designing writing instruction that takes into account how cognitive processes actually work—“training” writers rather than merely “teaching” them. A “training” approach is grounded in awareness of cognitive processes and is similar in many ways to the way athletes and musicians are trained. The key to training is to provide learners with frequent—ideally, daily—opportunities to *use* the target skill over a lengthy period of time, receiving regular formative feedback, and being provided immediate opportunities to apply and assimilate that feedback. Expected progressions are built sequentially into the training materials, and assessments that take proper account of the nature of learning curves. The never-ending quest for additional expertise is at the same time balanced by realistic expectations of what a learner at any given level can be expected to achieve.

For those of us in composition studies, this approach suggests that much of what our field espouses has been appropriate all along—emphasis on formative feedback and revision, separation of drafting and revision tasks, WAC and WID programs that distribute writing tasks throughout the curriculum, initial assignments that focus on material already familiar to the writer, and so forth. Still, I would suggest that there are other aspects of pedagogy where the American educational system is lagging when it comes to training writers (though most likely there are “pockets” throughout the country in which appropriate training in writing is indeed taking place).

First, it is crucial that we *systematize* (by which I most emphatically do *not* mean “standardize”) the concept that training should focus on helping novice writers to automate key aspects of the writing process during their developmental years by offering extensive opportunities for daily, deliberate practice. Second, schools at all levels need to incorporate these daily writing tasks into the curriculum in all disciplines, rather than relegating the teaching of writing solely to English faculty. This necessitates training faculty in other disciplines in how to instruct and assess writing—particularly making colleagues aware that to offer formative feedback and provide immediate revision opportunities does not constitute a “cop-out” or a “lowering of standards,” but is a necessary aspect of a training program. At the college level, this means continuing and expanding our existing WAC and WID programs, distributing writing throughout the curriculum and at all levels. (Once again, this entails educating faculty about how best to teach and assess writing.) Finally—a point to which I will return—assessments should be both designed and analyzed so as to take account of the findings of cognitive psychology, bearing in mind the nature of learning curves, the difference between “knowledge-telling” and “knowledge transformation,” and the importance of domain familiarity.

The time required to engage in formative assessment is, of course, one of the most formidable barriers to designing writing training in line with cognitive research, especially for colleagues in

other disciplines who are not accustomed to grading writing. On this point Kellogg and Whiteford make an intriguing observation:

Although regular formative feedback is generally thought of as beneficial, it is not widely appreciated that *providing feedback only intermittently can be beneficial*. . . . First, performance appraisals and grades can actually impair, as well as benefit, performance. . . . Second, less might be more when it comes to instructor evaluations of the written work of students. It is not entirely clear that students read, comprehend, and learn from extensive feedback Third, in a variety of tasks, intermittent feedback has been shown to slow the acquisition of a skill during training compared with continuous feedback, but it has the benefit of enhancing long-term retention of the skill. (261 – Emphasis mine)

Kellogg also discusses the research of Alexander Astin, who found in 1993 that the two most crucial factors in writing improvement were the “number of writing-skills classes taken” and “amount of feedback given by instructors” (Kellogg 262). Yet interestingly, the amount of feedback turned out to be “substantially less important than the number of opportunities to compose in writing classes” (262). (For the statistically minded, the difference was a correlation of $\text{partial } B = .31$ for amount of writing done and $\text{partial } B = .12$ for amount of feedback given.)

While this finding may seem counter-intuitive to those of us who live by providing feedback, it makes sense if we consider how learners improve in other domains, such as sports or performing arts. Athletes and musicians never limit their efforts to high-stakes performances and games but practice/rehearse extensively. (An athlete who only engaged in his or her sport on “game day” would surely fail, as would a musician who only played when in front of audiences.) The finalized high-stakes writing product, geared toward an audience and likely written for a grade, may be analogized to the public performance of a musician or athlete.

Certainly a good deal of practice takes place under the guidance and coaching of a professional—analogue to providing drafts for teachers who provide formative feedback. But highly skilled athletes and performers also practice a great deal *on their own, privately, without receiving feedback*. A musician, for example, typically attends lessons with an expert once per week but practices skills daily on his or her own, without receiving immediate feedback. Athletes typically engage in individual workouts and training sessions beyond formal practices under the coach's eye. As crucial as formative feedback is in helping learners improve, then, it also seems apparent that learners in any domain also need opportunities to practice their skill extensively, at times without an audience. This awareness might encourage all of us, across disciplines, to integrate writing more enthusiastically into the curriculum; if opportunities to write extensively ultimately matter more than feedback, we can be freed of the perceived obligation to read and respond to every single word and instead, just ask our students to do as athletes- and musicians-in-training do: engage as often as possible in the target skill.

Here it is further interesting to consider that while deliberate practice is crucial, even very advanced musicians and athletes also engage in warm-up activities—say, lay-up drills for basketball players, or musical scales for pianists. The corollary for a writing student, I will suggest, is freewriting.² At first glance it may appear that freewriting is at odds with some aspects of “deliberate practice” with its emphasis on conscious skills acquisition, and certainly writers are unlikely to progress toward advanced composition skills by engaging in freewriting and nothing else. Yet in cognitive terms, there are multiple ways in which freewriting can be a beneficial add-on to more deliberate practice and writing with the expectation of feedback.

First, freewriting allows a writer, especially the novice, to set aside concerns such as audience, purpose, or editing—all components that require extensive diversion of executive attention. While this may be less crucial for the advanced writer who has automated multiple processes in long-term memory,

cognitive psychology suggests that the best way to assist novice writers is to separate the various components deliberately, allowing the writer to focus his or her executive attention on fewer tasks. (Once again, separating drafting from editing has long been a hallmark of composition theory; what is notable here is that while many have understood for decades *that* such separation works, cognitive research demonstrates *why* it works.) Freewriting as a heuristic tool may give writing students much-needed practice in generating text without the need to divert executive attention to editing concerns.

Second, freewriting offers yet another benefit: the greater effectiveness of “spaced practice” (regular, shorter writing sessions) as opposed to “massed practice” (also termed “binge writing”). Drawing upon the work of Robert Boice on writing blocks, Kellogg and Whiteford state: “A common mistake of developing writers is to compose in marathon sessions or binges of massed practice that can exhaust and frustrate the writer. Writing apprehension and even writer's block can result from this misconceived kind of practice” (257). Kellogg and Whiteford refer to the work of psychologists Richard Schmidt and Robert Bjork demonstrating that spaced practice “maximizes long-term learning” (258), suggesting there is much benefit from frequent yet shorter bursts of writing.

A third potential benefit of freewriting touches on that thorny issue of deliberation in practice—the need for “effortful exertion,” “intrinsic motivation,” and “sufficient interest” in generating improvement. The crucial question of how best to motivate disengaged students is often neglected in much public discourse regarding the “literacy crisis” (whether real, perceived, or some combination). A detailed discussion of how best to inspire the apathetic student is beyond the scope of this essay, and clearly, there are no panaceas. Yet I would suggest that freewriting offers one possibly helpful strategy. Students who have frequent opportunities to write about matters of concern to them, without fearing the response of a potentially hostile audience or the specter of an editorial red pen, may stand a better chance of

coming to care intrinsically about producing a better written product. Arguably, much student passion for learning has been diminished by a K-12 education emphasizing successful performance on standardized tests over invention, or correct selection of prefabricated answers over critical thinking and exploration of ideas. Freewriting can offer students an opportunity to engage with subject matter of their choice, on their own terms, thereby increasing the odds that they may develop the intrinsic motivation so crucial for improvement.

Of course successful writers do not thrive on freewriting alone, and a well-designed approach to writing instruction will hardly stop there. What becomes apparent in light of cognitive research, however, is that even in this accountability-obsessed era, there is still a place for freewriting in the composition classroom. Using freewriting frequently and appropriately—in conjunction with other important elements of a training program, including domain familiarization, intermittent formative feedback, and appropriate task scaffolding—is also likely to generate more meaningful assessment results, not because we have tweaked the data to show what we want it to show but because students who have written extensively, focused their executive attention appropriately, and developed intrinsic motivation for writing are more likely to produce meaningful, audience-friendly texts that meet or exceed our expectations. Cognitive psychology suggests that regular freewriting can help writers gain in all these areas, ultimately contributing to their long-term success as writers.

Implications for Dissemination, Assessment, and Interpretation

The hypothetical scenario with which I opened this essay is, for many of us, not so hypothetical. While some current cultural anxiety regarding student writing skills may be overblown—based on anecdote, a limited definition of what constitutes “good” writing, false nostalgia for an earlier (presumably Edenic) educational age, or studies that are methodologically and/or

epistemologically problematic—many present concerns about the quality of student-writing are well-founded. Much anxiety is fueled by periodic reports—often widely touted in the media—bemoaning the poor writing skills of American students. The National Assessment of Educational Progress, for instance, reported in its 2011 “Nation’s Report Card” that only 27% of high school seniors scored “proficient” or higher on its assessment measure, with 24% of these ranked as “proficient” and only 3% as “advanced”; 52% performed at the “basic” level (“Nation’s Report Card” 30). Back in 2004, the National Writing Program’s National Commission on Writing stated that American companies spend up to \$3.1 billion per year on “remediating deficiencies in writing” (“Writing” 4), stating that one-third of the firms surveyed believe that “one-third or fewer of their employees, both current and new, possess the writing skills companies value” (“Writing” 13). Many faculty members express similar concern. For instance, in 2006, Alvin P. Sanoff reported in the *Chronicle of Higher Education* that 44% of college faculty surveyed believed the majority of their students were not well prepared for college-level writing; interestingly, only 10% of high school teachers surveyed believed they were sending poorly prepared high school seniors on to college, suggesting a perception gap between high school and college instructors (Sanoff).

Many constituencies have even gone so far as to question whether college students today are learning anything at all. Of recent note, Richard Arum and Josipa Roksa claimed in their 2011 study *Academically Adrift* that approximately 45% of the undergraduate students they studied did not make expected gains in complex reasoning, critical thinking, or writing. *Academically Adrift* in particular has garnered significant media attention, triggering a wave of performance and assessment-related anxiety at colleges and universities across the country.

Such claims, however, are debatable and open to criticism on a variety of fronts. The NAEP examination, for instance, depends solely on a thirty-minute timed writing sample, skewing the results in favor of those who can read and write quickly while

meeting a set of arbitrary and limited expectations. The provocative claims made in *Academically Adrift* are based primarily on the Collegiate Learning Assessment, a timed and standardized test which has been subjected to numerous criticisms—among them an insightful 2008 critique by Mark D. Shermis, who presents multiple grounds for his claim that “the information on reliability and validity for the CLA is sketchy” (11).

What seems apparent despite these limitations, however, is that a good many people believe that “good” student writing is rare, and that this belief—while possibly overblown—is not entirely unfounded. Clearly there is much work to be done by those of us in composition studies, both with respect to helping our students improve *and* to dispelling potentially skewed public perceptions. Part of our task, then, is to educate not just colleagues in other disciplines but members of other constituencies we serve as well. This is especially crucial when it comes to questions surrounding accountability and assessment.

The increased pressure for academic “accountability” in recent years has not been wholeheartedly embraced by academia and has been rightly criticized on a number of fronts. Shermis, for instance, points out what he calls “an ambiguity” underlying the pressure for assessment first promulgated by the Bush administration (which, of course, continues despite the 2009 change in national administration):

On the surface, it would seem that the secretary’s push is simply a logical extension of the rhetoric associated with No Child Left Behind (that is, accountability for funds expended). Yet the fiscal role of the federal government in postsecondary education has traditionally been limited to underwriting costs for economically disadvantaged students and grant funding (for which a service is received). (10)

Many of us fear that the *true* motivation behind the accountability movement at the college level is to contain potential disruption of dominant discourses by forcing writing

instruction into a “measurable,” ostensibly “objective” container, in the process reinscribing hegemonic power and neutralizing the transformative possibilities of alternative discourses and counter-hegemonic voices. Since it is beyond the scope of this essay, however, to explore fully the ideological underpinnings of the current push for accountability, I will provisionally argue along with Monica Stitt-Bergh and Thomas Hilgers that since demands for assessment are presently here whether we like it or not, we are best served by taking the reins of our own assessment projects. As Stitt-Bergh and Hilgers put it, “The outsourcing of assessment carries a high price: it signals that the locus of responsibility for assessment is some external organization instead of the program’s stakeholders On the other hand, when an institution insources assessment, it has a greater chance of reaching assessment’s ultimate goal of program improvement” (Stitt-Bergh and Hilgers).

If assessment is inevitable, then, it is vital that we as faculty members take charge of the process, moving beyond a reluctant and perfunctory jump through accreditation hoops to develop methods that produce meaningful and illuminating results. The goal of assessment should not be to “standardize” instruction, but to garner meaningful evidence that is used to foster a cycle of continuous improvement (which in some cases may mean continuing to do what is already working well). Here the work of Kellogg and Whiteford becomes further useful for suggesting more nuanced, scientifically grounded methods of understanding how writing improvement actually occurs, and how it does (and does not) make sense to measure such improvement. For instance, studies such as *Academically Adrift* appear to be predicated on the assumption that writing and critical thinking skills should produce measurable gains within only four semesters. Yet for the eighteen- and nineteen year-olds whom Arum and Roksa examined, multiple factors mitigate against their claim: the reduced speed of learning curves as learners advance, the slow maturation of the frontal lobes during late adolescence, the significant amount of time required for measurable improvement, the complexity

inherent in shifting from knowledge-telling to knowledge-transformation, and the lack of domain-specific expertise on the part of the typical college freshman or sophomore. The findings of Kellogg and Whiteford suggest that in the course of one semester—or even two, three or four—it is likely that many assessments will indicate little to no improvement, and in some cases may even demonstrate a slight decline. Yet this hardly leads logically to the quantum-leap conclusion that the time students devoted to learning was wasted, that the instructors' teaching was ineffective, or even that the students really are failing to learn. While the results could possibly point toward such findings in at least some cases, *Academically Adrift* does not take full account of all these potential variables.

When designing and interpreting assessments, then, we must bear in mind that critical thinking and writing skills are likely to develop more rapidly for students who have delved into an area of specialty, rather than for those who have only been exposed superficially to a range of general education courses in fields they do not intend to pursue. Furthermore, the additional anxiety produced by a time-sensitive, high-stakes test such as the Collegiate Learning Assessment is likely to divert necessary executive attention, particularly for novice-to early-intermediate writers who have stored fewer cognitive resources in long-term memory. (Under such circumstances, one could argue that the fact that 55% of general education students *did* make measurable gains in the first two years of college would appear to be the more salient finding.)

Academically Adrift may be only one study (and the Collegiate Learning Assessment only one means of measurement), yet it provides a useful example for demonstrating the limits of externally imposed, standardized tests in assessing how well our students are learning to write. For assessments to be more meaningful, it is helpful to be aware of the cognitive processes entailed in learning to write, which are far more complex than can be gauged using superficial analysis. More insightful assessment design must account, for instance, for the apparent temporary

downturns that often occur as a student moves toward increasing cognitive complexity; for the difference between knowledge-telling and knowledge transformation; and for the way in which lack of domain familiarity may mask actual writing skill.

Finally, meaningful assessments will look for gains that can be reasonably expected within the time period being assessed. At the college level, it is important to note that a K-12 education devoid of adequate deliberate practice cannot be compensated for in a few weeks, or even months; in addressing the importance of time and maturity in developing advanced writing skills, Kellogg and Whiteford mention the “lack of distributed writing tasks in the system” (254). In the absence of meaningful educational reform that replaces the current misguided emphasis on standardized testing with a writing-intensive K-12 experience focused on helping students to automate key components of the composition process, college instruction will not be able to conquer this limitation singlehandedly. This challenge is further exacerbated in the absence of intrinsic motivation: “Without sufficient motivational interest, one never moves beyond the stage of acclimating to the concepts of the domain and learning at a relatively shallow level” (Kellogg and Whiteford 254). As such, any meaningful assessment of student writing progress should find a way to correlate student interest and effort with the outcomes as well.

What Works? Process, Practice, Patience

When designing both writing instruction and assessment, four points seem clear: First, a one-semester (or even one-year) college composition course can hardly be expected to produce expert writers all by itself; those who perform best at the freshman level are likely to be those who automated multiple cognitive components of the writing task through deliberate practice during their formative years. Second, effective writing instruction will not stop after the freshman year; given the importance of domain familiarity, it is vital to maintain and further develop college-level WAC and WID programs that allow

student writers to engage in deliberate and frequent writing practice in their target domains in subsequent years. Third, if assessments are to be meaningful and instructive rather than stand as perfunctory “hoops” through which we must jump, the nature of learning curves must be taken into account both when designing and analyzing assessment tools. Fourth, when we design both our writing instruction and our assessments, it is crucial to remember that measurable improvement in writing takes considerable effort over a long period of time, and that both learners and instructors need to be patient, persistent and consistent rather than expecting instantaneous results. Time and patience may be qualities in short supply in our fast-moving, instant-gratification-obsessed culture, but when it comes to the training of expert writers, the field of cognitive psychology reminds us that there are simply no shortcuts.

Deepening our awareness of the cognitive complexity inherent in composing can help us do a more effective job of guiding our students along the long and winding path toward writing expertise, as well as more accurately ascertaining the extent to which students are (or are not) succeeding. While the field of composition studies has done an excellent job of discovering and disseminating what works, cognitive psychology can tell us more about *why*—demonstrating the limitations of an “either/or” teaching philosophy and explaining why truly effective writing instruction and assessment should make use of a variety of approaches, drawing upon techniques often associated with process pedagogy (such as freewriting) as well as more social-epistemic emphases (such as the need to help students achieve mastery of discipline-specific discursive conventions). For all the “debates” that have taken place in composition studies over the past several decades, the findings of cognitive psychology suggest that all along, there is wisdom to be found at multiple points along the ideological spectrum.

Notes

¹ This is not to neglect the social dimension of composing; Kellogg and Whiteford point out that writing is at once both cognitive *and* social (253)

² Here I am using the definition of “freewriting” specified by Peter Elbow, most recently in *Vernacular Eloquence*: Freewriting asks the writer to “write without stopping” and should be written “with the expectation of *not* sharing.” Furthermore, the writer should not “worry about any standards for writing” during the course of the freewriting activity (148).

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