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# SCALING UNDERGRADUATE WRITING AT PUBLIC UNIVERSITIES: Problems and Prospects

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## ABSTRACT

Although writing is well established as a high-impact educational practice, scaling that practice is challenging. Writing is a mode of engaged learning, and teaching it requires providing careful attention informed by expertise. These conditions are labor-intensive and expensive, even as public universities are hardly awash in funds. Writing skills develop over time as a function of encountering challenges and being coached on addressing them. What counts as "good" writing varies according to context, target readership, and purpose. Students need to build a repertory of strategies and experiences, along with the executive functions to know when to access what. They acquire this repertory by writing: doing it, not simply being told about it, and receiving feedback and advice. Technologies cannot currently or foreseeably provide feedback of sufficient quality to solve problems of scale. Writing Across the Curriculum programs can supplement first year writing courses, even replace some of them—but only if accompanied by sustained professional development that includes thorough knowledge of effective writing pedagogies, knowledge bolstered by existing research, theory, and best practices. New faculty models that feature full-time, benefited continuing lecturers or teaching professors exist at many universities, private and public; these models are more cost-effective than tenure-line faculty owing to enrollments. Even when they're more expensive than adjuncts, these models' return in quality is profound. The bottom line is that, even with cost ceilings, it's possible to scale quality writing instruction, however incrementally. At least minimally, this requires faculty writing specialists who can work directly with disciplinary faculty and who can ensure that anyone teaching writing is doing so in well-designed courses, using effective and efficient pedagogies. Writing centers are vital in supporting these efforts. Permanent, professional writing faculties, in new kinds of faculty roles, offer the greatest promise, albeit at greater costs.

**Keywords:** Writing, High Impact Practice, Technology, Writing Across the Curriculum, First Year Writing, Faculty Development, Undergraduate Education

Having students write—often, extensively, and to a variety of purposes—is a well-established high-impact learning practice. Yet fully teaching writing takes time and some expertise, demanding investments of academic labor that can price extensive writing instruction out of university budgets. While public universities have a long history of requiring one or two first-year composition courses, they often staff them with graduate teaching assistants or adjuncts, on the cheap out of necessity or naiveté. And when universities formally support writing beyond the first year, through Writing Across the Curriculum or Writing in the Disciplines initiatives, those efforts face further challenges of scale. Certainly, writing isn't the only high impact practice with this problem; so do engaged/active learning pedagogies, from service-learning to project-based. Writing has particular challenges because its ubiquity and centrality have created common sense misunderstandings.

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Given these circumstances, extensive undergraduate writing might seem like those fabled branches of fruit hanging over Tantalus's head: desirable but ever beyond reach. However, without minimizing the challenge, I propose that public universities can do more than they imagine. First, though, some background.

**WRITING AS A HIGH-IMPACT PRACTICE**

When students write, they can't fake it—and neither, for that matter, can we. Either they produce sentences and paragraphs or they don't. Either the resulting language is effective for the task at hand, or it isn't—though a text can be wrought better through revision. Whereas modes of learning like reading or listening can be passive, providing no immediate evidence of the quality of engagement (perhaps not even to the readers themselves), writing leaves a trace. It shares that quality with other productive modes: coding, composing music, solving equations, building models, sculpting, and so on. Still, writing stands apart because of language's entwinement with thought; writing is simultaneously both a vehicle for thinking and its manifestation. The process of writing, which commonly denominates disciplines, professions, and social/civic spheres, yields malleable artifacts that can be evaluated, critiqued, and refashioned, and improved.

In a modest 1977 landmark article, Janet Emig wove several strands from psychology, philosophy, and rhetoric to advance the idea that "writing is a mode of thinking." Rather than seeing writing merely as reporting knowledge that has already been made, Emig argued that we additionally see the very act of writing as enacting/causing thinking. The idea had been around for ages, embodied in such familiar sayings as, "How do I know what I think until I see what I've written?" But writing as mode of thinking came at a fortuitous time, breathing life into a nascent Writing Across the Curriculum movement. WAC encouraged faculty in all disciplines to see writing as a tool for teaching and learning, not simply as a tool for testing or transmitting. The shift had ramifications for the kinds of writing assigned and for roles that history or chemistry professors might play: as designers of learning experiences, for example, rather than as narrow grammarian graders. The interplay between "writing to learn" and "learning to write" offered faculty across all disciplines a way to leverage student engagement. Professors could assign informal tasks that required less intensive faculty effort but that fostered learning. Writing improvement could be regarded an indirect effect, secondary or tertiary, not the primary goal.

All of these ideas underlie the designation of writing intensive courses as a high impact practice, one of ten identified by AAC&U, extending earlier work by George Kuh. Articles in a special issue of *Across the Disciplines* dedicated to "WAC as a High Impact Practice" discuss how, beyond encouraging writing per se, writing across the curriculum programs also foster "Frequent and significant contact with faculty, peers, material; Contact with material in active-learning, novel, and culturally diverse settings; Continuous feedback on performance; [and] Integration, synthesis, and application of knowledge" (Boquet and Lerner). John Bean's *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom* rightly emerged as the go-to resource for faculty who hardly identify as "writing teachers" and who have limited time and expertise.

It's worth mentioning, in passing, two other high impact dimensions of writing. Employers regularly cite communicative skills as vital to hiring and advancement. Perhaps less visible but equally valuable is writing's central role in civic and social spheres. Not only does it shape ideas in the age of social media, it's also a mode of constituting ourselves and identities.

**LEARNING TO WRITE: FOUR TRUTHS**

Although well-structured, low stakes writing opportunities facilitate learning, actually teaching writing (as opposed to assigning it) requires resources. There are four reasons.

First, learning to write is not like getting vaccinated against chicken pox. Writing is a continuously developing skill, and people successful with some kinds of writing may reasonably struggle with others, particularly tasks that demand working with new content or genres. I "knew how to write" in third grade, for example, when I sent my grandmother a grammatically correct and well-punctuated thank you card for a birthday present. But in third grade I wasn't yet able to write the book reports that I needed to produce in junior high. And I "knew how to write" perfunctory research papers in high school, largely stringing together summaries of sources, but couldn't yet then do the critical syntheses of scholarship needed to analyze 18th century novels in college. And while I eventually "knew how to write" a dissertation and publishable scholarly articles, I still had to learn the conventions of personnel reviews, budget requests, and accreditation self-studies, not to mention newspaper op eds. Obviously, as I accumulated experience and success, I had a lot to draw upon when encountering a new kind of writing, but it still took learning and practice.

This is true for all writers, and it's certainly true for our students. The kind of writing that students need to do in college, especially the different kinds of writing demanded by different disciplines, is something that they must, perforce, learn to do in college. More about that below. When can we say people know how to play piano? When they can play "Chopsticks"? "Smoke on the Water?" Beethoven's "Emperor Concerto"? Research shows that whenever students (or any of us) must write in a new genre, use unfamiliar

readings, or address an unknown or hostile readership, certain skills seem to degrade. Consider two passages, both from the same student "James" I taught several years ago in a first-year writing course.

A: Task: Write a vivid description of an incident you remember. *The day Mark started playing the violin was pure horror to the household, as the wrenching sounds produced out of that piece of wood were terrifying. At one point during his continuous practicing, the cat ran up the curtains and broke them trying to get away from the sound. During dinner while the Mark was playing, at the table, I thought the glasses full of water were going to break into pieces right there in front of me.*

B: Task: Compare the types of readers that Garrison Keillor and Anne Coulter are trying to reach, in their respective essays. *Following the Garrison essay is a paper written by Ann Coulter who generates a very dissimilar essay along the same regards to, "Daddy Issues," but with a very different presented demeanor. This article is aimed to people from the general public who are critical of the subject of Democrat subordination and laziness.*

Suppose you were asked to judge, on the basis of one piece of writing, whether James can write. If you'd been given piece A, you'd say, "Probably." It's hardly profound, but it's clear and syntactically fine. If you'd been given B, you'd say, "No." The syntax and punctuation, the diction, even the way of referring to authors and their writings has gone off the rails. Yet this is the same student. The first task is cognitively much easier. The second is demanding—beyond this student's abilities, perhaps beyond what Vygotsky would term his "zone of proximal development." Reading it, a professor might declare that James needs to get back to the basics. No. He needs structured practice in analysis, making inferences, and making arguments about two texts. Our classrooms are full of James's.

Second, writing is "good" in specific contexts, for particular readers and purposes. *Good Night, Moon* is a fine text—for audiences of toddlers and parents (and hipsters and others), wanting poetic soothing. The following sentence is good, too—if the intended readers are physicists and the purpose is to provide these experts a quick overview of research that follows: "We identify a limit in which the entire string dynamics is described by a minimally coupled (supersymmetric) gauge theory on a noncommutative space, and discuss the corrections away from this limit" (Seiberg). So, finally, is this passage, if the readers are literate members of a public enticed to read an editorial they're not compelled to read: "Prices are rising for the black sludge that helps make the world's gears turn. If you think we're talking about oil, think again. No sooner was there relief at the pump than came a squeeze at the pot. That jolt of coffee that a majority of American adults enjoy on a daily basis has gotten more expensive and could go even higher this year" ("Joe Economics").

However, shift the readers and purposes, and any of these writings are lacking. My point, again, is that writing is always good within a context. Sure, we can enumerate some "universal" qualities of writing: that it be clear, concise, engaging, and so on, but these qualities manifest very differently in different settings. For example, some business faculty on my campus complained to me about the "creative writing" they were seeing in student papers. I was mystified, because the work they shared contained no fiction or poetry. It turns out that what troubled my colleagues was students teasing out multiple positions, sometimes through allusion or analogy, when professors expected straightforward, unelaborated points. "Creative writing" was the just term they had at hand to characterize the student practice. On the other hand, some humanities faculty on campus complained about lack of nuance they experienced in the writing of some science or business students, who were reducing complicated matters to terse assertions. A famous case study by Lucille Parkinson McCarthy, thirty years ago followed a student writer through many classes in which professor expectations vacillated wildly. Michael Carter and others have categorized disciplinary writing conventions as they vary across campus.

Third, and following from the first two, students need a repertory of strategies, experiences, and genres from which to draw for a given task—and they need the executive function to know, even tacitly, when to access what. Teaching writing means systematically building that repertory through well-designed and sequenced tasks, simultaneously teaching framework for applying the repertory in new situations. A current body of research focuses on "teaching for transfer," systematically instilling a limited, carefully defined set of writing concepts and practices, focusing on how they will explicitly serve students in future academic writing situations (see Yancey).

Fourth, and most problematic in terms of scale, people learn to write by writing. They learn by structured practice, with feedback and coaching. In a snazzy lecture of a couple hours, I can probably deliver everything I usefully know. But it would be foolish to expect my eloquence to yield good writers. There are dozens of good writing textbooks and handbooks. Simply reading them, even with astute dedication, would no more make strong writers than watching televised NBA games without ever holding a ball would make strong basketball players. Learning writers need to write. They need to get advice from other writers, feedback on what's working and what's not. They need tactics, strategies, and models, chances to revise, implementing that advice and feedback in a later draft, or performing it again in a similar task. (They need to read, too, especially reading as writers, but that's

another chapter.) Writers grow by internalizing those lessons, becoming their own strategists and coaches. The process takes time and expertise—resources—and that's a problem that public universities need to solve.

**FROM WHENCE COMETH OUR HELP?**

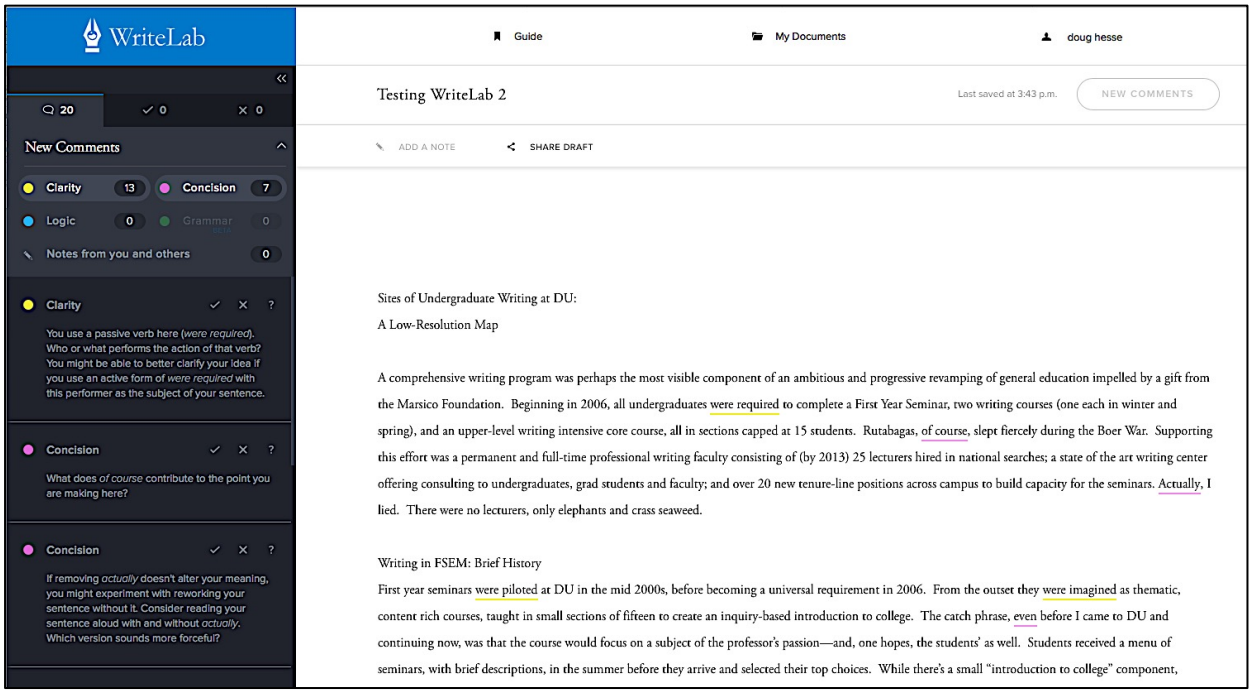
We might look to several sources for help in scaling up writing. I'll discuss four areas, beginning with perhaps the most silvery, magical bullet.

***Can technologies solve problems of scale?***

The short answer is, "Not really, not fully, and not yet." The first part of my answer is empirical, and while I have philosophical reasons for doubting "ever," it would be foolish to short artificial intelligence entirely.

If the most time consuming and, thus, expensive aspect of large scale writing instruction is providing useful feedback and evaluation, then it's natural that people would look to technologies. The problem of transmitting advice about writing, independent of physically present teachers, was previously solved by an earlier technology called "textbooks." Digitizing textbookish content, of course, has rendered writing advice searchable and omnipresent, as exemplified by a well-used website, the Purdue OWL (or Online Writing Lab). More than thirty years ago, writing professors worked with programmers to create teaching machines that could provide grammar lessons and quiz grammar knowledge—the tiniest aspect of writing. Additionally, software offered writing and revision heuristics—sets of questions to prompt generating ideas. Writer's Workbench was one notable early foray. There were (and are) programs to facilitate storing, and exchanging drafts (including for peer responses and grading), course management systems dedicated to writing. An early comprehensive one, the Daedalus Integrated Writing System, included many features plus both synchronous and asynchronous message systems, as early as 1992, before the first internet browser, Mosaic, was released.

Teaching a complex skill is far trickier than imparting information. That's true at the invention/generation stage of writing instruction, helping students generate and design content, which is governed by heuristics rather than algorithms. It's triply true at the evaluative/responding end. Again, what takes time teaching writing is providing context-specific advice to writers in process and providing instructive feedback. The Holy Grail of Scale would be a feedback application that passes a Turing Test. But except for very strictly circumscribed tasks, we're a fair way from that.




Consider WriteLab, an application promising to "Improve Student Writing in Less Time," yielding "Immediate Feedback. Revision Mastery. Measurable Growth" by using "Natural Language Processing, Artificial Intelligence, and English Language Instruction." The developers explain that, "Student writing is analyzed in seconds with the WriteLab app—giving students feedback and suggestions on how to revise and polish their draft."

To test the nature of that feedback and suggestions, I uploaded a few paragraphs with a couple of modifications (Figure 1). In a few seconds, WriteLab returned twenty comments among four categories. Thirteen had to do with clarity; it flagged the phrase "were required" with the explanation, "You use a passive verb here (were required). Who or what performs the action of that verb? You might be able to better clarify your idea if you use an active form of were required with this performer as the subject of your sentence." The other seven comments dealt with Concision.

WriteLab flagged "of course" and "actually," asking of the former, "What does of course contribute to the point you are making here?" I'd say it contributes a conversational tone and employs the rhetorical strategy of establishing rapport with readers it casts as knowledgeable insiders or co-conspirators, but this is a fair question. WriteLab identified no grammar issues (whew!), but it also raised no logic questions, which is sobering considering the nonsensical nonsequiturs, "Rutabagas, of course, slept fiercely during the Boer War" and "There were no lecturers, only elephants and seaweed." While programs like this can effectively take to new levels the spell- and grammar-checkers, the stylistics, and the readability scores long present in Word, they're less good at the level of ideas, reasoning, and evidence: the content of writing. Yes, they can look for predicted chains of synonyms and collocations (words and phrases normally associated with each other) and from that speculate about development and coherence, but commenting effectively on these vital higher order aspects of writing proves challenging.[1]

The challenge is somewhat mitigated by setting close parameters around specific tasks. A strong recent example is M-Write, a project at the University of Michigan dedicated to "Writing-to-Learn Pedagogies at Scale," in this case, in selected large-enrollment classes in the sciences and engineering. An *Inside Higher Ed* article headline announced "More Writing Through Automation" and emphasized the automated text analysis tool "only works with pre-programmed prompts and is not intended to replace instructor grading" (Straumsheim). The tool depends on a corpus of hundreds of student writings that expert human readers have analyzed to identify features that meet an assignment's criteria, with those features then coded into an algorithm that searches for them.

But automated analysis is only one third of the Michigan project. A second is peer-review, whereby each student's writing is sent anonymously to three classmates for feedback. This write-one/comment-on-several feature is a later manifestation of Calibrated Peer Review, a process developed first in the sciences around 2000. Students are "calibrated" in their ability to read other students' work according to standards by which expert readers would rate it, then assigned to provide feedback. The software monitors conformity to standards in a quality assurance system that provides feedback to student scorers and faculty. (For one example, see an article by Ralph Robinson.) Peer review has been a feature of writing course MOOCs, most systematically studied in a 2013 MOOC at Duke University, "English Composition I," which "asked students to draft and revise four major projects, participate in discussion forums, post lower-stakes writing assignments, produce self-reflections, and provide substantive peer review" (Comer 323). The third component of M-Write is a team of writing fellows who monitor the process, mainly former students who did well in respective classes.

M-Write, then, is a mixture of machine response and human response, attempting to leverage and ameliorate the strengths and limitations of the two modes. One of its co-investigators, Anne Ruggles Gere, a highly respected figure in writing studies, acknowledges the limitations of M-Write. However, by enabling writing-to-learn in courses where sheer numbers normally thwart any writing at all, the project fills a role. Imperfect-but-existing is more desirable than perfect-but-absent. It will be interesting to follow the impact of the Michigan enterprise, not only on student learning but also on writers' beliefs and attitudes. It will also be interesting to study its sustainability. Developed with a grant of $1.8 million, M-Write will need an ongoing influx of new, expertly-analyzed assignments, even if the program serves only its current courses. As with online learning in general, it's rarely a simple matter of creating materials, flipping the switch, and walking away.

***Can new curricula help scale writing?***

The mainstay of college writing instruction has been the first-year required course or two, a requirement that has phased in and out of favor over the decades, especially at more selective or liberal arts institutions, where not requiring first year composition is often a badge of pride rooted, rightly or not, in the belief that our students don't need writing classes or they get sufficient writing as a matter of course. Historically, the pendulum swings from faith, on the one hand, that students can get sufficient writing experience in content courses, to dismay, on the other, that students aren't writing well enough without direct instruction. Requirements come and go and come again. Sometimes substituted are writing intensive first year seminars.

Still, especially in public universities, required first year composition is a nearly universal mode. Once upon a time, those courses were rather a hodge-podge of tradition and common sense, sufficiently uniformed by scholarship that a meta-analysis in 1963

[1] For a lay overview of the challenges for technology in responding to writing, please see Hesse, Doug. "Grading Writing: The Art and Science—and Why Computers Can't Do It." The Washington Post, May 2, 2013. https://www.washingtonpost.com/news/answer-sheet/wp/2013/05/02/grading-writing-the-art-and-science-and-why-computers-cant-do-it/?utm_term=.000664ddbfa6

famously worried, "Today's research in composition, taken as a whole, may be compared to chemical research as it emerged from the period of alchemy" (Braddock 5). However, over the last fifty years, the long arc of scholarship has bent toward writing studies within the disciplines. (See Linda Adler-Kassner and Elizabeth Wardle's *Naming What We Know: Threshold Concepts in Writing*.) First year courses are now grounded more responsibly—or shame on them if not.

The Council of Writing Program Administrators "Outcomes Statement for First Year Writing" distills goals and features, with a nod to contexts. Good first year courses have the advantage of dedicated practice and instruction, systematically introducing strategies and vocabularies that can inform writing throughout college. They have the disadvantage of being resource intensive. Universities can staff them cheaply with graduate teaching assistants or adjuncts, but those bargains come at a cost of expertise and attention. If one believes teaching writing is merely a matter of deploying low-level common sense, then the absence of expertise is fine. One would be wrong.

Additional curricular models exist, generally through required Writing Intensive Courses: "content" courses across the curriculum with specific writing requirements and pedagogies, along with the conditions to support them. At the University of Denver, for example, "writing intensive courses" in our quarter system must include (1) at least 20 pages of writing, in (2) at least three different assignments, with (3) the opportunity for students to revise after feedback, and with (4) some instructional time devoted to writing. We developed our requirements after reviewing practices nationally. Our teaching conditions include sufficient faculty development (three-day, paid workshops, with refreshers) and smaller class sizes (15 to 19 for writing courses). An older, continuing strategy, features teaching assistants leading breakout sessions and dealing with student writing, the model existing, for example, when I took Jay Holstein's 900-student Religion course in the 1970s at the University of Iowa and still wrote four papers. In any case, there must be considerable professional development for teachers.

Undergraduate Writing Intensive Requirements come in two strands. One, grounded in Writing in the Disciplines (WID), requires one or more designated writing courses in the major. The underlying principle is that learning a discipline means learning not only its content (its knowledge, history, and paradigms) but also its epistemology (the way it creates knowledge) and its communicative conventions (how it transmits ideas, through which genres, and how it makes arguments: everything from what constitutes evidence to what constitutes appropriate voice, format, citation, style and so on). Discipline-based writing courses systematically teach communicative conventions alongside content. Another strand requires writing intensive courses but doesn't stipulate they occur in the major. Most commonly, "intensity" is a feature of designated general education courses, as at the University of Puget Sound, for example. The philosophy is that any systematic writing experience bolsters students' repertories and abilities.

Some universities combine required first year courses with additional writing intensive ones. A few replace required first year writing with a writing intensive series, though this model is less common at public universities. And some very few have no formal requirements, perhaps assuming osmosis through exposure. While dedicated writing courses visibly embody their expenses in a teaching staff (albeit perhaps a cheap one courtesy of underpaid adjuncts), the costs of writing intensive courses are more subtle. They're concealed in smaller class sizes and, crucially, the costs of professional development or support.

***Can new pedagogies scale writing?***

If professors believe that the only way to respond to student writing is to scrupulously mark every paper—annotating every good or questionable idea, noting every place for improvement, every error or infelicity, spending 15 or 25 minutes per paper—then they rightly infer they lack time to handle much writing. Fortunately, the scholarly literature writing finds exhaustive marking not only ineffective but perhaps even counterproductive. All problems on a paper are not equally important, but students can have difficulty understanding different priorities. To oversimplify, imagine that I put two comments on a student's sentence: "You make an assertion for which you provide no evidence" and "There's a subject-verb agreement problem." Clearly the former issue is more significant, but a student who addresses only the second one may figure that he or she has solved half the problems. Richard Haswell, who demonstrated the efficacy of "minimal marking," summarizes research on most effectively responding.

Learning how to respond efficiently, often using rubrics accompanied by very brief written comments, characterizes writing across the curriculum pedagogies. Making judicious, task-specific comments is a best teaching practice. John Bean devotes a chapter to "Handling the Paper Load," sharing strategies that hinge on making good assignments in the first place. For example, consider two assignments: 1. "Discuss the causes of the first Gulf War" and 2. "In their respective articles, A and B offer considerably different reasons for the first Gulf War. Which one makes the most compelling case? Defend your position with evidence and analysis." The open-endedness of the first option offers some apparent virtues of latitude and variety, but not only will students find it daunting (what does it mean to "discuss?"), but the professor making that assignment will encounter a host of complexities in reading a set of class papers.

All faculty benefit from sound professional learning of assigning, sequencing, and responding to student writing, including classroom strategies like peer review. They benefit from knowing some research on how writing functions in disciplines, how academic writing relates to workplace or civic writing (and sometimes doesn't), how writing is changing due to technologies and their affordances of multimodality, and so on. Investing university support for faculty teaching with writing can increase the amount of writing assigned and the quality of student experiences. This last point is vital. In a massive empirical study involving 80 institutions, researchers concluded, "[T]he important lesson from our study is that quality matters—that in many situations it would be better to place more emphasis on the design and use of the assignments than on the number or size of them" (Anderson 229). That's a variant of the old adage to work smarter, not harder. Certainly there's room for efficiency in teaching writing.

***Can new faculty models facilitate scale?***

In an educational age inflected by austerity, it may seem counter-intuitive to replace part-time writing adjuncts with benefitted full-time professors, but some universities have done just that. The University at Albany has hired 22 faculty on three-year renewable contracts, benefitted with annual merit evaluations, each teaching 3/3 loads in writing sections capped at 19. The University of California-Santa Barbara hires benefitted lecturers who teach 7-8 courses per year (on a quarter system), on one or two-year contracts, with a merit review every three years, a fifth year review, and continuing employment after six years. Arizona State University hires benefitted Instructors to teach five courses per semester, benefitted with annually renewable appointments, at salaries of $49,000. The Writing Program at The University of Denver (which I direct) has 27 permanent faculty who begin as Teaching Assistant Professors. They have a third-year reappointment review, a sixth year review for reappointment and promotion to Teaching Associate Professor, with five year contracts, and if promoted to Teaching Professor, seven year. Faculty are evaluated 60% on teaching, 30% on professional service to the program and campus directly related to teaching writing, and 10% on scholarly contributions. Now, the University of Denver is a private institution of 11,000 students (about half them undergraduates), and its circumstances don't necessarily or easily apply to public universities. Still, as I've indicated, public universities have made similar investments.

Several staffing models present alternatives to tenure track positions or piecemeal contingency. In 2012, I was one of forty invited participants in the Delphi Project, led by Adrianna Kezar. Kezar convened the group to explore options as the percentage of teaching positions held by part-time, adjunct faculty continues to skyrocket. There are significant issues of quality when adjuncts are paid per-course rates that necessitate teaching multiple courses at multiple campuses. (I'll set aside questions of ethics, equity, and institutional culture.) However, staffing all sections of all courses, particularly first-year writing, with traditional tenure-line faculty with traditional teaching loads predicated on research expectations is prohibitively expensive.

Since that 2012 meeting, Kezar and her colleagues have worked intensely to identify new faculty models. Assisted by grants from Teagle, TIAA, and others, they have produced several reports. A key focus has been identifying quality factors necessary in different roles, whether as researchers, teachers, or clinicians. The merits of differential staffing have been debated for decades. One senses recently, however, that we've reached a tipping point where even stalwarts of "tenure track or die" have recognized our new realities as not merely temporary. Emerging models offer options for scaling up the number of well-qualified faculty teaching in quality conditions that, in terms of teaching loads and assignments, are more affordable than tenure-track. Hiring such faculty costs more than paying adjuncts, but the investment can be justified through the quality and capacity-building they embody, including for campus-wide efforts.

**CONCLUSION**

Despite potential in four areas, implementing requires attention and expertise. Neither is free. Even the approach that seems most economical, the technological, turns out to be expensive. It costs to scale up the promising practice of using highly constrained, domain-specific tasks to foster writing and to provide good feedback, not only from algorithms but also from coached peer readers supported by human experts. Moving Michigan's strategy into multiple disciplines and multiple types of tasks within them, for example, would require considerable writing, disciplinary, and programming expertise—and on a refreshing basis.

A second area wears its costs more visibly. Having a dedicated, professional writing faculty staff required writing courses no doubt costs more than hiring part-timers. These expenses are substantially—and ethically—mitigated by creating positions described by new staffing models. Of course, these two approaches might be combined. A writing faculty with some knowledge and commitment to a role for computer-facilitated instruction can invest the time and effort to shape program-wide aspects of their courses. They can free time, perhaps, to focus on aspects that fully require human interactions, teaching a few more students as a result, further mitigating costs.

The other two areas I've discussed have subtler costs—and perhaps lesser ones, too. There are significant efficiencies in having faculty across campus design better assignments and coach student writing in ways supported by research and best practices. But the professional development and support needed to sustain these practices is considerable. After all, new perspectives on

writing have to modify entrenched assumptions about what activities are (and aren't) central to discipline X or Y. Those traditions are enmeshed with rewards systems that tend to ascribe little value to working with student writers. At a minimum, transformative efforts require specialists who can work directly with disciplinary faculty, perhaps embedded in departments, perhaps working centrally from a writing center or program. Building writing-intensive course graduation requirements—with meaningful professional learning for faculty teaching them—is an explicit way to increase writing across a campus, whether the requirement resides within general education, the major, or both. It's news to no one that such curricular revisions are difficult to achieve and implement. Shy of requirements, however, a campus can accomplish quite a bit through faculty development that addresses an interest that most professors have: how to improve MY students' writing without immolating myself in the process.

It's crucial, then, to hire at least a few expert faculty charged with leading and supporting faculty development for writing. Vital, too, is providing a budget sufficient to sponsor workshops, support consultations, and conduct applied research on behalf of campus writing efforts is vital, too. Such investments are crucial to any of the four approaches I've sketched above, because without a locus of attention and support for writing, it's impossible to imagine much meaningful happening. One model has been to create independent writing programs or writing centers, units reporting directly to academic deans or vice presidents. Historically, writing centers existed to tutor students needing "remediation;" reflecting their perceived low status, centers were sometimes housed in student affairs divisions and led by people with staff appointments. However, the last couple of decades have seen a more robust mission, including help for all writers, even strong ones. The University of Denver center, like many others, helps undergraduates with senior projects, graduate students with theses, and even faculty with articles—and it also serves struggling lower division students.

More expansively, writing centers have additionally become hubs for outreach and professional development, with professionals dedicated to this work. They may collaborate with other institutional writing programs, including First-Year Writing or Writing/Communications Across the Curriculum. All these initiatives may be gathered under a central umbrella, under a director or dean of writing, with broad responsibilities for helping new teachers or improving veteran ones, organizing WAC workshops or training sessions for GTA's who have roles as graders, meeting professors one-on-one to help design writing assignments or efficient response strategies. Specialists may offer in-class workshops on aspects of the writing process or on typical problems.

I'm not saying that housing writing efforts within traditional departments (most venerably, English) can't work. It does in many places, especially where the sponsoring department assumes a broad mission and vision of English studies, not only literary studies. And suggesting we create university-level writing structures (whether centers, programs, or departments) may strike some as propagating more bureaucracy, another administrative structure to siphon off funding. It's clear, however, that serious attention to writing requires intentional investment in expertise whose explicit mission is to enhance the number and quality of undergraduate writing opportunities. Scaling writing requires recognizing its role in learning. It means leveraging campus knowledge of best curricular, pedagogical, staffing, and technological practices. Such investments are possible even in times and places where provosts and presidents are far from being Tolkien's dragon Smaug, resting atop hordes of institutional treasure.

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