

The Importance of Learning about Learning
National Scholarship of Teaching and Learning Conference for Minority-Serving
Institutions: Teaching and Learning for Empowerment

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Good evening. I'm honored to be here on this special day of remembrance, a day on which we recall and celebrate the life of a man who influenced all aspects of our lives, including our conception of education. Martin Luther King, Jr. once said that learning includes the heart and the mind, and as we look at learning about learning let's keep in mind his insightful assertion.

During this conference we will consider a topic that has compelled my attention for many years, first as a scholar doing a type of scholarly work for which, at that time, I had no name and then as an association staff person working with campuses across the country to foster the scholarship of teaching and learning. My entrée into this work came when I was a faculty member at Indiana University Purdue University Indianapolis. As I taught writing to undergraduate students, particularly in a course called Writing in the Arts and Sciences, I watched students attempt to enter new disciplinary domains that warranted different ways of building arguments, different kinds of evidence, and different genres of writing. I wondered why some students could cross boundaries more easily than others. Why could some students move smoothly from writing a biology lab report to doing literary analysis, while other students stumbled as they moved from discourse to discourse? I'm sure that you, too, have had questions come up in your own classrooms about your students' learning.

Teaching, Scholarly Teaching, and the Scholarship of Teaching and Learning

My guess is that, in the exercise we just did, you answered the last question about how to address a learning quandary in one of three ways: you would just keep teaching, hoping that you would discover an answer as you proceeded; or you would explore what other faculty have done in a similar situation, ask students about the matter, read about the issue and/or attend some professional development activities addressing it; or, last, because you were intrigued enough, you would design a way to study the problem, to explore it in a systematic way so that you get results to answer the question for yourself but for others as well.

These three methods might be labeled teaching, scholarly teaching, and the scholarship of teaching and learning. Some teachers simply teach: they work with students, presenting material, maybe trying different methods of presenting that material, discerning through the work from students that they grade how well students may be learning.

A second way of responding is scholarly. The scholarly teacher moves beyond her own realm of knowledge to benefit from the knowledge of others. For example, she may regularly ask her students to report what learning strategies are working for them and which are not, using methods like those labeled classroom assessment techniques. She may participate in a teaching circle where she meets regularly with colleagues to discuss pedagogical choices. She may read about learning theory and how others in her discipline are helping novice or experienced learners become acculturated into the discipline. Her main objective in these activities is to improve student learning in her own classroom.

A third way of responding to a question about learning is to do the scholarship of teaching and learning. The scholar of teaching and learning finds the learning issue or pedagogical problem that he has encountered so compelling that he decides to study it in a rigorous way, selecting an appropriate method for the particular problem, as scholars do in any scholarly work, doing the inquiry, representing the results, and opening those results for peer review and use. This scholar aims to improve the learning of his own students, but he also wants to add to the knowledge base about learning in his discipline.

My point, of course, is that we engage with teaching and learning in different ways. Some faculty members teach based on their own intuitions and experiences. Some faculty members are scholarly teachers, adding the knowledge of others to their own, but conduct their own scholarship in other forms such as discovery, integration, or application. Some faculty members, however, decide that the intellectual work of the scholarship of teaching and learning is where they will invest all or part of their career. They find the problems that spur their best thinking emerge from researching learning in their own discipline. They want to contribute to their discipline by adding knowledge about learning in the discipline, sometimes about advanced learners and sometimes about novice learners.

Not all faculty members on a campus will choose to become scholars of teaching and learning. All faculty members do need to become scholarly teachers who are abreast of and apply the most recent knowledge about how people learn in their disciplines and about how students on this campus learn in their classes, but many of these faculty members will continue to do the scholarly work of discovery, integration, or application, types of scholarly work that Ernest Boyer helped to define in his seminal book. But, even if a faculty member does not do the scholarship of teaching and learning herself, she must be familiar enough with it to be able to support colleagues who do it throughout those colleagues' careers. All faculty members must recognize the scholarship of teaching and learning as designed inquiry that asks an important question in the discipline, addresses that question in a rigorous way, and reports findings for critique and use by others.

I'd like to introduce you to some faculty members who have chosen to do the scholarship of teaching and learning. I've selected them from among the over 150 Carnegie scholars whom I've gotten to know through the Carnegie Academy for the Scholarship of Teaching and Learning.

Context One: Student Preparedness and Engagement

Learning takes place in a context with a certain set of students. For example, in the survey that some of you participated in before this conference, many of you stated that the biggest problem related to teaching and learning in your context was that students are underprepared for college-level work. Other respondents noted that students are not motivated to learn. Thomas Friedmann, the author of *The World is Flat*, agrees with you: in analyzing reasons for American's decline in world status regarding science, engineering, and technology, he identifies three gaps that are sapping America's prowess in these areas: the numbers gap, the ambition gap, and the education gap. Fewer and fewer students in America are engaging with the subjects that enable them to pursue the kinds of positions needed in an information age. They are not prepared to enter a world that demands knowledge and skills for effective work and citizenship. Research shows that engagement leads to learning, so some scholarly questions emerge around how to engage students at every academic level. This point is one reason that so many colleges and universities are conducting the National Survey of Student Engagement and using the results for studies on their own campuses.

Individual scholars of teaching and learning are asking questions about engaging students entering the academy. For example, Bill Cerbin, a psychologist, has posed this research question: "How do students' prior knowledge and beliefs about the subject affect their understanding of new ideas?" Dennis Jacobs, a chemist, wondered "What changes can I make in my introductory chemistry course so more students will pass?" Marolina Salvatori, in English, offered a hypothesis: "Moments of difficulty experienced by every student at some point in learning often contain the seeds of understanding." Recognizing Martin Luther King Jr.'s contention about engaging the mind and the heart, Mona Phillips, a sociologist here in Atlanta at Spelman College, noted among her students a difficulty with theory, something with which they had no connection. Because sociology sees theorizing as something all of us do every day as a part of making meaning from our experience, Mona decided to learn about making theory more transparent for students. In addition, she wanted to understand an emotional dimension of learning, the joy of being part of "the wonderful process of understanding the world." She asked, "What in the

classroom generates that joy?" In other words, Mona cared about taking students at any level of preparedness into the joy of realizing meaning in life.

Cultural Values and Practices

In addition to engagement to bring students into academic work, especially if they have been underprepared, and to the joy of that learning, a second kind of context is cultural. As a codirector of the National Coalition for Electronic Portfolio Research, a group of colleges and universities investigating the ways in which electronic portfolios encourage learning, I work with two institutional teams who take this context seriously in their scholarship about teaching and learning. Kapiolani Community College in Hawaii is developing a portfolio system that enables students to demonstrate Hawaiian values in their academic work, values that include cooperation, inspiring others through example, and storytelling as a primary mode of expression of learning. Laguardia Community College in New York City enrolls students from the largest number of ethnic backgrounds of any institution in the United States. Recognizing that transition to the college context is challenging for students from other cultural backgrounds, often the first in their families to attend college, Laguardia is implementing and studying electronic portfolios begun by incoming students. Students study and represent in their portfolios, their neighborhoods, including descriptions of food, family practices, religion, holidays, and language. They then look at the categories that they chose to use, like the ones I just mentioned, and build descriptions of their new college culture. What new foods, people, language practices, and learning expectations are they experiencing in college? The point is not that they need to give up their home culture but that they have the opportunity to add to their lives facility in a new culture. Preliminary research shows greater retention and satisfaction among students approaching college in this way.

Disciplinary Epistemologies

One part of that college culture is a third context that influences learning, that is different disciplines. I mentioned that one of my first scholarly questions about teaching and

learning concerned how some students could move across writing demands in different disciplines easily and others not. Sherry Linkon, an American Studies professor, has recently asked and studied a related question: “What strategies are most useful for student integrating ideas from several disciplines?”

But, many scholars of teaching and learning focus in on their own discipline, hoping to learn something to benefit their own students but also their field. For example, Curt Bennett and Jacqueline Dewar are scholars of teaching and learning in mathematics. Bennett, a theoretical mathematician, developed a problem-based learning course around semester-long, open-ended mathematical research projects intended to challenge students’ assumptions about what it means to do math. To track the impact of this new approach, he administered surveys of student attitudes toward mathematics before and after taking the class, kept a journal, copied and analyzed graded homework assignments and exams, taped and analyzed office-hour conversations with student project groups, and conducted interviews with individual students after final grades. He found that in the problem based course students had a more mathematical view of the work of the field and what it takes to make a good mathematical problem. Equally important, Bennett asserts, it brought to light next questions about student learning, especially important in his field because mathematicians judge the value of a research question by what it leads to. Note that the scholarship on teaching and learning yielded a result that fit the discipline, that is leading to another important question.

This example illustrates how important disciplinary basis is for this kind of scholarly work. Only expert mathematicians who are teaching and researching could ask the appropriate questions, choose the appropriate methods of inquiry, and make appropriate diagnosis and application of findings. In an important book called *Disciplinary Styles in the Scholarship of Teaching and Learning*, Mary Huber and Sherry Morreale demonstrate that scholarly work on teaching and learning is embedded in the epistemology of disciplines. Lee Shulman has written about the integrity of the discipline as an abiding theme in the work of many scholars of teaching and learning. He says, “If one is truly devoted to one’s discipline, one is committed to transmitting and developing faithful

conceptions and understandings of the discipline in students. Thus the integrity of the discipline leads to a sense of what is best for students.” If this is the case, however, we are still a long way from enacting the full concept of our disciplines. Although we socialize graduate students into the discipline, we often introduce undergraduates to our disciplines in ways that make it difficult for them to understand or enter them. In fact, the term “introductory courses” may signal part of our problem. We introduce rather than involve the students. Sometimes we introduce because we don’t know how to involve new learners; we know less about the ways that novice learners come into disciplinary habits of mind and practices than we need to know. Hence, of course, the scholarship of teaching and learning as essential work in all disciplines. Only those who understand and enact the discipline as their work can discover and develop those pedagogical understandings and strategies that will involve or engage new learners. If we leave our disciplines defined only as the subject matter, we are limiting their scope and power.

Yet, I would hasten to add, Professors Bennett and Dewar reached beyond their discipline as they needed new ways to answer emerging questions that they had. In the next stage of their research, Bennett and Dewar decided to study how students grow in their view of mathematical reasoning and argumentation as the students move from beginning to advanced classes. They modified what is called a think-aloud methodology into what they call a proof-aloud protocol for probing students’ thinking. They adapted a framework for assessing student learning overlaid with a model of student progression from novice to expert and reframed the whole for mathematical learning. The result is a mathematical knowledge expertise grid. Across the top are the terms acclimation, competence, and proficiency. The categories of affective and cognitive on the side have subtopics: under affective are interest and confidence and under cognitive are factual, procedural, schematic, strategic, epistemic, and social (41-42).

Meaning of a Baccalaureate Degree

This Bennett and Dewar example leads us to a fourth context for the scholarship of teaching and learning. The scholarship of teaching and learning can help us define what a

baccalaureate degree means in higher education today. As you know, the federal Reauthorization Act for Higher Education is currently being considered in Congress. Much to the relief of many, we have dodged a bullet this time, a provision that would have required accreditation bodies to require institutions or accreditors to define what a baccalaureate means, the student learning outcomes associated with each part of that degree, and the means of judging competency for those outcomes. In addition, accreditors would have had to make public detailed results of the accrediting process for each institution.

I don't believe in scare tactics as a primary way to get people moving. Yet, I am apprehensive about the possibilities of what kinds of requirements governments, state and federal, might decide are necessary to get colleges and universities to be clear about the student learning outcomes that they have set and toward which they are helping students progress. As a commissioner for the Western Association of Schools and Colleges, one of seven regional accreditors, I read many self-studies and team reports about institutions that are not yet taking seriously enough the need for being explicit about student learning.

One reason I think that faculty members in many places have resisted the kind of collaborative planning, implementing, and assessing necessary to be explicit about learning outcomes is that when even formative assessment yields evidence that students are not making the progress we want, we don't know what to do. Many faculty members are not prepared by graduate education or by the university in which they are working to know about how students learn in their particular disciplines. Sometimes that lack of knowledge comes from reluctance to accept that incorporating new learners into the discipline is important work so that faculty must be informed of pedagogical knowledge in the discipline, that is must be scholarly teachers. But other times the lack of knowledge comes from not having considered the intriguing intellectual questions about learning biology, anthropology, forensic science, women's studies, English, sociology, or any other discipline or profession and from being unaware about how to do designed inquiry into those questions.

Ideally, the questions we ask about learning within our disciplines come from our passion for our disciplines, that is we want to provide the best teaching possible so that students can, for example, think like historians, whether those students become full-time historians or, as will be the case for the majority, need to know how to use history to make better decisions in civic life. But, another reason to do scholarly work on teaching and learning in our disciplines is that we must increasingly be able to answer for prospective students and their families, for legislators, for accreditors, and for other stakeholders of higher education questions about what we are all about. More than ever in the past we must generate, apply, and represent in forms that speak to those within and outside the academy knowledge about learning.

For Christmas I was given the book *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything*. Perhaps some of you have read it, too. The book provides, in its own words, quirky accounts of research into questions you wouldn't expect economists to ask but which are asked and answered through the use of conventional economic analysis methods. For example, if you want to know "What Do English Teachers and Sumo Wrestlers Have in Common?," you can read the book. But I bring it up because a basic premise of the book is "a belief that the modern world, despite a surfeit of obfuscation, complication, and downright deceit, is not impenetrable, is not unknowable, and—if the right questions are asked—is even more intriguing than we think." We can know about learning at the classroom level and at the institutional level if we ask the right questions and pursue their answers in scholarly ways.

Campus Conditions

To be able to know more about teaching and learning, for the benefit of our students, of our disciplines, and of higher education as a societal institution, we need the work of individual scholars and the support of campuses. A fifth context for learning is indeed the individual campus. According to its own history and culture, each campus must constitute itself to support scholarly work on teaching and learning. In the Campus Program, a part of the Carnegie Academy for the Scholarship of Teaching and Learning, many campuses

have done what we studied their own educational circumstances by doing what we labeled a Mapping Progress report. The features of this map were derived from progress reports that campuses made as they developed the campus conditions that they found necessary to support the scholarship of teaching and learning. Broad categories on the map included infrastructure, collaboration, resources, and policies.

Let me give you an example under each of these to get your thinking started about how you might examine your campus context. Under the first category of infrastructure, Buffalo State University decided that it did not want to create something new but wanted to coordinate a number of initiatives and structures on its campus that could support scholars of teaching and learning. A position in the provost's office was devoted to that coordination, with initiatives like Learning Communities and Undergraduate Research for the first time talking with one another, including about what intriguing questions their efforts raised about student learning and who would investigate those questions. On the other hand, Berea College decided to begin a Center for Teaching, Learning, and Research that from its inception would support both new pedagogical practice and designed inquiry about the effects of those practices on student learning. In the survey that I mentioned earlier that some of you did before this conference, the vast majority of respondents as a great success at your school for the support of teaching and learning the establishment of some version of a Center for Teaching and Learning.

Collaboration, the second important condition for healthy scholarship of teaching and learning on a campus, can be internal or external. As an example of internal collaboration, Western Washington University created its first faculty and student seminars to simultaneously and sometimes together investigate teaching and learning in various disciplines on their campus. Faculty members and students studied and did research together to answer pressing questions. Moving beyond their own campuses, Rockhurst University, Creighton University, and Columbia College joined with three other institutions to provide mutual support for faculty members trying to frame questions to investigate but especially for faculty in the stage of writing up their results who need

peer review. These institutions now sponsor a summer institute that faculty at this conference could attend for professional collaboration in producing good work.

Resources, the third important category come in many forms. At Elon University the president funds research teams of one faculty member and two students to do scholarly projects on teaching and learning. At Indiana University Bloomington funds secured from external sources are matched internally by the Office of the Vice President for Research. Sabbaticals at Illinois State are granted for the scholarship of teaching and learning. At the University of Notre Dame time of the institutional research office is available to faculty members doing this type of scholarship.

The last campus condition that is crucial is having policies that support for the scholarship of teaching and learning. Hiring policies are one area. At North Carolina State University in several departments questions about commitment to scholarly teaching and interest in the scholarship of teaching and learning are routinely included in interviews for new faculty members. Annual report forms in some departments at IUPUI include space for reporting results of scholarly teaching and for describing scholarship of teaching and learning for those faculty members who do that kind of scholarship. Promotion and tenure policies have been altered at institutions from Thomas College to Iowa State University, with the latter having findings about changes in who gets promoted and tenured based on new language about what constitutes research. Under the question about incentives on the survey for this conference, several respondents mentioned support of various kinds. One person said it particularly well: "We have a good morale and material incentive system." If you are interested in infrastructure, collaboration, resource allocation, and policies on other campuses, you can consult *Campus Progress: Supporting the Scholarship of Teaching and Learning*, a book that we did that contains reports about over forty institutions.

The Future

The sixth and last context for today's look at the scholarly work on teaching and learning is the context of the future. I've just finished reading a book that I highly recommend called *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What It Means to Be Human* by Joel Garreau. This book argues that four interrelated technologies are “cranking up to modify human nature.” These technologies- genetic, robotic, information, and nano processes-are ones that will bring or are bringing about human transformation. Garreau states that “the challenge of this book is that we may be heading into a period when “we will start seeing creatures walk the Earth who are enhanced beyond recognition as traditional members of our species.” Transmitting speech and pictures directly into the brain, building robots with living muscle, and producing machines that truly know what they're doing are all current projects in well-funded labs in multiple settings. In the near future, many intelligences “will roam the earth that are not traditional humans.”

Add to that thought the notion of Moore's Law in which the power of information technology doubles every 18 months, the price of any given piece of silicon can be expected to drop by half every 18 months, the amount of computer memory you can get for a dollar is doubling every 15 months, and the size of the Internet is doubling every 12 months, and you get The Curve (with a capital C), a number of curves of accelerated change that are proliferating exponentially. Garreau concludes that the last 50 years of escalation is not a guide to the next 50 years but to the next decade and a half.

Maybe some of you remember, as I do, the first machines developed by Ray Kurzweil, machines that read books aloud to people with no sight. Well, Kurzweil has come a long way in this thinking since that early machine. Kurzweil now predicts that by 2020 computers will be embedded everywhere, in our walls, tables, desks, clothing, and bodies. People will communicate with one group of these computers, called intelligent assistants, as they might with a human assistant through speech, gestures and facial expressions that the computers will recognize and respond to. Kurzweil says that by 2020 “Of all the total computing capacity of the human race—all human brains, plus the technology the species has created—10 percent will be nonhuman.” But his more

startling prediction is that by 2029: “Of the total computing power of the human race—all human brains plus all the technology that the species has created—more than 99 *percent* will be nonhuman,” a projection into the near future of the Curve with a capital C.

How does this look to the future speak to us now? According to Kurzweil’s vision, we will be able to buy all the long-term memory and reasoning we want, but it will not yet be possible to download knowledge directly. Here’s the point about the future: “Learning still requires time-consuming human experience and study. This is how humans spend most of their day.” Automated agents also spend time creating knowledge. In fact, human and nonhuman intelligences are focused on the creation of knowledge. “The largest profession is education.”

In this scenario we human beings are still very central in the world. But, we are central because we can learn and can generate knowledge. In other words, knowing how human beings learn becomes even more central than it is today. Knowing how human beings learn in all realms of their existence is what keeps the human race going. Our doing the scholarship of teaching and learning, then, is foundational to our very existence.

Although I’m necessarily skimming the surface of this scenario of the future and ignoring many aspects of it and other possible scenarios, I want us to consider this scenario of the future because I am tired of hearing that the scholarship of teaching and learning is not really central to the purpose of our colleges and universities or to the definition of our disciplines or to higher education. In fact, rather than a newcomer, a peripheral activity, or the work of only a few people, probably in a school of education, scholarship of teaching and learning is *as* or *more* central to what we as humans need to know about as anything else we can name. In *any* scenario based on what is already being created, we as teachers and as learners will be most human and most useful to humanity and our machine associates and friends if we are smart about learning.

Opportunities for Collaboration

Across the United States and around the world, faculty members, students, and staff members are making significant progress in making us smarter about teaching and learning through their scholarly work. In the US for the past eight years, we have had the Carnegie Academy for the Scholarship of Teaching and Learning that has engaged individuals, campuses, and disciplinary associations in developing methods of inquiry, genres of representation, communities of practice, and educational conditions conducive to the work. Carnegie is right now inviting campuses to be part of an extension of that project that presents another opportunity to work with other colleges and universities around a certain aspect of the scholarship of teaching and learning chosen by the participating institutions. Currently over 100 institutions are collaborating in twelve clusters; in the new design a similar number of leadership sites will develop their own agendas.

Another opportunity for participation beyond the campus is the International Society for the Scholarship of Teaching and Learning. After a 2004 conference in Indiana and a 2005 conference in British Columbia, the Society will meet this year in Washington, DC, and in 2007 in Sydney, Australia. As president of the organization, I invite you to consider membership as we connect up with more and more countries around the world. The membership is on an individual or institutional basis, so that you and/or your campus can join. You can find out more by going to the ISSOTL website at www.ISSOTL.org.

The scholarship of teaching and learning is contributing to engage students in their learning, to frame knowledge, to sustain support for higher education, and to enable humans to thrive in the future. The theme of this conference, "Teaching and Learning for Empowerment," identifies succinctly a major outcome of the scholarship of teaching and learning, increased meaning and influence of all learners in multiple contexts.

Thank you for thinking with me about these matters, and I look forward to hearing from many of you throughout the day tomorrow.

