



Innovation in Teaching

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If we're asked, many of us can recall that one teacher. Someone who made a real difference in our lives and inspired us to become the person they knew we were capable of being. Whoever it was, our lives wouldn't be the same without them.

I've had the pleasure of meeting many amazing teachers throughout the world and on my own educational journey. Let me tell you about a few who have inspired me to achieve more in my life.

Ed Jernigan: one of my Systems Design Engineering professors who was relentless in building a better university experience for students to help them become world-class thinkers, problems solvers, and leaders. John Smallwood: A family friend that taught me the value of "feedforward" feedback in helping students grow and develop. Jaclyn Broadbent: a professor who has been committed to personalizing learning at scale to deliver better and better results for students. His Excellency David Johnston: my past university president, who believed in my potential before I hired my first employee. And the late Virginia Gray: my first big client, who taught me the value of giving back to the next generation of students in need.

While there have been many others, the most important teachers in my life have been my parents. My mom received the key to our town for her dedication to the community and students, and my father has inspired thousands of students to become doctors, educators, engineers, and creative contributors to our world. It was their passion for helping students that inspired me to start a company dedicated to leveraging technology to help improve the educational experience for millions of people around the world.

A teacher affects eternity; he can never tell where his influence stops.

- 19th Century Educator, Henry Adams

This Henry Adams quote has always inspired me to remember the lasting impact educators have on the lives of this generation of students and the impact that will carry forward to the next. As someone who has spent the last seventeen years on the leading edge of learning technology, I have seen firsthand what teachers, professors, and academics at all levels of education can do when they have the right tools and support.

Every teacher has unique strategies to engage and inspire learners. And every learner is unique. We need to remember that if we are going to have a lasting impact on the quality of education around the world, we need to continually strive to improve the educational experience each and every day.

On behalf of everyone at D2L, we would like to celebrate the efforts of teachers around the world who inspire their students every day. I hope that you will join us and take the time to #ThankATeacher who made a real difference in your life.

John Baker
President & CEO
D2L

Introduction

Teaching is crucial to the mission of every college and university – even if the degree programs, students, faculty members and institutional missions vary widely. This compilation of articles and essays illustrates the many ways faculty members strive to be the best possible teachers – and some of the expert advice and tools available to them. Whether trying to teach first-year composition or advanced science, faculty members are pushing themselves and their students.

Inside Higher Ed will continue to cover innovation in teaching, and we welcome your thoughts on this compilation and your suggestions for future coverage.

--The Editors
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News

A selection of articles by *Inside Higher Ed* reporters

Not Just Research

BY COLLEEN FLAHERTY

Organization of leading universities is pushing for undergraduate STEM education to get more attention -- and initiative seems to be yielding results.

It's no secret that science courses, particularly at the first- and second-year levels, can be dry. The classes are big, the content is wide but typically shallow, and professors often resort to lectures. There's a lot of talk among science educators about how to make these courses more interesting, to attract students and retain them as majors, but much of the conversation thus far has focused on improving individual faculty members' teaching. And that's not a bad thing: one innovative teacher in a department is better than none.

But that approach relies more on a ripple effect than seeking to change the tide. And many faculty members at research universities report that they have a tough time getting higher-ups' attention for

anything but research and securing grant money, making teaching a decidedly lower priority.

The Association of American Universities, a group of 62 leading public and private research institutions, wanted to do something about science education on a bigger scale. So in 2011, it launched the Undergraduate STEM Education Initiative to encourage systemic improvements to science education. As AAU program officers and other scholars wrote in a July 2015 article in *Nature* on revamping science education, the initiative is "based on understanding the wider setting in which educational innovations take place -- the department, the college, the university and the national level." It "emphasizes the separate roles of senior university

administrators (who can implement top-down change), individual faculty members (bottom-up change) and departments (change from the middle out), all of which are necessary for sustained institutional improvement to undergraduate STEM teaching and learning."

Emily Miller, an AAU senior program officer overseeing the initiative, said in an interview that it was inspired by a "growing body of evidence of how to effectively engage students in the learning of math and sciences, and the need to think about how to help and support and acknowledge the faculty members at [major research institutions] who are improving undergraduate education."

She added, "How do you bring a balance to teaching and research

when at these institutions the incentive structure is based very much around the research?”

So what does all that look like on the ground? Snapshots of a few universities' progress show there's no one way to eat an elephant.

The University of North Carolina at Chapel Hill

Kelly Hogan, a senior lecturer of biology at the University of North Carolina at Chapel Hill -- where biology, chemistry and physics are involved in the AAU initiative -- loves teaching. But she doesn't particularly like being at the front of the class. In fact, she finds the sage-on-the-stage-type lecture as tiring as many of her students appear to. So she keeps her introductory biology students on their toes even if they're in their seats with active learning exercises designed to increase their scientific literacy skills -- graphing data, evaluating study design, making conclusions and communicating with peers.

Here's an example prompt:

“In a study looking at the effectiveness of laser therapy acne treatment, 19 individuals were chosen to participate because they had at least five pimples. After the first laser treatment, participants exhibited a significant reduction in the average number of pimples. After the second treatment, another reduction in the average was found, and after the third treatment an even further reduction was found.”

Does laser therapy work to treat

acne? After drawing a graph of the data, students use a “bring your own device” software program called Learning Catalytics to report their findings.

Initially, 21 percent of students say yes to laser therapy as effective treatment. But after conferencing with peers -- quite willingly, even a massive lecture hall -- only 5 percent say it's effective. Back in their peer groups and later, in a class discussion, students articulate some of the problems with the study, such



An undergraduate physics class at the University of North Carolina at Chapel Hill, which is involved in AAU's undergraduate science initiative.

as that it has no control and small sample size.

Acne not your thing? Hogan's got a slew of other prompts on everything from ecology to evolution. Of course, the prompt at this point is far less important than the process -- the active learning and engagement of gateway science students that the AAU wants to foster. And AAU's initiative being what it is, this isn't really about Hogan, either. Rather, she

and other teaching-focused faculty members are coaching a group of volunteer professor “apprentices” -- some of them senior, tenured members of the science faculty -- to shake up their teaching in ways that will keep students in the sciences throughout their college and university careers.

Two years into the project, 15 apprentices have been trained by nine mentors. Apprentices get a formal course release in their first semester for training. Beyond that, apprentices are visited and observed by their mentors and participate in faculty learning community discussions for several more semesters.

Michael T. Crimmins, the Mary Ann Smith Professor of Chemistry at Carolina, was one of the first senior faculty members to join the AAU initiative as an apprentice, and he's now a mentor. He was paired with a much more junior instructor with expertise in active learning methods who mentored and team taught with him. He also developed a series of short concept videos for his students to watch before they came to class.

“We're trying to get students to engage with content multiple times, to get some information before they come to the classroom,” he said. “Then I'm a lot less of a lecturer than I used to be. ... The huge change is that I don't walk into class with notes or a PowerPoint -- I have some notes -- but it's not me talking, talking, talking. I talk a little bit but

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I'm posing students questions, and they're talking among themselves or in groups."

For the first few semesters, Crimmins said preparing to teach class this way was a lot of work. And time constraints -- beyond ego or comfort -- are probably the biggest barriers for professors in changing their teaching, he said. But two years later, the investment is worth it. "I love this," he said.

Other departments within the College of Arts and Sciences, including in the humanities, have begun to express interest in the initiative, which Crimmins called "transformational."

"That's really what we were trying to do from the beginning -- to try to effect a culture change," he said.

Kevin Guskiewicz, senior associate dean for the natural sciences at Carolina, said the mentor-apprentice approach to teaching active learning pedagogy already has reaped some measurable results.

In introductory biology, for example, first-generation college students -- traditionally those who tend to struggle in big, introductory science courses -- closed the achievement gap. Black students halved the gap with a 6-7 percent increase in their final exam scores compared to those who took the unmodified course five years ago. Latino students also are seeing some gains, but determining whether those gains are meaningful or not requires more analysis.

Guskiewicz said he believes the initiative also has helped more women enroll in gateway science

courses; campuswide, women now make up 63 percent of gateway science students, compared to lower numbers in the past. Time will tell whether they remain as majors, he said. And the university wants to study further whether the modified course has improved learning for all students, not just higher-risk groups.

"This is a culture shift -- there are people here who think that the culture that exists is fine, they're traditionalists," Guskiewicz said. "And looking at the data is one way we're trying to change the culture, by embracing tradition but trying to find ways to improve."

Hogan agreed that evidence is key to recruiting new apprentices.



*Kelly Hogan teaching at the University of North Carolina at Chapel Hill.
Courtesy: Viji Sathy*

"When you're trying effect a culture shift, you have your change agents, your supporters and your skeptics," she said.

Michigan State University

While North Carolina focused on teaching first, and later narrowed down content to make room in the course for innovative teaching and active learning, faculty members involved in the AAU initiative at Michigan State University started at the other end. Melanie Cooper, the Lappan-Phillips Professor of Science Education in the department of chemistry, said she and her colleagues are focusing first on what content is essential to their courses.

"Often other efforts are focused on changing how faculty conduct the class, to encourage more active learning and student engagement," said Cooper, who's heading up Michigan State's initiative involving gateway courses for students in chemistry, physics and biology. "But it's quite difficult to get faculty's attention that way, particularly research faculty who have a lot of demands on their time. What we wanted to do was see if we could get faculty to talk about what's important."

Research suggests that gateway courses -- with their mile-wide, inch-deep approaches -- can be a turn-off to students, Cooper said. So the idea was to make these gateway courses a little more narrow and meaningful to retain students' interest. "Ideally what we'd like is to be where students were actively engaged and developing useful, robust knowledge -- not just memoriz-

ing and regurgitating and doing rote calculations,” she said.

Cooper helped convene working groups in each of the three disciplines (there’s also a cross-discipline working group), in which faculty members are working to identify the “core ideas” of each introductory course. It doesn’t represent a dumbing down but rather a prioritization of what matters, she said.

There haven’t been any coverage wars, mainly because professors decide for themselves what to keep and what to scratch, Cooper said. And the 20 or so faculty members who attend meetings are there because they want to be.

“These are ongoing conversations and the faculty own the curriculum, but what we’re trying to do is use the core idea of the disciplines and these overarching ideas, and saying if what we’re teaching doesn’t support these core ideas, then we don’t need to teach it,” she said.

Inevitably, from these discussions emerge conversations about how to most effectively teach the core ideas, Cooper said. “You can’t lecture about modeling phenomena and analyzing data -- students have got to do it.”

Cooper, for example, uses active learning methods in transformed gateway chemistry course sections with hundreds of students. She starts off by reviewing students’ homework samples anonymously with the class. Students revise and correct their own work and ask questions. There’s typically a short lecture, followed by an activity and

student discussions. Instructors in the other transformed gateway courses have adopted similar methods.

Michigan State is still in the middle of its initiative, Cooper said, but will eventually gather and analyze data about student learning to see whether the efforts have made a difference -- especially for underrepresented students. The university also wants to study whether the initiative has made a difference in major retention rates.

Framework for Change

Eight universities are officially involved in the initiative and have received AAU seed funds with the support of the National Science Foundation and the Leona M. and Harry B. Helmsley Charitable Trust. Dozens more universities are interested: a spring workshop in Washington, for example, attracted some 60 department chairs from across the U.S. Speakers had different approaches to making their teaching more innovative -- the AAU initiative isn’t prescriptive -- but many examples were rooted in high-structure, active learning pedagogies. That is, active problem solving, analysis, synthesis, evaluation of content, even in big lectures, along with small-group learning. Classes are often flipped.

AAU has developed a framework for systemic change in undergraduate STEM teaching to help guide universities in their work. In the center is pedagogy, with a focus on articulated learning goals that are made explicit to students; educa-

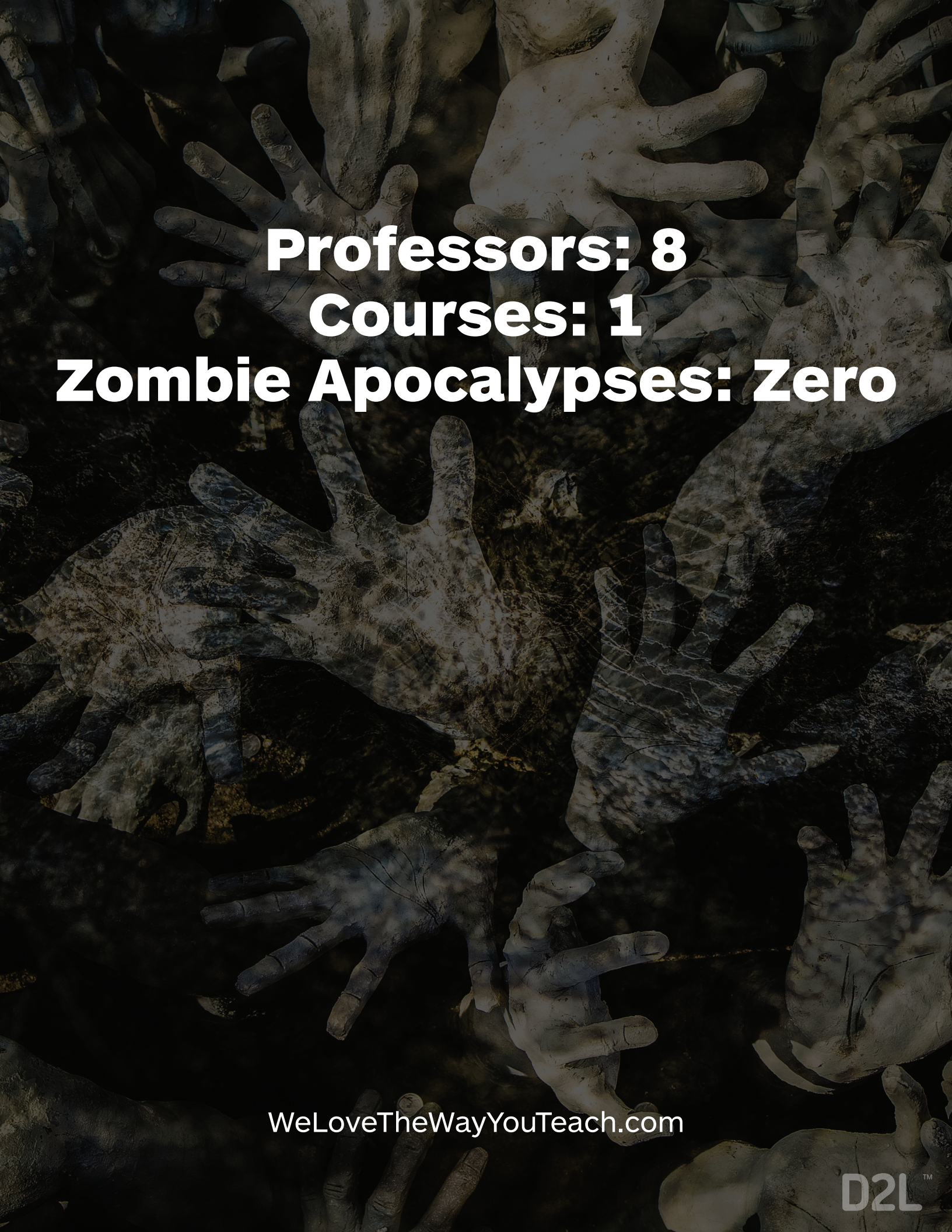
tional practices, such as engaging students in active learning, using real-world examples and letting data drive practice; assessments, including for hard-to-measure outcomes like scientific thinking and problem solving; and access (making sure that STEM courses are inclusive of all students).

Supporting pedagogy is scaffolding. That means providing faculty development of evidence-based teaching; providing faculty with easily accessible resources, such as learning tools and technology; collecting and sharing data on program performance; and aligning future facilities planning with modern instructional approaches.

Cultural change is the last part of the framework. That entails a leadership commitment on the part of the president and provost and distinguished faculty; establishing strong measures of teaching excellence, such as prioritizing teaching effectiveness in hiring decisions and basing teaching evaluations on more than just student feedback; and aligning incentives with the expectation of teaching excellence. According to AAU, teaching mastery should be a major part of the promotion and tenure process, for example, and efforts to promote teaching excellence should be counted in merit pay adjustments.

Miller, the AAU program officer, said there’s “great value in a undergraduate education at a research institution, where research and teaching are coupled. But we can do an even better job at that.” ■

<https://www.insidehighered.com/news/2015/08/20/aaus-push-science-teaching-yielding-results>



Professors: 8
Courses: 1
Zombie Apocalypses: Zero

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The Proof Liberal Arts Colleges Want

BY SCOTT JASCHIK

Study links certain traits of undergraduate education to success in life: meaningful interaction with professors, studying a variety of fields outside the major and having classroom talks that go to issues of ethics and life.

WASHINGTON -- Before Richard A. Detweiler's presentation here in January 2016 at the annual meeting of the Association of American Colleges and Universities, he asked audience members why they had selected his session, in which he had promised to present data about the long-term impact of having studied at a liberal arts college. The audience members were a mix of faculty members and administrators at liberal arts colleges and from liberal arts programs within larger universities. Many talked about looking for evidence to bolster their efforts to defend the liberal arts. One person said he wanted "ammunition for the liberal arts."

Detweiler, president of the Great Lakes Colleges Association, may have just provided some.

He presented early results from a research study (that he hopes eventually to turn into a book) about the long-term impact of having attended a liberal arts college or experienced qualities associated with liberal arts education. The results back up the claims that liberal arts advocates

make for their institutions -- claims that Detweiler said he feared didn't always have data behind them.

The study's initial results suggest that one can prove that a liberal arts-style education can be associated with greater odds, compared to others with bachelor's degrees, on such qualities as being a leader, being seen as ethical, appreciating arts and culture and leading a fulfilling and happy life.

How the Analysis Was Done

Detweiler said he wanted to look at characteristics of the undergraduate experience and didn't want to rely on whether graduates would identify their colleges as liberal arts institutions or not. First, he obtained a sample of 1,000 college graduates -- some from lists of liberal arts colleges' alumni and others from a random sample of the population of college graduates in the United States, a group in which liberal arts graduates are a minority. The sample was divided into groups of those 10 years, 20 years, and 40 years after graduation.

Those in the sample were then

asked a series of questions about their undergraduate educational experiences and about their lives since college.

The questions about undergraduate experiences focused on qualities associated with (but not always unique to) liberal arts colleges. There were questions about the intimate learning environment associated with liberal arts colleges (Did most professors know your name? Did you talk with faculty members outside of class about academic issues and also about nonclass-work-related topics? Were most class sizes in your first year not more than 30?).

There were questions about intellectual competencies related to the skills liberal arts colleges say they teach. But rather than saying, "Were you taught critical thinking?" the survey subjects were asked whether their professors encouraged them to examine the strengths and weaknesses of their views, and those of others, and whether they spent class time regularly talking about issues for which there was no single

correct answer.

To examine breadth of education, they were asked how many courses (or what share of courses) came from outside their major.

With regard to life experiences, the survey subjects were then asked questions designed to tease out whether these graduates possessed the qualities liberal arts colleges claim to provide. But again, the questions weren't direct. So rather than say, "Are you a leader?" people were asked if they regularly had people seeking their advice outside their areas of expertise, whether they were frequently called on as mentors, whether they have been elected to positions in social, cultural, professional and political groups.

Another goal many liberal arts colleges have is to educate people who will contribute to society. So the college graduates in the sample were asked things such as whether they are volunteers and how much they volunteer, whether they vote regularly, what share of their income they donate to charity.

Matching the Results

Detweiler then reviewed the findings, which had the audience of liberal arts supporters excited.

For example, in looking at whether people in the larger sample had leadership characteristics, he found that -- depending on how many characteristics of an intimate education they reported -- adults were 30 to 100 percent more likely to show leadership with the liberal arts background. The key factor appeared to be out-of-the-classroom

discussions with faculty members (both on academic and nonacademic subjects).

The same faculty interaction made alumni 26 to 66 percent more likely to be people who contribute to society (volunteering, charitable giving, etc.).

Another quality the study examined was whether people were generally satisfied with their lives and viewed their professional and family lives as meaningful. This type of happiness was significantly more



Kenyon College

likely (25 percent to 35 percent), the study found, for those who reported that as undergraduates they had conversations with those who disagreed with them and had in-class discussions of different philosophical, literary and ethical perspectives.

Detweiler acknowledged the current cultural "obsession" with salaries as a measure of the value of a college education. And he said it was true business and engineering majors earned more, on average, than those with liberal arts majors. But he also noted that the top factor associated with a six-figure salary was not college major but having

taken a large share of classes outside one's major.

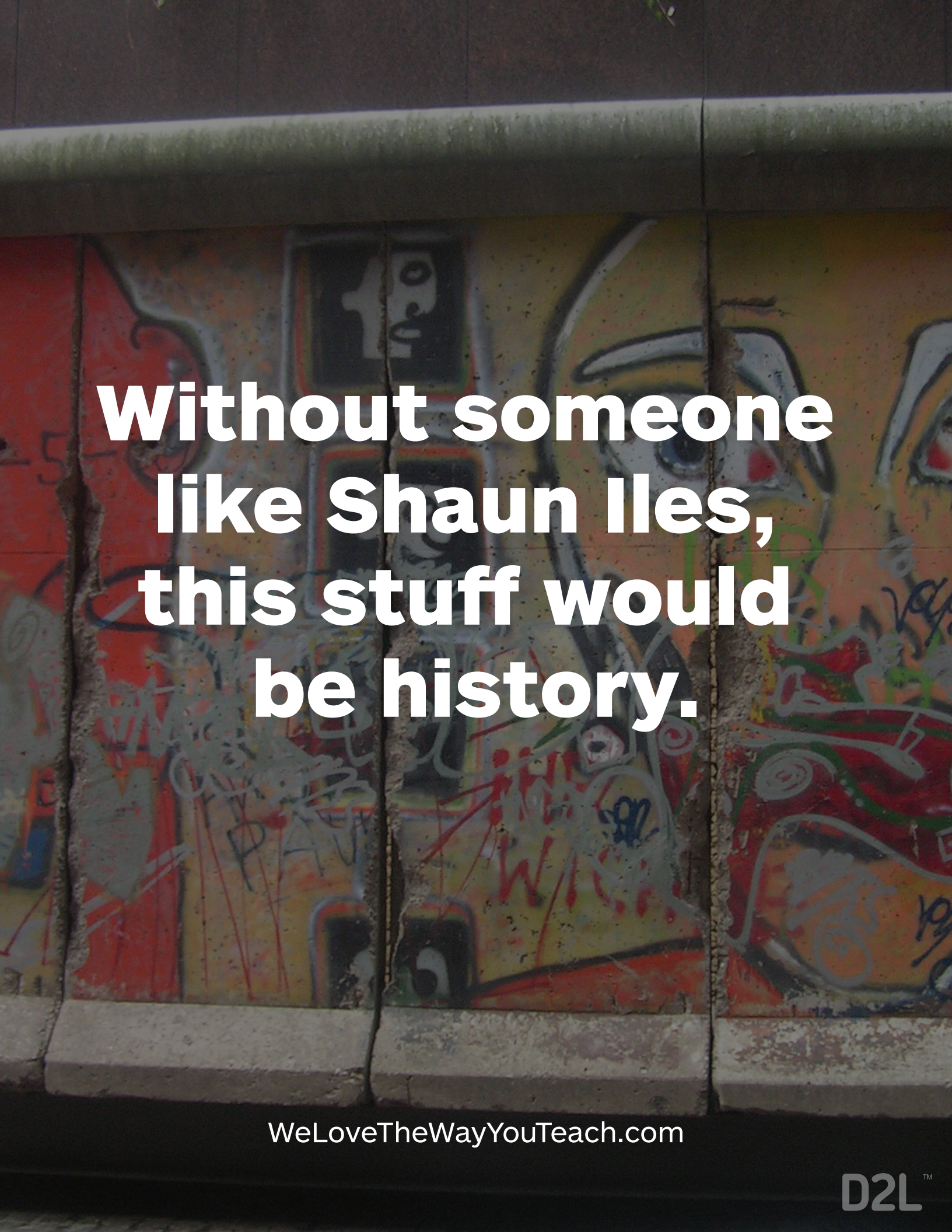
What Does It All Mean?

Detweiler said faculty engagement on a personal level seemed to be the factor in the undergraduate experience that had the greatest impact on life success by the measures he studied.

That doesn't mean, he said, that academics should reject all technology tools. He said, for example, that he saw the "flipped classroom" -- in which lectures are placed online to allow for more interactive and meaningful student-faculty interaction in class -- as something that his findings would encourage. But he said large online classes (or large in-person classes without meaningful interaction) were inconsistent with these ideas. He also noted the impact not so much of major, but of studying many fields outside one's major and of having intense philosophical discussions in class. Those things, he said, produce leaders, ethical people and happy people, the study suggests.

Many in the audience cheered the findings and said they were anxious for Detweiler to write his book and share the findings more broadly. But their excitement was tinged with regret about many trends in higher education. One audience member said the pressures on faculty members and administrators today -- for speedier, less expensive and more career-focused education -- "are all in the opposite direction" of the study's findings. ■

<https://www.insidehighered.com/news/2016/01/22/study-traces-characteristics-undergraduate-education-key-measures-success-life>



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No More 8 a.m. Classes

BY JOSH LOGUE

A university in Michigan has great news for the bleary-eyed but hopes at least some of them will still get up early.

For many, 8 a.m. classes are a slog. At Lake Superior State University in Sault Ste. Marie, Mich., they can be a slog in 10-degree weather. For now.

In the fall of 2016, students there will wake to find 8 a.m. classes replaced by a free “common hour” intended to increase participation in recently instituted shared governance initiatives at the university.

Ridding the university of early-morning classes that are despised by many (though not all) students and professors is actually a side effect, officials said, of an attempt to find a time during the day when more people would be able to attend University Senate and various issue-specific committee meetings.

“We see this as a beneficial side effect,” said the university’s provost, David Finley. “Many college students aren’t at their best at that hour.”

These meetings are part of a broad push that started in

2009 to gather input from students and university employees and increase participation in the university’s decision-making process. And because Lake Superior State is on the small side -- only about 2,000 students and 400 employees -- officials saw an opportunity to include a significant number of people.

These types of meetings were originally scheduled for 5 p.m., but that conflicted with dinnertime for students and was hard for many faculty and staff members, especially those with children. After dismissing the possibility of 4 p.m.,

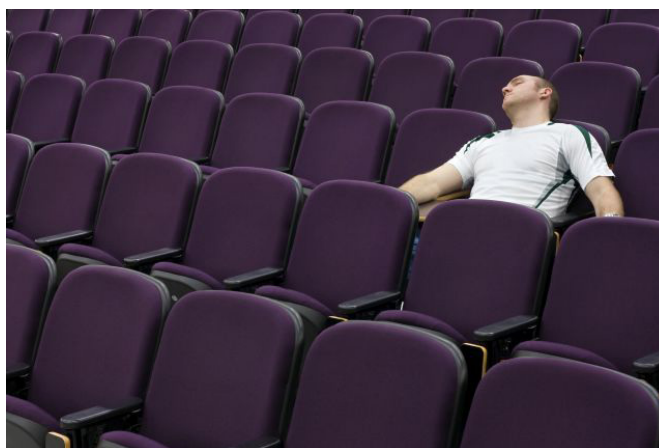
which conflicted with lots of labs, and noon, which nobody wanted to give up, university officials settled on 8 a.m.

“We’re optimistic that this will allow those go-getter students and staff not on the clock after five to be included in shared governance,” he said. Although, he added, “I’d be naïve to say I didn’t think there’d be more sleep.”

Students seem to like the idea, too.

“I haven’t heard a single negative response from any of our current students,” Richard Homan, president of the Student Government there, said in an email. “I’m sure that some students will take this opportunity to sleep in, but I also believe that many students will take this as a chance to prepare for classes, complete homework and attend university committee meetings. I know that I will be attending these meetings.”

Research into the effect of



course scheduling on student performance is scant and contradictory, however.

A 2008 analysis of 12,886 Clemson University students, for example, found that their grades increased in courses they took as the day wore on, and were particularly bad early in the morning. But those effects were rather small and the study's authors note that they did not look at professors, who may vary in quality or assign different grades based on the time of day.

Still, the analysis showed that each hour later in the day that a class started was associated with a 0.024 grade point increase (on a normal grading scale where 4 equals an A, 3 a B and so on). Angela Dills, now an associate professor of economics at Providence College, and Rey Hernandez-Julian, associate professor of economics at Metropolitan State University of Denver, wrote the paper, which can be found here.

A smaller but more recent study, however, from St. Lawrence University in New York, found essentially the opposite result. For every one

hour that classes started later, the grade point average of 255 St. Lawrence students declined by 0.022 points. The study, written by the associate professors of psychology Serge Onyper and Pamela Thacher, looked at a number of factors, however, including alcohol use, sleep duration and student sleepiness.

Because Onyper and Thacher found that sleepiness does affect student academic performance negatively, they suggest another factor -- alcohol use -- might be to blame for the poor-performing afternoon-class takers. Students in later classes were more likely to binge drink the night before class and therefore get less restful sleep.

Speaking generally, Michael Reilly, executive director of the American Association of Collegiate Registrars and Admissions Officers, said, "I'm not sure giving up 8 a.m. classes is in the best interest of most institutions." He noted the conflicting studies on the issue; there being "those who find it attracts organized, serious students and those who say it attracts the registration procrastinators."

And, Reilly said, in the latter case, the best solution might involve online versions of those early courses. "I'll also add," he said, "that most campuses would find it difficult to make up the lost classroom capacity from ending 8 a.m. classes."

So far, at Lake Superior State, classroom logistics don't seem to be causing too much trouble. To accommodate the free hour in the morning, Finley said, officials there pushed all the morning classes back an hour -- 8 a.m. classes to 9 a.m., and so on.

They left the afternoon classes as they are and moved the noon block of classes to the evening. Essentially, Finley explained, the university's class day would operate on a nine-to-six schedule rather than eight to five while still maintain the same number of time slots. Plus, a new building is opening soon, which will add 10 more classrooms.

"What remains to be seen is whether students will get up to go to a meeting," said Thomas Pink, director of public relations at Lake Superior State. "It'll be interesting to see how this goes." ■

<https://www.insidehighered.com/news/2016/02/17/university-decides-eliminate-8-am-classes>

When More Is Less

BY COLLEEN FLAHERTY

New study suggests that when it comes to writing assignments and instruction, quality -- not quantity -- matters most.

Much research suggests that more writing is associated with more learning, and that's given more credence to the Writing Across the Curriculum movement, which promotes the importance of writing assignments everywhere, not just in composition classes. The landmark 2011 book *Academically Adrift: Limited Learning on College Campuses*, for example, says the one notable exception to the finding that students learn little after three semesters at college in terms of critical thinking and complex reasoning is among those students who write the most. But the research on which writing interventions are most helpful is less conclusive, and that's caused some to doubt the effectiveness of pedagogies that promote a good deal of writing in fields beyond English. Supporters of such pedagogies, meanwhile, believe in writing to learn.

A study released in December 2015 sheds more light on the quality versus quantity issue. It seeks to clear up some of the outstanding questions about which writing interventions work best -- and whether more truly is better.

In short, the study says, it's not.

"Effective writing practices are associated much more strongly than the amount of writing with greater student learning and development," the study says. "There are undoubtedly instances where there is no student writing or so little that more would be salutary. However, the 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."

In a collaboration between the National Survey of Student Engagement and the Council of Writing Program Administrators, the study's authors, with the help of colleagues, gathered a list of 27 writing practices that are said to be effective. They attached questions about those practices to the student engagement survey at 80 baccalaureate institutions, obtaining responses from 70,000 freshman and senior students.

The idea was to examine the relationship between the responses to the 27 writing practice-based questions and questions on the standard

questionnaire regarding two sets of established survey constructs: participation in "deep approaches to learning," or more-than-surface-level understanding of content, and "perceived gains in learning and development." The latter means students' self-reported intellectual growth and personal satisfaction over time.

Example practice-based questions included how many times during the current school year (mostly 2011) a writing assignment caused a student to brainstorm ideas before beginning a draft. How many times did you talk with your instructor to develop ideas before writing, another question asked. And did you explain in writing the meaning of numerical or statistical data?

The authors developed groupings -- essentially additional constructs -- for most of the questions: interactive writing processes, meaning-making writing tasks and clear writing expectations. The interactive construct assessed how students communicated with others, either orally or in writing, before submitting a final draft of an assignment. Meaning making assessed how

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students engaged in some form of integrative, critical or original thinking. And clear writing expectations explored whether students had a solid understanding of what was required of them upon receiving a writing assignment.

Using various models in a regression analysis, the authors compared those responses to those gauging deep approaches to learning and perceived gains in learning and development. The authors define deep approaches as those that lead to higher-order, integrative and reflective learning. Perceived gains include those in practical competence, personal and social development, and general education. The authors controlled for various student characteristics, such as gender, age, race, ethnicity, area of study and self-reported grades, among other factors.

How many pages students were asked to write appeared to have minimal impact. The bivariate correlations between writing quantity and deep approaches -- meaning the relationship gets stronger as the value approaches 1, from 0 -- was 0.15 to 0.27 for first-year students, and 0.11 to 0.22 for seniors.

The correlations between effective interventions and deep approaches, meanwhile, were 0.20 to 0.42 for first years and 0.19 to 0.41 for seniors. Meaning-making assignments seemed to have the biggest positive impact. The authors call the correlations "moderate," but meaningful.

"Writing assignments and instructional practices represented by each of our three writing scales were associated with increased participation in deep approaches to learning," the study says (although some of that relationship was shared by



other forms of engagement). "First-year and senior students who reported that more of their writing assignments required meaning making were especially likely to report greater participation in all three forms of deep approaches to learning." Students who reported that more of their writing assignments involved clearly explained expectations were more likely to report greater higher-order learning in the classroom.

Effective writing practices -- in particular interactive writing processes and clear expectations -- had a small but significant impact on students' perceived gains in learning and development (the equivalent of about 5 percent of additional explained variance). Quantity had no impact on perceived gains.

Among interactive writing pro-

cesses, students were most likely to talk with classmates and others about their ideas before drafting an assignment, and they were least likely to visit campus-based writing or tutoring centers for help. Among the meaning-making tasks, nine out of 10 seniors and first-year students said they were asked to analyze or evaluate something they read in least some of their assignments, while fewer students were asked to talk about data. Nine in 10 students said at least some of their instructors provided clear instructions, explained what they wanted students to learn and described the criteria they would use to grade an assignment.

The study, called "The Contributions of Writing to Learning and Development: Results From a Large-Scale Multi-Institutional Study," was published in *Research in the Teaching of English*. It was written by a group of well-known writing scholars: Paul Anderson, the director of Writing Across the University and a professor of English at Elon University; Chris M. Anson, Distinguished University Professor and director of the Campus Writing and Speaking Program at North Carolina State University; and Charles Paine, a professor of English and the director of Rhetoric and Writing at the University of New Mexico. Their co-author, Robert M. Gonyea, is associate director of the Indiana University Center for Postsecondary Research and a research and reporting coor-

dinator for the student engagement survey.

In a group email, the authors said their findings about which interventions are most effective aren't just for writing instructors, and may even be especially useful for instructors in other fields, "many of whom feel that the more time they spend assigning and attending to their students' writing, the less time they will have to spend on the primary focus of their courses."

Gonyea said in an interview that the study has given way to a permanent new writing-based node based in the student engagement survey, pared down to 13 questions. Some 69 institutions elected to use it last year. Institutions like to compare their findings to the overall results, or compare year-over-year changes, he said.

"This has implications for the faculty, and how they structure their courses," Gonyea added. "There are certain disciplines where students don't do a lot of writing, and we'd encourage [instructors] not necessarily to assign longer papers, but to assign smaller writing tasks that go a long way in terms of student learning."

The authors said their research supports calls made by professional organizations to promote evidence-based writing practices, including a push by the Association of American Colleges and Universities to establish a national framework for writing goals in baccalaureate education. The study also may be helpful, they say, to nonwriting spe-

cialists interested in accountability and improving educational quality.

Elaine Maimon, president of Governors State University and a founder of Writing Across the Curriculum, has helped shaped AAC&U's stance on high-impact practices. Maimon called Writing Across the Curriculum "the original" high-impact practice, and said she'd endorse the study's premise that quality of interventions matters more than number of pages assigned.

"Students should write a great deal to develop fluency, but they should 'go public'" -- meaning submitting material for a grade, she said -- "only after carefully revising material, with interventions from the instructor and peers."

Daniel Melzer, associate director of first-year composition at the University of California at Davis, is referenced in the new paper for his popular 2014 study suggesting that most writing assignments are poorly crafted (The authors agree, and say more assignments need to be based on the practices they've identified). He said he's been following the authors' preliminary research, and that it's already made waves in the field.

Melzer said he agreed that getting faculty members to assign more writing has been a focus of the Writing Across the Curriculum program, but that it isn't really a push for more volume as much as a response to the fact that first-year students on many campuses were writing very little outside of their first-year writing or writing-intensive courses.

Like Maimon, he also distinguished between informal journals or "quick writes," and more formal assignments. Writing Across the Curriculum emphasizes the former, he said.

"I've always followed the suggestions in this [new] article that it's better to assign less formal writing but have students engage in a deep, interactive process of writing and meaning making," he said. "That said, my own research leads me to believe that in too many classes students only writing is short-answer exams, so more formal and extended writing may be called for in these cases."

Richard Arum, chair of sociology and a professor of education at New York University, co-wrote *Academically Adrift*, which also is cited in the new paper. Arum said it's "exciting to see researchers working to improve measurement of writing instruction," and that he never asserted that more writing alone is most effective.

"It is hard for me to imagine that any thoughtful educator believes that increasing the quantity of assigned writing is the most effective pedagogical approach to improving the quality of student writing," he said, noting he was once a high school English teacher. Like the study's authors, Arum said that because the data rely solely on student self-reported learning measures, he'd be "eager to see the work extended to test the extent to which these constructs track with objective measures of actual student writing." ■

Old School, New Tech

BY CARL STRAUMSHEIM

After spending millions on laptops and tablets for all students and upgrading its network infrastructure, Moravian College explores how it can use those investments to “redefine the classroom.”

If you were drawing up a list of American colleges and universities that boast the fastest Internet speeds, chances are that prestigious research institutes and technology institutes would rank high. How likely is it that Moravian College, a small liberal arts college in Bethlehem, Pa., would make that list?

Moravian is halfway into a transformation that college officials say will “level the playing field” technologically, putting laptops and tablets in the hands of all students and connecting them to a wireless network capable of speeds most of them will never need. At the same time, faculty members are exploring how the multimillion-dollar investments in hardware fit into the college’s centuries-long history as a seminary and liberal arts institution.

Some, like the college’s president, Bryon L. Grigsby, envision moving to a “cradle to grave” model of education. According to that model, Moravian will increase its residential undergraduate population, expand its lineup of graduate programs and, beyond that, offer working adults short, skill-based courses to keep

them coming back after graduation. Laptops and tablets, he said, can help the college move in that direction.

“My vision for Moravian would be a place where it truly took alma mater -- ‘soul mother’ -- seriously and said to its alums, ‘Wherever you are in your career path, we will be ready with the next upgrade to the content you need in whatever delivery fashion you would like it,’” Grigsby said in an interview. “It’s shortsighted to think of yourself as only serving 18- to 22-year-olds in a residential environment. ... You can be a fantastic residential liberal arts college and also have graduate programs and stackable credentials that serve the greater community. I’m always struck by these ‘either-or’ statements that you see quite often. You can be ‘and.’”

Grigsby graduated from Moravian in 1990 and returned as president in 2013. In one of his first moves, he proposed and won support for a program that ensures that each freshman receives a laptop and a tablet from Apple. In anticipation of thousands of new devices connecting to the campus network, the

college also spent \$2.4 million to upgrade its wireless infrastructure.

Grigsby said the initiatives are meant both as an equalizer and to further the college’s mission. First-generation students make up nearly one-quarter of Moravian’s undergraduate enrollment. Supplying them with laptops and tablets means all students have an opportunity to familiarize themselves with the technology they will be using daily in their careers, he said.

“Technology is just like any of the other liberal arts skills that we want to provide our students,” Grigsby said, listing it alongside critical thinking, communication and collaboration as skills that liberal arts colleges have a responsibility to promote in their students. Colleges, he added, have “given up that responsibility by saying [students] just know how to do this because they’re ‘digital natives.’ I don’t want to give up that responsibility.”

By fall 2017, the device program will cover all of Moravian’s roughly 1,730 undergraduates, and the network may reach its target speed of one gigabit per second (in other words, capable of everyone on cam-

Innovation in Teaching

pus streaming about 40 movies and TV shows from Netflix in “ultra-HD” quality at the same time). At that point, said Scott C. Hughes, the college’s chief information officer, “we’re going to take a look at how we redefine the classroom.”

That debate, when it arrives in a couple of years, won’t be painless. The role of technology in the classroom continues to be a hot topic of debate in higher education, and faculty at many colleges have opposed what they see as top-down approaches by administrators.

“There’s always going to be pushback against stuff that’s seen as new,” Grigsby said but added, “You cannot be 20 years old and choose not to engage in technology and truly be successful, I believe.”

Hughes stressed Moravian is not looking to use technology to rapidly enroll thousands more students than it does today (the college’s strategic plan aims for 2,000 undergraduates by 2020). Instead, the investments in technology are an attempt by the college to “keep up with 21st-century expectations” -- in other words, the idea that a college should offer faster Internet speeds than students see at home, he said.

“If you choose not to follow tech-

nology, you just signed your own death sentence,” Hughes said. “We’re going to get into online education, hybrid learning, but we’re going to figure out how to wrap it around a liberal arts core.”

An early example of such an initiative is launching next spring in the department of economics and business. Gary Kaskowitz, associate professor and department chairman, will teach what could be the first of a new type of educational offering from Moravian -- a one-cred-



it-hour, skills-based course module in sales aimed at alumni interested in adding new knowledge on top of existing degrees.

“There are a lot of people out there who graduate with whatever degree and go out into the workforce and realize they might need a skill or two they didn’t have in their undergraduate education,” Kaskowitz said in an interview. “A stackable credential is a way to get at that.”

The module is essentially one-third of an M.B.A. course, Kaskowitz said. While a full course takes eight or nine weeks to complete, students could finish the module in three and pay about one-third of the price, he said. If a student completes three modules, he or she could potentially take an exam and have them count as credit toward an M.B.A., he said. Those details may change as the college continues to experiment.

The spring pilot will be taught in face-to-face and hybrid settings as instructors “get the kinks worked out,” Kaskowitz said. Moravian may offer a fully online version in the future. From there, it could expand to other departments, he said.

At the undergraduate level, faculty members will be encouraged to flip their classrooms -- moving lectures online to free up class time for hands-on activities -- to take advantage of the new devices. To prepare students for online education, the college may in the future require upper-classmen to take an online course, Grigsby said.

“Part of our new vision statement is the notion of education for everybody,” Kaskowitz said. “Our mission is to prepare you for a life or career that probably doesn’t exist yet.” ■

<https://www.insidehighered.com/news/2015/12/01/moravian-college-explores-pedagogical-changes-after-investments-technology>

Are Elite College Courses Better?

BY DOUG LEDERMAN

Study's preliminary findings suggest that teaching quality and academic rigor are not necessarily stronger at prestigious institutions.

DENVER -- The public -- and heck, many people in higher education -- widely assume prestigious colleges and universities provide the best quality education. That's why employers often want to hire their graduates and why many parents want their children to attend them.

And the assumption partially explains the fascination from the media and others in recent years with massive open online courses from Harvard and Stanford and other elite universities: the courses were believed, rightly or wrongly, to be of higher quality than all other online courses precisely because they came from name-brand institutions.

But what if the richest and best-known colleges and universities don't provide the highest-quality education? Would the perceived value of degrees from those institutions decline, and would colleges that were shown in fact to provide higher-quality courses be held in more esteem than they are now?

The push to measure student learning outcomes and other attempts to gauge which institutions,

programs and courses most help students learn have been motivated, in part, by skepticism about the assumption that the most famous and selective institutions deliver the highest-quality learning. But the quest for proof to the contrary has at times seemed quixotic.

Researchers at Teachers College of Columbia University and at Yeshiva University, however, believe they are developing a legitimate way to compare the educational quality of courses across institutions -- and their initial analysis, they say, "raises questions about the value of higher-prestige institutions in terms of their teaching quality." They are cautious about asserting that they have proof, and experts on learning challenge some of their assumptions and warn against reading too much into them.

But the study and their approach -- which were previewed here in November 2015 during a session at the annual meeting of the Association for the Study of Higher Education -- are likely to raise questions, and at the very least start an inter-

esting conversation about what and how we define quality in higher education.

Pushing Back Against Prestige

The new research is the work of Corbin M. Campbell and Marisol Jimenez of Teachers College and Christine Arlene N. Arrozal of Yeshiva University's Benjamin N. Cardozo School of Law, supported by a fellowship from the National Academy of Education and the Spencer Foundation. You get some hints about their perspective from the paper's working title: "The Mirage of Prestige: The educational quality of courses in prestigious and non-prestigious institutions."

The researchers work from the presumption that historically, quality and "prestige" in higher education have been defined much more by the "signaling" aspect of an institution or degree (the extent to which employers and others see it as evidence of a student's potential for employment or leadership) than by proof that it has actually been "transformative," cognitively and

otherwise, to the students who have gone through it.

A whole infrastructure has mimicked and reinforced this bias, the researchers argue, with rankings such as *U.S. News & World Report* elevating the values of the high-prestige institutions (selectivity in admissions, research over teaching in faculty work, high institutional spending) and influencing the behavior of many students, many institutions, and some governments and other funders.

And by favoring the traits that gain colleges and universities currency in the rankings and all that follows, the researchers posit, colleges and universities adopt trappings and practices (getting more selective, etc.) that strengthen their signaling potential at the expense of those that make them more likely to focus on transforming students through quality education.

“Given that the prestige structure in higher education has bifurcated the signaling and transformation missions, we consider the possibility that higher-status institutions (via the rankings) may fulfill the signaling mission, but institutions that are lower in status may better fulfill the transformation mission.”

So how do the researchers go about trying to define and measure the quality of education, arguably a holy grail? By sending actual faculty observers into nearly 600 classrooms at nine colleges and universities with various levels of prestige and having them judge the teaching quality and academic rigor of the

courses they offer, using a common rubric on which the observers have been trained for about 30 hours. The nine institutions -- three with high prestige, two medium prestige and four with low prestige -- were a mix of public and private, teaching and research intensive.

(Teaching quality was defined



as instruction that displayed the instructor’s subject matter knowledge, drew out students’ prior knowledge and prodded students to wrestle with new ideas, while academic rigor was judged on the “cognitive complexity” and the “level of standards and expectations” of the course work.)

The researchers acknowledge many limitations in their approach (about which more later), and characterize the study as only a “first step toward examining the relationship between prestige and in-class practices.”

But they found that on only one of the five measures, cognitive complexity of the course work, did the elite colleges in the study outperform the nonelite institutions.

On two, standards and expectations of the course work and the level of the instructors’ subject mat-

ter knowledge, there were no meaningful differences by prestige level. On two others, though -- the extent to which the instructors “surfaced” students’ prior knowledge and supported changes in their views, the lower-prestige institutions outperformed the elite ones. (Drilling down, there were differences between the prestige levels for the public institutions in the study, but not between prestigious and nonprestigious private nonprofit ones.)

“This is particularly surprising given the substantial variation in prestige across institutions included in this study: low-prestige institutions were largely unranked and broad access, while the high-prestige institutions were national institutions, highly ranked and highly selective,” the researchers write.

Cautions Aplenty

In the session at which the prestige paper and two others were presented at the higher ed research meeting here, Karen Kurotsuchi Inkelas, an associate professor at the University of Virginia who was charged with responding to the studies, identified some potential weaknesses in the analysis.

While a total of 587 courses were examined -- “astounding work,” Inkelas said -- in each case the assessors observed only one class section. “Can you really know whether it achieves goals by attending one class?” she asked. “If I’m teaching a 15-week course, does one class really represent the quality of my teaching?”

Campbell, the lead researcher,

said it would be wholly inappropriate to judge any individual instructor based on one observation, since she or he might have had a bad day. But looking across hundreds and hundreds of courses, it's reasonable to think that average performance holds up, she said.

Inkelas also questioned the extent to which the raters themselves had subject matter expertise, such that they were in a good position to judge the expertise of the instructors. Campbell said the researchers "did our best" to match the subject matter of the raters to the classes they observed.

A member of the audience (and this reporter) asked how the researchers' definition of "quality" meshed with the national push to try to judge institutions' performance based on student outcomes.

Campbell said her colleagues' approach was an attempt to "push back on the outcomes movement a little bit," since colleges have so little control over many of the economic and other measures on which policy makers are trying to judge them.

"One thing institutions do have control over is using the practices

that we know have been related to student learning, and to do more of them," she said. "This really is malleable by institutions, so I'd like to think there could be more buy-in. 'Measure me on something I can actually do, actually change,'" she said. "Part of our responsibility as a field is to think about better, more complex ways to think about" quality.

George S. Kuh, the Indiana University researcher who is a strong advocate for more focus on student learning outcomes, was not at the ASHE meeting (though he was honored with a lifetime achievement award in absentia). But via email, he also questioned the researchers' decision to measure not actual student learning, but classroom techniques that may or may not produce more learning.

"There is little to no evidence that what instructors do is a precursor to what students do or learn," Kuh said in an email. "That is, how is student behavior affected by the study's measures of teaching quality? The guiding assumption is that observed measures of -- for example -- cognitive complexity of readings or lectures somehow spurs greater levels

of student complex thinking and behavior. In the absence of evidence of actual student performance ... we are left to assume that the measures of teaching quality used in this study really do represent educational quality (i.e., better student performance/more learning, greater proficiency in applying learning and so forth). Probably in some instances, but likely not in others."

But Kuh and others who reviewed the research also praised the researchers for their efforts to get inside what one called the "black box" of instruction and learning, and for persuading hundreds of faculty members to let outsiders peer into their classrooms and judge their work. (Not to mention that they convinced three highly selective institutions to participate, albeit anonymously, in a study in which there was arguably nowhere for them to go but down in perception.)

As a new starting point for a strand of research aimed at gauging the quality of instruction and education across colleges and universities in a rigorous way, they suggested, this paper could be important. ■

<https://www.insidehighered.com/news/2015/11/09/study-questions-whether-elite-college-courses-are-higher-quality-others>

MOOC With a Community College Twist

BY CARL STRAUMSHEIM

The steep investment is preventing two-year institutions from creating massive open online courses, but SUNY Broome Community College found a way -- and a purpose for one.

The market of massive open online courses is packed with prestigious universities and star professors. Then there's SUNY Broome Community College.

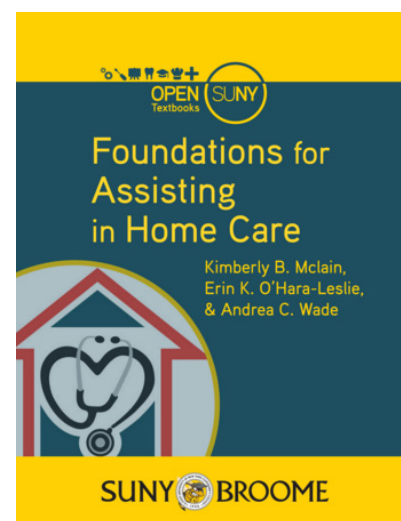
The institution is part of the State University of New York System, which in turn is a member of the MOOC platform Coursera. While Coursera and edX, another major platform, have dozens of college and university system members, SUNY Broome, which is located in Binghamton, N.Y., is the only community college among them that offers a MOOC.

SUNY Broome's sole MOOC, Foundations for Assisting in Home Care, launched in June 2015 and was offered twice in 2015, attracting about 1,200 learners in about 100 different countries -- modest numbers compared to larger MOOCs. Still, Francis L. Battisti, the community college's executive vice president and chief academic officer, said the college feels the course has succeeded as a way to spread its brand, reach new students and, most importantly, serve people in central New York.

"One of the things that community colleges are all about is service to the community," Battisti said in an interview. "Sometimes with all the competition for [full-time students], we kind of lose that focus."

Community colleges' involvement in the MOOC market has primarily been as consumers. The Bill & Melinda Gates Foundation has been a major force behind that work, spending millions of dollars on grants to projects that have examined if MOOCs can help students complete introductory courses. Examples include the American Council on Education's Alternative Credit Project and MOOC provider edX's work with community colleges in the Boston region.

Why not as producers? Fred Lokken, a member of the Instructional Technology Council's board of directors, called it a "philosophical problem." Community colleges stress the importance of face-to-face communication with students, he said, and the idea of enrolling thousands of students in an online course "cuts against the grain of



Cover of the textbook *Foundations for Assisting in Home Care*, by Kimberly B. McLain, Erin K. O'Hara-Leslie and Andrea C. Wade.

what community colleges believe in."

The ITC, which is affiliated with the American Association of Community Colleges, assists member institutions with online education. The organization recently eliminated a question in its annual survey of trends in distance education about MOOCs because of a lack of interest, Lokken said. In the most recent

edition, 70 percent of respondents said they had no interest in using MOOCs in their courses, compared to only 3 percent who said they did. But while community colleges may not be well represented on Coursera or edX, Lokken pointed out that many offer MOOCs through their learning management systems.

Others pointed to a simpler reason: creating a MOOC can take dozens of hours and cost tens if not hundreds of thousands of dollars -- a sizable investment for any institution, let alone a community college. Shifting those kinds of resources away from other offices on campus "would have been really difficult," Battisti said.

Instead, SUNY Broome applied for and received two SUNY Innovative Instruction Technology Grants worth about \$46,000 earmarked for MOOC development. The first grant made it possible to hire a videographer and shoot a series of video lectures, while the second funded the creation of a free textbook created in partnership with SUNY Geneseo, Battisti said.

"To be perfectly honest, if we didn't get the grants, we probably couldn't have done it," Battisti said. "Our budget is so limited."

As part of the second grant, SUNY

Broome is this spring working with Mohawk Valley Community College, located in Utica. Mohawk Valley will use the course materials from the MOOC in its home health care aide curriculum to test how they work in a traditional face-to-face setting, said Erin K. O'Hara-Leslie, chair of the medical assisting and health studies department at SUNY Broome.

O'Hara-Leslie described a MOOC development process that differs from how many four-year universities have approached the courses. Those MOOCs have largely attracted people with previously earned degrees looking for continuing education. Community colleges, she said, are known as places that set students on the path to educational attainment or direct employment. SUNY Broome focused on the latter when developing the MOOC, giving learners a low-risk opportunity to see if a career in home health care is right for them, she said.

The emphasis on home health care is particularly important in the Southern Tier of New York, where the state Department of Labor expects it will need about 1,600 new home health and personal care aides by 2018 to keep up with demand from an aging population.

"It's incredibly costly to train people as a home health care aide, and this way it kind of shakes people out," O'Hara-Leslie said.

SUNY Broome currently doesn't offer a home health care aide program but hopes to do so in the future, O'Hara-Leslie said, adding that she expects the MOOC to be a part of that program.

Since the community college is giving the textbook away for free, O'Hara-Leslie said she hopes the information will have even wider appeal, perhaps to people wondering how to prepare food for their elderly parents or move them safely in and out of bed, for example.

"It's more of a philanthropy," O'Hara-Leslie said. "We're not making money off of this, but it can be utilized in school, in home health care agencies for training, and then it can also be used on a different level [by] people who aren't sure how to care for a relative."

SUNY Broome has had conversations about expanding its MOOC offerings, perhaps in cooperation with New York's Regional Economic Development Councils, Battisti said. But that expansion comes with a big "if," he said: "If there was more funding." ■

<https://www.insidehighered.com/news/2016/04/14/suny-broome-community-colleges-mooc-rarity-higher-education>

Views

A selection of essays and op-eds

Learning From a Typewriter

BY JARED DAVID BEREZIN

An old-fashioned physical object can create a surprisingly meaningful pedagogical moment in a classroom, writes Jared Berezin.



In the fall of 2015, I brought my 1918 Royal manual typewriter into my Communicating Science to the Public class at MIT. I kept a box over the machine and unveiled it at the start of class as though revealing a new car. Oohs and ahs followed. “That’s so cool!” one student declared. Every one of the 18 first-year undergraduates could not take their eyes off the typewriter. Many of them were smiling. It was 9:30 in the morning, and they seemed surprisingly happy, curious and ready to learn.

(What I love most about manual typewriters is that they cannot be turned off. This 1918 Royal has been turned on and ready to write for nearly 100 years.)

I asked the students to get up from their desks to get a closer look at the typewriter. “Go ahead, you can type something if you want,” I said as they circled around the machine. One brave young man stepped forward and typed the word “hello.”

“Wow, this is harder than a computer,” he said while typing. Yep, you’ve got to put some muscle into manual typewriters and really strike down on each key, and if you type too fast the keys get stuck.

Many of the students, I assumed,

were wondering why the heck their teacher brought an antique machine into a class where we read and write about the latest scientific and technological advancements. Fortunately, a typewriter can serve as a springboard for kinesthetic learning experiences, and here are two activities that emerged that particular morning.

How Do We Communicate Enthusiasm?

I asked the students to look closely at the keyboard. The familiar QWERTY layout alleviated some of the strangeness of the machine; however, as with all typewriters built before the 1970s, a certain punctuation mark was absent from the keys. I asked the students to identify the missing punctuation. See if you can spot it:



Did you find it?

It's the exclamation point!

I challenged the students to imagine they were writing an article with this typewriter, and they really wanted to include an exclamation point at the end of a sentence. I asked them to work together as a team

and generate as many ways to make an exclamation point as possible.

"How about typing a lowercase 'l' and then hit the backspace and then type a period?" one student asked. "Go ahead and try it," I said. She pressed the keys. Dissatisfied with the outcome of this first attempt, another student made a suggestion: "How about typing a semicolon, then hitting the backspace, then adding an apostrophe?" "Give it a try," I said. This pattern of trial and error continued for a couple of minutes: a student would approach the typewriter to test her ideas using different combinations of keys as her classmates waited to see whether the plan would work. They chuckled at each other's efforts. Interestingly, none of them were satisfied with any of the aspiring ex-

clamations. They wanted the real thing, clean and recognizable, but struggled to create it using the available keys.

We took a break from the typewriter, and I asked them to take out their cell phones. "How could you communicate enthusiasm to someone using your smartphone keyboard?" Answers

poured forth: there is an exclamation point readily available, plus many emojis to choose from. "What do you think the keyboard of the future will look like?" I asked. "Entirely emojis!" one student answered.

The author F. Scott Fitzgerald once likened an exclamation point

at the end of a sentence to a person laughing at his own joke. In other words, the exclamation point implies a forced rather than generative response in an audience. I asked the students, "When it comes to science articles written for the public, rather than putting an exclamation point or emoji at the end of every sentence, how else can we communicate our interest and generate enthusiasm for the topic?" To help ground the class discussion in the reality of our work, students returned to their seats to examine their own article drafts. In small groups, they tried to identify and share instances, if any, in which they communicated excitement through words that might inspire a sense of wonder and enthusiasm in their reader.

Individual Agency in the Daunting Research and Writing Process

Something else happened during the typewriter exercise. After struggling to create a satisfactory exclamation point using the typewriter keys, the students grew quiet. No one touched the typewriter, and the novelty of the exercise seemed to be wearing thin.

"Wait," said one student. She had noticed a pen next to the typewriter. "Could I just draw an exclamation point?" Interestingly, I had done this exercise twice before in other classes, and no student had ever asked this question, even though I had intentionally placed a pen beside the typewriter each time. "I don't see why not," I replied. "Give it a try." She picked up the pen and drew an ex-

clamation point on the paper. The students laughed, and some even clapped.

When I asked the students to create an exclamation point, they implicitly imposed the false constraint that the only available resource was the typewriter itself. After all, the typewriter seems complete. The machine was built by professionals and seems to have all of the necessary parts to communicate through writing. Yet human agency is still required to operate and maintain the typewriter, and most importantly, to produce writing that impacts an audience. The remarkable student who reached for the pen recognized her own body and mind as resources for problem solving and participation.

The hand-drawn exclamation point led to a discussion of the role of human agency when confronting the challenge of producing original texts as a college student. When I was an undergraduate, I remember reading published journals, magazines and books and thinking, "How can I contribute anything meaningful to this field? Why should I even bother trying to write an essay on this topic when so much has already been written? I'm only a student."

As novices who are expected to understand and participate in the

intellectual territory of experts, students often experience impostor syndrome and may question whether their writing could (or should) be more than a patchwork of citations and paraphrases. I asked the students to try rereading a few of the articles they had read for homework through a new lens -- to identify the writer's chosen scope, particular use of metaphor, organization of ideas, connections of seemingly unrelated information and instances in which he or she related to the subject through personal experience. That led to a discussion of the rhetorical choices that represent an author's original perspective and approach to communicating about a range of topics, ranging from the behavior of ants to the formation of black holes.

Why Bring a Typewriter?

To state the obvious: I'm a big fan of typewriters. Although I teach at MIT, I'm a Luddite in my personal life. I enjoy the musicality of writing on a manual typewriter and how it's always sitting there ready to be used without needing to be plugged in or have its battery charged. The inability to delete, cut and paste text propels me to ignore my inner critic and plow ahead with unpolished thoughts in the early stages of ideation.

I have no doubt that the in-class discussions described above could have occurred without the prop of a 1918 Royal manual typewriter. However, the physical presence of the antique machine launched an out-of-the-ordinary kinesthetic learning experience for students.

Although imperfect and at times unpredictable, the praxis of experiential learning is powerful. In my Communicating Science to the Public class, students could see how excited I was to show them the typewriter, which inspired them to interact with the machine and one another in new ways, to smile and move physically more than they would otherwise in a classroom, and to invest more of themselves in the subsequent discussions.

I'd love to learn from you, readers of Inside Higher Ed, about the physical objects that have catapulted meaningful pedagogical moments in your classroom. Feel free to share in the comment space below.

We can't always bring our personal hobbies and interests into the classroom, but I think it feels good when we can. As teachers, we model for students how to engage critically with a subject, how to inspire learning, how to interact with others and even how to be excited about something. ■

Bio

Jared David Berezin is a lecturer in comparative media studies/writing at the Massachusetts Institute of Technology.

<https://www.insidehighered.com/views/2016/03/18/teaching-students-new-ways-thinking-through-typewriter-essay>

Off the Mat and Into the World

BY KAREN COSTA

What does yoga have to do with teaching in a college classroom? A lot, writes Karen Costa.

I am four months away from completing my 200-hour registered yoga teacher certification. As part of that certification, I am required to complete a 10-hour yoga teaching practicum. No big deal right? I've been teaching college success strategies to undergraduates for a decade. What could I possibly have to learn about teaching? A lot, apparently.

Beginner's Mind

I took my first yoga class when I was eight years old. I was a competitive swimmer and my very intense coach thought that learning yoga would make us swim faster. I've been practicing on and off since then and developed a near-daily practice in the past couple of years. Yoga is a part of who I am.

As higher educators, teaching and learning are part of who we are. We forget that this isn't true for everyone else, including our students. Learning may be something they do, not something they are.

As I teach my practicum courses, I ask my students if they've ever done yoga before. Some say that it's their first class. I try to remember

this as I introduce poses. I can't just tell them to enter Warrior II; I have to show them exactly how to get there. Throughout my yoga classes, I return to the idea of beginner's mind, remembering how to teach by first forgetting what I know.

Our students need and want us to be seasoned experts who live and breathe education, but they also need and want us to remember what it's like not to be.

Teach Self-Understanding

When I planned my first yoga class, I amply sprinkled child's pose into my sequence. Child's pose is a resting pose, where you begin on your hands and knees and then release your bottom onto your heels, stretching your arms forward and lowering your head to the ground. It's one of those poses that I never want to come out of, so I figured it would be a great fit for a gentle yoga class filled with beginners.

I was wrong.

Child's pose is a great pose for me. What I learned within two seconds of introducing it to my students is that for certain body types, this pose is incredibly challenging.

There went that plan. I moved my students out of the pose and offered them another option for rest.

One of the most important things I'm learning in my yoga instruction is that no two bodies are alike and that similarities on the outside can mask differences on the inside. Rounder bodies might find poses where body parts are tightly pressed against one another (e.g. child's pose) to be very challenging, while straighter bodies might find these poses to be restful. Some knees bend more deeply. Some shoulders are tighter. Some hips flex too much, others not enough. My job as a yoga teacher is to help my students journey into their own bodies and to respect their unique anatomical structure. Yes, all knees serve the same purposes: to enable us to bend down, straighten up, and to walk or run. But within these overarching purposes, there are billions of knees with their own individual knee stories.

Are brains any different? Increasingly, I've come to believe that our most important job as teachers is to help students journey into their own minds to understand how they

learn best. Remembering that this will be an intensely personal experience with infinite variation can help us do a better job serving as a guide on these journeys.

Off the Mat

Before last week's class, one of my students told me that she'd started doing some of the yoga poses she'd learned with her children. Another woman told me that she'd taught her mother cat/cow pose. One student shared that she'd been practicing some of the chair poses we've learned at her desk while at work.

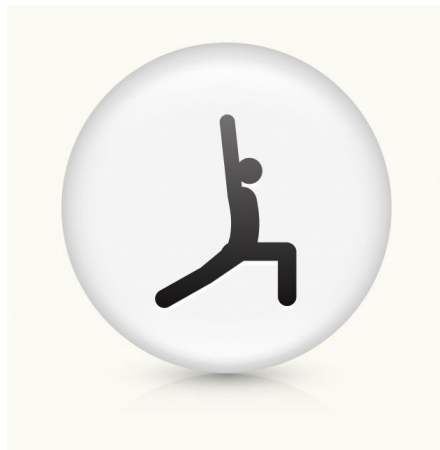
I didn't know how good it would feel to hear how my students are taking our yoga classes off the mat and into the world.

Isn't this what learning is all about? What good is it if our students can correctly answer our test questions if they can't apply what they've learned outside the classroom? Whether this application is with their hands, their minds or both, I want my students to carry their learning experiences with them when they leave, rather than leaving their learning at the door on the way out.

Higher education can and must do a better job of making learning move. Too often it remains static, stuck within the walls or shells of our land-based or online class-

rooms. Are your students thinking about, writing about or using what they've learned in your course in other courses, at work or in their personal lives? If not, what's the point?

Letting Go



Where do I end and where do my students begin? Am I too soft? Do I serve them better by saying yes or no? I've been asking myself these questions for 10 years. I am, and always have been, a professor who believes in going the extra mile to help my students succeed. I am encouraging, flexible and supportive. But do I sometimes go too far? When it feels like I'm working harder for their success than they are, that's usually a sign that I need to take a step back.

When teaching a physical practice, the recognition that we cannot do the work for someone else be-

comes even more apparent. I can show you this challenging pose. I can offer you modifications that might be better suited to your fitness level or body type. I can suggest that you move your foot to the left. Some instructors will even use hands-on assists. But no matter what we do as yoga instructors, we cannot enter the pose for our students. That experience is theirs and theirs alone.

What I've also come to realize is that sometimes not feeling settled in a pose can be as important as the alternative. Perhaps a student needs to learn to not push herself so hard while another student could challenge himself a bit more. It's their body, their mat and their yoga. There comes a point when, as teachers, we have to let go.

Yoga teaches us to pour our hearts, minds and souls into our actions, and then to release our attachment to the outcomes. While we have tremendous influence over our students, we do not have control over them. Understanding and accepting this important distinction will serve both our students and us.

There is great challenge, and great honor, in teaching. Ironically, it is a challenge most fully met when we are always ready to learn more about ourselves. ■

Bio

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<https://www.insidehighered.com/views/2016/03/25/teaching-yoga-provided-lessons-classroom-essay>

New and Improved Writing in Your Underwear

BY BRIAN GOEDDE

Brian Goedde explains how he came to embrace online learning for a form of teaching known for its in-person experience.

I remember well my first class in graduate school, now 10 years ago, because I was only somewhat prepared for it. My pencil pouch held a full canister of lead, but, when our creative writing professor asked us to go around the octagonal seminar table to sign up for our workshop dates, I had to ask, “What’s a workshop?”

“Well,” the guy next to me said, “you sit in the middle here, blindfolded, and we all take turns --” He held up his fist as if to throw a punch.

There is a kernel of truth in his humor: the cloth covers not your eyes but your mouth. On the days you “are workshopped,” as it is said, the class discusses the merits and faults of the writing you submitted the week before, and you’re not allowed to talk during this discussion. It’s called the gag rule. The main reason for this rule is that ungagged authors are too compelled to defend their writing -- but a workshop is not a defense. There is no passing or not passing the workshop. You simply gather feedback, take what you’d like and disregard the rest.

The stakes couldn’t be lower, in other words, so why is it commonly

such a bruising experience?

“It’s just ... not ... good,” a student said in my second class, the first workshop of the semester. Ouch. The most infamous comment I heard in my years in graduate school was, “When I read something like this I think, ‘Oh, he must be writing in his underwear.’ ” I’m not sure what he meant, exactly, but we all caught the drift.

There’s another kernel of truth in my classmate’s comment: there’s something about a workshop that allows fists to fly, and I’m not above reproach. I regret once saying a page of dialogue was “like a soap opera script.” Another time, when I was workshopped, a classmate said, “I don’t see the point of reading this.” Afterward he came over to me and said, “That came off way more antagonistic than I meant it to.” I said bitterly, “You’re not a good reader.”

Is this how one becomes a master of fine arts?

Many say we can do better, for reasons personal (flying fists) and pedagogical (lack of evaluation of what students actually learn -- and tacit permission of flying fists). Sum

it up in the title of a book by writers and teachers Carol Bly and Cynthea Loveland that came out in 2006, *Against Workshopping Manuscripts: A Plea for Justice to Student Writers*.

After graduating, I began to teach creative writing classes, and, resolved to do justice, I tried alternatives to the workshop. I taught forms and principles and assigned exercises. I modeled how to write like a good reader -- which is to say, how I imitate writing I admire (and try to conceal this imitation). We studied “how to write” books -- *Bird by Bird* by Anne Lamott, *Triggering Town* by Richard Hugo, and *On Writing Well* by Howard Zinsser. I wanted to scrutinize the methods and techniques of producing writing, rather than student writing itself. The closest we got to workshops were small groups in which students shared their work -- with no gag rule.

It was OK. Not great. The students seemed to like the class, but as a teacher, I felt like I was trying to cook on a feeble campfire, the water never getting to a full boil.

There is something valuable, I’ve since realized, in turning up the heat

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on students. In other classes, this heat comes in a term paper or a final exam, a culminating moment that tests student mettle, that makes students do the best they possibly can. In a creative writing class, this heat comes in a workshop.

Meanwhile, something else occupied my teaching life: I began teaching some of my classes online. My classes are asynchronous, meaning that while there are deadlines, there is no live interaction. The weekly conversation between students and myself happens on the discussion board, on which students respond to prompts I give them and comment on each other's ideas. In my first-year composition class, they also review and edit fellow students' drafts.

I love the discussion board as a teaching tool for several reasons, including how I can manage the occasional flying fist. The weekly,

graded discussion board assignment asks students to give thoughtful feedback -- in agreement or disagreement -- and a nasty comment almost always stands in place of thoughtfulness.

So, if a student writes something offhanded, snarky or just plain mean, I can get 'em where it counts: I take off points.

For doing so, in my anonymous student evaluations I once took a jab myself: "Taking off points for something the teacher took personally is crap."

I'm all but certain I know who wrote this, and it delights me to mention that, after my reprimand earlier in the semester, his discussion board participation was excellent, not to mention civil, and he got an A in the class.

As for his parting shot, well, I suppose I did take it personally: no one is going to be mean in my class.

With this capability, I've now returned to teaching creative writing workshops -- this time online. After a few weeks of preliminary exercises, much like I did in the classes I taught after graduate school, students spend the rest of the semester workshoping each other's poetry, fiction and personal essays on the discussion boards. Students get full scrutiny of their peers -- the heat is up -- and when the time comes to administer student justice, I'm ready.

I'm surprised to say I've even instituted the gag rule, something I loathed as a student in workshops myself.

It's valuable for authors to see how little they control their readers, so long as I can control the readers from doing their worst. I have also been surprised to realize that, as it is often said of online education, students are welcome to come to class -- and write -- in their underwear. ■

Bio

Brian Goedde has an M.F.A. from the University of Iowa Nonfiction Writing Program and teaches writing at the Community College of Philadelphia.

<https://www.insidehighered.com/views/2015/09/03/essay-about-unexpected-success-teaching-online>

Do We Know How to Judge Teaching?

BY STEPHEN L. CHEW

Stephen L. Chew writes that current approaches -- for awards or tenure and promotion -- are based too much on passion or student enjoyment and not enough on actual learning.

Early in my career, there was an incident involving a senior professor in another department. He was a mild-mannered man but deeply embittered about his career. He began savagely berating students in feedback on assignments and writing vitriolic reviews of junior faculty members. To avoid an inevitable lawsuit, the college negotiated his early retirement. At commencement, the college always announced the recipient of its top teaching award. I happened to be standing near this professor before commencement began. I heard him tell one of his colleagues, "This is my last commencement, it would be really nice if I won the teaching award." I was stunned. How could someone being forced into retirement for abusive practices believe he might be chosen as the outstanding teacher?

The experience raised a basic question in my mind: What do people think professors do to deserve teaching awards? The answer to this question is important. It defines the kind of teachers we strive to become. For institutions, the answer

determines the kind of teaching that is rewarded with tenure and promotion (at least at places that don't focus exclusively on research).

When someone wins an award for outstanding research or artistic expression, we understand that the person has made a critical discovery or created something unique and significant; but when a person wins a teaching award, what do we think he or she did to deserve it? Do we believe the recipient did something extraordinary and important, or do we attribute it to less admirable reasons, such as being popular among students? In my experience, the most positive reasons people give to explain why a colleague won a teaching award is that the person is especially passionate or dedicated to teaching. We applaud colleagues who win teaching awards who have sacrificed in some way for teaching, or who have worked to make their classes particularly fun and engaging, or who inspire students to excel.

What is notable about these reasons is that they have little to do with actual teaching skill. The impli-

cation is that award-winning teachers are not any more effective at engendering student learning than the rest of us. Rather, they devote more time and attention to their teaching and students than we do, or they persevere through greater challenges. I propose that these traits, while certainly important, are not the critical reason why some faculty deserve to win teaching awards.

During my career I've seen faculty members who are deeply passionate about teaching and care greatly about their students who nonetheless are not particularly successful teachers. Passion, dedication and sacrifice are no guarantee of teaching effectiveness. They do not automatically translate into student achievement or satisfaction. Neither does disciplinary knowledge; faculty with distinguished research records are not necessarily better teachers than graduate students.

What, then, is the critical element for teaching success? I say the best teachers are learning driven; their teaching is wholly focused on developing a deep understanding of the subject matter in the minds of

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their students. This entails much more than presenting information. Learning-driven teachers don't simply wish or hope their students learn -- they take actions to see that the desired kind of learning takes place. Consciously or not, learning-driven teachers are concerned with an array of factors that influence student learning. For example, they manage the class's collective attention, monitor metacognitive awareness, respect the constraints of working memory and promote transfer-appropriate processing, even if these teachers are unaware of the formal names of such concepts.

These teachers create a classroom atmosphere that supports learning. They become trustworthy sources of knowledge for students. These teachers show students the shortcomings of their current thinking and understanding, and convince them of the value of developing a deeper, more accurate understanding. They create learning experiences that promote both long-term learning and appropriate recall and application beyond the classroom. These teachers are able to assess the level of understanding of students and recognize how to move that understanding toward a desired learning goal. The ability to accomplish all these tasks defines teaching skill.

The best teachers develop an accurate understanding of how people learn. They recognize the power they have to either help or hurt student understanding. They see learning as a shared responsibility between

themselves and the students. Quality of teaching is judged by what students learn and how they can use the information. If students don't learn, teaching is not successful, regardless of how brilliant and engaging the teacher might be.



A learning-driven approach can be contrasted with an information-driven approach to teaching. Faculty who adopt this approach see the goal of teaching as presenting information the students are responsible for learning. The teacher's responsibility is to make sure the information is accurate, up-to-date and presented in as clear, organized and engaging way as possible. Quality of teaching is judged by informational content and quality of delivery. Little knowledge beyond up-to-date disciplinary expertise is needed. Cutting-edge faculty use the latest

educational technology and the most current teaching methods, but their use and implementation is not guided by student learning. In this approach, the teacher either cannot or should not influence learning beyond the method of delivering information.

The two approaches lead to different views of teaching awards. From the information-driven perspective, teaching is straightforward. Anyone with sufficient disciplinary knowledge has the ability to teach effectively. The challenging part of teaching is developing good presentations and grading assignments. From this perspective, most anyone is deserving of a teaching award if they make a sincere effort to be clear, current, engaging and organized, because that is about all a teacher can do. Some faculty have a special knack or talent for teaching, but it isn't something that can be developed through training. For learning-driven faculty, teaching is a complex challenge requiring innovation, creativity and constant adaptation based on evidence of student learning. The challenge of teaching is creating conditions in which learning will occur. Teaching awards are for teachers who have mastered that challenge more successfully than others.

One belief that both perspectives share is that student evaluations alone are not a sufficient measure of teaching effectiveness, but the learning-driven approach points to the kinds of additional information that should be collected. A learn-

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ing-driven perspective demands evidence that one pedagogical approach or activity is superior to another in a way that contributes to learning. The same evidence that can help improve student learning can be used to evaluate teaching effectiveness.

The consequences of these two different perspectives on teaching are far reaching. For example, consider grade inflation. For information-driven teachers, if a large percentage of students in a class earn high grades, it is a sign the class is too easy and cause for concern. Learning-driven teachers distinguish between making it eas-

ier for students to get good grades and making it easier for students to learn. Learning-driven teachers see the former as grade inflation, but the latter as skilled teaching. In addition, the information-driven perspective means that universities need not provide much training to graduate students or faculty on how to teach, while the learning-driven perspective means that universities should provide professional development opportunities to help faculty become award-winning teachers.

Finally, the information-driven approach allows faculty members to believe that they are doing all they can to promote learning

when their teaching may actually be suboptimal and even detrimental. As a result, they may end up with a poor classroom experience for both themselves and their students. They may mistakenly blame the indifference of the current generation, the inadequacies of high schools, or mollycoddling by the students' parents. Faculty members may become frustrated and deeply embittered, like my colleague in the opening story. No, he did not win the teaching award, but the tragedy is that his students didn't learn and he didn't have the satisfaction of helping them learn, which should be award enough for any teacher. ■

Bio

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<https://www.insidehighered.com/views/2015/07/27/essay-whether-academe-knows-how-judge-teaching>

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