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Student Plagiarism: Are Teachers Part of the Solution or Part of the Problem?

Chris M. Anson, ***North Carolina State University***

With the rise of the Internet, students now have almost limitless access to information, texts, and other people's words and ideas. For most teachers, this technology is both a blessing and a curse. In the pursuit of learning, students have lightning-fast access to vast storehouses of information, increasingly rich in its presentation and complex in its links and interconnections. Yet what students can find with computers also comes to them virtually unscreened and unevaluated, making the Internet like a huge shopping bazaar where good finds are hidden among large quantities of worthless junk. Worse, increasingly sophisticated search engines can find text -- or entire papers -- that respond to many common writing assignments: Kimbel Library at Coastal Carolina University has amassed over 250 Web sites where students can find thousands of papers representing hundreds of different courses in dozens of different fields (Internet 2003). So enabled, students can earn decent grades not for their skills at reading, researching, interpreting, writing, and revising, but for a few unscrupulous moments at a computer screen

With the allure of such readily accessed papers, suspicion of student plagiarism has reached an all-time high. At its most basic, our response is often defensive; we wonder how we can protect the walls of academe from being scaled by the plunderers and thieves of text,

and we enjoin our administrations to impose ever-more severe punishments on offenders (zero-tolerance laws, two-strike automatic expulsions, scarlet-letter grades on transcripts, and the like) This reaction partly explains the popularity of commercial plagiarism detection services, such as TurnitIn.com and EVE2.com (Essay Verification Engine). Across academia, teachers pursue their suspicions of plagiarism with the energy and persistence of Les Miserables' Javert on the trail of Jean Valjean, sometimes spending hours or even days of their valuable time in the hunt.

The fervor over the detection of plagiarism and its accompanying legalistic and punitive apparatus seems antithetical to many educational principles. It subtly begins to wear away at our collective personae as coaches, guides, and mentors, yielding a hardened attitude, detective-like and oppositional. Rows of naïve students begin to look like miscreants ready to dash off and do bad things, deceptive things, things that show blatant disregard for the concepts of copyright, ownership, and individual authorship. Lacking the moral fiber of previous generations, students are to blame. We, the bastions of higher learning, demand honesty and integrity, and our students flaunt them. Our duty then requires us to search and seize, discipline and punish.

Teacher's Responsibilities

In a recent discussion with a group of college juniors and seniors, I learned that many students have strong opinions about the nature of writing assignments. They explained that they can easily detect (and strongly dislike) stock or "cloned" assignments that ask them to "go through the motions" in order to prove that they know something. They also shared stories about being asked to do the same generic assignment in more than one course, such as "write a paper about a theme in Lord of the Flies."

Unwittingly, my students had pointed to an important principle in the way we use writing in our classes: the quality of an assignment matters far more than we think. Dull, ill-formed, poorly conceptualized, unrealistic, confusing, and badly written assignments lead to writing disappointing in equal measure. Such assignments open themselves up to plagiarism- sometimes even invite it -- in their insensitivity to students' writing and learning experiences. (A Google

search for "Lord of the Flies paper" yields over 83,000 URLs, many of them links to downloadable high school and college essays.)

This principle is also an important part of a statement on plagiarism recently issued by the Council of Writing Program Administrators. In 2002, the Council assembled a task force whose dozen members represented writing programs at a range of institutions such as Duke, Illinois State, Syracuse, Stanford, Purdue, Temple, and Eastern Michigan Universities. The task force spent over a year drafting a position statement on plagiarism which is now available under a Creative Commons license for free duplication and dissemination (Council, 2002). Among its most important features, the statement excludes from its definition of plagiarism those cases in which students try earnestly but imperfectly to cite sources, falling prey to inexperience and lack of instruction. But the heart of the document is its many helpful suggestions for teachers, who, it claims, share responsibility for avoiding plagiarism by providing needed guidance and instruction and by creating well-crafted, carefully sequenced, and interesting assignments.

It's in the Assignment

If the fear of plagiarism has any positive influence, it is in its potential to help us design plagiarism-proof assignments. Many of the strategies that subvert plagiarism are also those that support the principled use of writing in coursework. For example, unique assignments, assignments that show imagination and creativity, have no precedents (and therefore no Internet paper will "fit" the assignment). Sometimes it takes only a small adjustment in audience or form to turn a generic assignment into a unique one. Letters to authors, imaginary conversations between two authors or characters, mini-cases or applications of an idea to a specific context, explanations of concepts to specific audiences (such as a group of 4th-graders) -- these kinds of assignments can be shaped to realize certain learning goals or intellectual processes. Especially in general-education courses, where it is somewhat less important for students to learn the conventions of writing in a certain discipline, assignments can take more classroom-based forms, in which, for example, students must incorporate ideas from a class discussion into their papers or must write about the progress of their work as it proceeds.

Many teachers are also rejecting the "assign and collect" method, in which students respond to assignments at home and turn them in during class for grading. Instead, they are finding ways to weave their assignments into their class work, such as giving students time in small groups to discuss material related to a paper or respond to rough drafts, or having students give brief oral "micropresentations" on their papers before submitting them. In larger projects, it's essential to provide opportunities for students to practice certain writing activities, such as incorporating outside sources effectively in their work. Breaking larger assignments down into small tasks also allows teachers to collect in-process material and monitor students' progress on a paper. Long the mainstay of composition instruction, this attention to process is slowly gaining momentum in courses across the curriculum. As it does, faculty are discovering that supporting and overseeing students' work on an assignment takes much less time than they had feared, and when artfully integrated into a course, supports rather than impedes their coverage of course material.

Toward Shared Responsibility

Students who deliberately and knowingly represent the work of others as their own are guilty of plagiarism in an academic setting, a kind of misconduct that brings upon them the misfortune of institutional sanctions. Nothing in the Council of Writing Program Administrators' statement suggests that students do not have a responsibility to behave ethically, nor that contemporary student culture flaunts that responsibility. (The almost universal involvement of students on college and university conduct committees, as well as the many other student-led groups and organizations devoted to such issues as plagiarism, bear witness to their concerns.) Just as importantly, however, faculty and administrators must consider what role they play not only in creating and enforcing rules, but in supporting students' development as writers. Designing good writing assignments and supporting their development in our classes is really about good pedagogy, a pedagogy that sees writing as a way to help students to learn, not simply to test the outcomes of learning. Good writing pedagogy has the added value of subverting plagiarism, but that's not its primary goal. If we start with pedagogy-if we take time with our assignments, and if we have students work on their writing in class, especially in small, focused groups-students will be unable

to plagiarize. More to the point, they won't want to. Personal interest and engagement in a writing project is a far better deterrent to plagiarism than detection devices or hours at the computer searching for suspicious passages.

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Chris M. Anson (Ph.D., Indiana University) is Professor of English and Director of the Campus Writing and Speaking Program at North Carolina State University.

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Promoting Learning through Inquiry

Virginia S. Lee, North Carolina State University

Background and Rationale

Inquiry as a way of knowing has its origins in the oldest university in the country and one of the premier research universities in the world. Charles Peirce, the brilliant but highly erratic son of a Harvard mathematician, was an early pragmatist and the inspiration for the later pragmatists, Harvard psychologist William James and John Dewey, the noted philosopher and educator. As a devout empiricist, Peirce characterized the rhythm of real thinking as corresponding to scientific methods of inquiry. In his 1878 essay How to Make Our Ideas Clear Peirce wrote: "…[T]he action of thought is excited by the irritation of doubt, and ceases when belief is attained." Each belief is at once a "stopping place…[and] a new starting point for thought."

By extension genuine uncertainty and doubt, formalized as questioning, are the natural provocations for knowing and real learning. All human beings are like amateur scientists whose cognitive development advances through continuous interaction with and exploration of the environment. Repeatedly new experiences cause us to question and ultimately modify our existing theories about how the world works and is organized. We promote learning, our own and others', by engaging with compelling questions that arise out of direct experience.

The Boyer Commission's 1998 report, Reinventing Undergraduate Education: A Blueprint for America's Research University,

highlighted the importance and appropriateness of inquiry-guided learning (IGL) in undergraduate education, particularly in research universities. IGL capitalizes on one of the key strengths of research universities, the expertise of its faculty in research. It lowers the boundaries between faculty and student views of learning. Faculty learning in research universities is exploratory, problem-centered, and research-oriented. It involves recursion or the refinement of each successive approach based on what was learned during previous attempts. In contrast, all too often students view learning as the memorization of information, a view reinforced by traditional teaching methods.

What is Inquiry-guided Learning?

Inquiry-guided learning (IGL) refers to an array of classroom practices that promote student learning through guided and, increasingly, independent investigation of complex questions, problems, and issues, often for which there is no single answer. Rather than teaching the results of others' investigations, which students learn passively, instructors assist students in mastering and learning through the process of active investigation itself. This process involves the ability to formulate good questions, identify and collect appropriate evidence, present results systematically, analyze and interpret results, formulate conclusions, and evaluate the worth and importance of those conclusions. It may also involve the ability to identify problems, examine problems, generate possible solutions, and select the best solution with appropriate justification. This process will differ somewhat among different academic disciplines.

Learning in this way promotes other important outcomes as well. It nurtures curiosity, initiative, and risk taking. It promotes critical thinking. It develops students' responsibility for their own learning and habits of life-long learning. And it fosters intellectual development and maturity: the recognition that ambiguity and uncertainty are inevitable, and in response, we must learn to make reasoned judgments and act in ways consistent with these judgments.

Instructors can provide support to students in a variety of ways. These ways include well-constructed syllabi and lesson designs, carefully designed assignments with accompanying evaluation

criteria (or "rubrics"), good questioning strategies, constructive feedback, and much more. In addition, a variety of teaching strategies, used singly or, more often, in combination with one another, are consistent with inquiry-guided learning: interactive lecture, discussion, group work, case studies, problem-based learning, service learning, simulations, fieldwork, and labs as well as many others (Hewlett Steering Committee, 2000).

In addition to these more general kinds of support, instructors can provide more specific guidance in doing the discipline and the processes of inquiry. Certain kinds of support unmask and reveal the structure and mechanisms of inquiry itself in the same way external scaffolding reveals a building's internal system of balance and support. Derived from the Greek word for to discover or find, heuristics are guides to discovery and learning and rules of thumb that help learners proceed along empirical lines to find solutions or answers. Examples of specific heuristics include vee diagrams, the IDEAL problem solver, and the MORE thinking frame. With constant repetition and use over time students will internalize the structure of heuristics as internal guides to independent thought and inquiry (Lee, 2003).

Specific Examples of Inquiry-guided Learning

Below are specific examples of inquiry-guided learning drawn from the work of faculty who have participated in one of several IGL programs at NC State University:

Latin American History

In his courses on Latin American history, Rich Slatta (Department of History) (http://social.chass.ncsu.edu/slatta/) allows students, even first year students, to act as apprentice historians. History becomes a dialogue between students, historical sources, and other historians, rather than a closed, fixed set of dead facts. In his transition from a more traditional approach, Rich now assigns far more primary rather than secondary sources and provides students specific guidance on how to examine and interpret historical documents. Instead of traditional exams and research papers, he now uses a variety of assignments such as short, 250-word papers in which students respond to thought questions, role plays in which students take on the identity of historical characters, and many informal activities that

are ungraded. With assistance from another faculty member, Rich also developed a four-part essay rubric that explicitly lays out the competencies necessary for good historical writing.

Pulp and Paper Science
Conventional wisdom holds that highly technical fields, due to their high "content load," don't lend themselves to IGL approaches. Adrianna Kirkman, Med Byrd, Hassan Jameel, and John Heitmann in the Department of Pulp and Paper Sciences have found otherwise. As early as the first year students confront actual problems encountered in paper mills by experienced practitioners. While they have a much smaller knowledge base and backlog of experience on which to draw, they can still grapple with perplexing problems encountered in industry. For example, working in groups students consider the potential impact of available timberwood for the coming year having a 20% higher ratio of summerwood to springwood as compared to the wood supply for the past several years. They consider the implications for chipping, digestion, bleaching, and finished product strength, surface and optical properties. Med has completely revamped an introductory survey course on the paper industry through the widespread incorporation of problems and team learning. And Adrianna, Hassan and others in the Department have created a research-based capstone course. As a result from the beginning of the curriculum until the end, students practice problem-solving and inquiry in ways appropriate to the discipline and their developmental level.

Foreign Languages and Literature
Using inquiry-guided learning, Arlene Malinowski (Department of Foreign Languages and Literatures) (http://www4.ncsu.edu/~arlene/) has turned her French civilization course topsy-turvy. Rather than beginning with the caves of Lescaux and marching dutifully through time to present-day France, Arlene structures her course around one big, over-riding question: How can the study of French history and civilization help us to understand the complexity of contemporary life and thought in France? Structuring the course in this way provides a coherence that it lacked previously. Throughout the course, she presents students with perplexing cultural dilemmas which they are asked to analyze and interpret based on what they have learned in the course. Critical thinking questions—"France

holds third place, just after Japan and Australia, for longevity. How would you explain this high rating?" and problem-based learning scenarios—"You've just been promoted to the position of manager of the branch office of a large fast food chain in France. The Executive Director in New York has given you instructions to investigate the feasibility of establishing a new franchise in Nice. Develop a plan for how you would present your enterprise to the average French citizen."—form the basis of many writing assignments.

Conclusion

For both faculty and students inquiry-guided learning represents a new way of thinking about teaching and learning. Instructors need to go back to a time when their disciplines were a novel way of knowing and being in the world and consider how they can assist students to practice their disciplines at increasing levels of sophistication (Doherty, A., Riordan, T. & Roth, J., 2002, p. 10). Students need to appreciate the role of uncertainty and struggle in learning, concepts that are unfamiliar to students accustomed to lecture as the predominant teaching strategy and rote memorization. The benefits of inquiry-guided learning are substantial, however: for both instructors and students a revitalized interest in the process of learning and a deeper understanding of how we develop complex abilities such as critical thinking, independent inquiry, and responsibility for one's own learning.

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Virginia S. Lee (Ph.D., University of North Carolina at Chapel Hill) is Associate Director, Faculty Center for Teaching and Learning, North Carolina State University.

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Taking Self Assessment Seriously

Georgine Loacker, Alverno College

Self assessment seems to be an ability whose time has come to take its rightful and continuous place in higher education. Now that making student learning outcomes explicit has become an accreditation requirement, where does self assessment fit? As a starting point, who of us does not see lifelong learning as an outcome of a college or university education? And, when encouraged to define what lifelong learning means, who of us would not include the ability to evaluate the state of one's understanding and competence, one's progress in developing them, and the determination of what needs to come next? In light of that, self assessment seems to be an ability logically essential to effective lifelong learning.

Yet, in my experience, most college graduates do not recognize self assessment as a skill they have systematically developed, although they might have experienced it in a freshman writing class or as a required part of a portfolio they produced. Already back in 1982 the results of a survey of college graduates in Australia identified problem solving and self assessment as the two abilities graduates most need. The participants indicated that their university education contributed less than it might have to the development of these two abilities (Midgley & Petty, 1983). In that survey, the graduates implicitly recognized that self assessment is not something they can do just intuitively well, but that it is something to be learned. Researchers—especially in adult learning— have confirmed the importance of self assessment (Boud, 1995; Candy, 1991; Chickering and Reiser, 1993; MacGregor, 1993; Yancey, 1998).

My own experience, as well as that of my Alverno colleagues, strengthened by our formal research, has verified for us that self assessment enhances learning and extends the responsibility students assume for their own education if they take self assessment seriously and work to develop it with increasingly sophisticated understanding. (Alverno College Faculty, 1994; Loacker, 2000; Mentkowski & Associates, 2000).

Seven Concepts of Self Assessment

On the basis of that experience and research, I set forth seven concepts here to define the kind of self assessment that is not merely a matter of self-grading nor of an occasional summative analysis of a series of one's performances. It is an ongoing process of evaluating one's performance in a way that makes it a sustained and sustaining essential part of lifelong learning.

The first of these concepts is the understanding and practice of self assessment as a developmental process that, like understanding itself, is never exhausted in its ability to grow. Our research in self assessment has formally revealed what we've all probably experienced—that a beginning student "makes judgments on her own behavior when someone else points out concrete evidence to her" (Alverno College Faculty, p. 106) and "expects the teacher to take the initiative in recognizing her problems and approaching her about them."(Alverno College Faculty, p. 106).

After several years of consistent practice in self assessment throughout her academic program, a student "emphasizes reliance on self assessment," "gives evidence of internalizing standards of self assessment," and "shapes her aspirations realistically commensurate with her abilities." (Alverno College Faculty, p.107). These indications of growth suggest that with self assessment, as with any other ability, understanding increases with practice and further understanding refines practice.

A second concept essential to the kind of self assessment that underpins lifelong learning is the use of observable performance as the basis or evidence for judgment. Ideally, students assessing

themselves for effectiveness in teamwork in science experimentation, for instance, judge it on the basis of a series of observable performances. Within a perhaps overall uneven pattern of effectiveness, they are able to discern patterns of strengths and weaknesses that can assist them in their plans for improvement.

Two more concepts that define the kind of self assessment called for here are careful observation and reflective analysis. Several basic subskills involved are distinguishing observation from inference and discerning detail that is apt to be overlooked. The challenge of precise observation lies especially in the ability to separate one's expectations from actual performance, for our research has uncovered the tendency in a beginning student to "experience evaluation of her performance as general affirmation or rejection of herself." (Alverno College Faculty, p.106). Typically, a student's perception of his or her own speaking ability can be that it is nonexistent. That student will find it very hard to discern what might be excellent articulation or any other signs of effective speaking even in a video recording of his or her performance, much less in a performance recorded only in memory. For this reason it is important to assist a student to understand that each self assessment is an evaluation, not of the person, but of a performance in a specific context or a series of performances in various contexts. The self is doing the judging as the agent rather than being judged as the object.

For an understanding of one's observations, reflection plays an essential role in self assessment. Getting at the how and why of one's actions seems an obvious preliminary to avoid leaping to judgment. Boud, Keogh, and Walker say it well, in identifying the role of reflection in relation to self assessment as a concern "with how the learner works on the experience, links new knowledge with old, reexamines the initial experience in light of his or her own goals, integrates knowledge into his or her existing framework, and rehearses it with a view to subsequent activity." (1985, p. 21).

A fifth concept incorporated into self assessment as a developing process is that of the use of criteria that are gradually internalized. These criteria are constantly refined by instructors, who initially articulate the criteria, and by students, who at first might or might not

be able to express some criteria. Both keep coming to an increased understanding of the sought abilities and knowledge the criteria represent. Part of students' learning to self assess is their seeing criteria (in effect, shared mental models) as specifically defining the nature of an ability or a cluster of abilities. A given student might know that effective organization is a criterion for good writing, but it takes some time to understand exactly what that means in performance, how context and audience require it to vary, and how one integrates its myriad nuances and varieties and levels of expression.

The development of criteria is enhanced by instructor and peer feedback, which is the sixth defining concept identified here as essential to the kind of self assessment needed for lifelong learning. Through such feedback, a student expands his or her operational understanding of what constitutes effective performance. Anne Brockbank and Ian McGill stress the point that, without the interaction of thought brought about by external dialogue, "critically reflective learning may not happen." (1998, p. 79). Feedback from instructors and peers can highlight points the student missed, can discover gaps in the student's analysis, can provide other perspectives from which to view a performance, and can raise questions that might lead to further understanding.

The final concept for defining self assessment in relation to lifelong learning is planning for improvement. Clearly the process of careful observation and reflective judgment, if recorded, can provide valuable information for ongoing improvement. Specifically, it can assist students to transform vague hopes into realistic goal setting. Directed assignments for self assessment designed and administered by the classroom instructor can encourage students into a habit of articulating goals for improvement, whether the student is an aspiring scientist who needs to raise questions that evoke thinking rather than factual answers or an aspiring historian who needs to analyze assumptions before drawing conclusions. A goal might be set for the next single performance until it becomes a habit or it might span a semester or year. In any case, it encourages the student to reexamine and verify his or her intuitive decisions as well as intentionally informed ones.

Conclusion

The potential of such self assessment to become a natural part of how a student approaches his or her challenge to continue to learn to live and work and relate to others effectively is pointedly summarized in words from an informal conversation with one Alverno College student about to graduate: "I think I kind of figured out what the goal is behind this whole self assessment thing that I have spent three and a half years on. The whole goal is to become a self-directed learner, to become responsible for your own education because we are not always going to have the opportunity to be here and to be guided by a teacher and to lean on a teacher. You have to be able to have an accurate idea of where you are and how you are doing, especially when you take in new information or new areas and you don't have these people as resources anymore. It's very difficult to get all this knowledge and keep going unless you are able to figure out how it is that you are doing—and that takes practice to get accurate and realistic." (Alverno College Faculty, 1994, p. 78).

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Georgine Loacker (Ph.D., University of Chicago) is Professor of English and Senior Assessment Scholar at Alverno College.

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Great Expectations and Challenges for Learning Objects

Anne H. Moore, ***Virginia Polytechnic Institute and State University***

Some educators say that learning objects could be the wave of teaching and learning's future and vehicles for change in higher education. If educators successfully develop high quality learning objects that are well defined and easily reused, then these digitized "chunks" of information could be recombined in learning activities to meet learning's complex aims and a learner's particular needs. This approach sees learning objects as building blocks that offer creative possibilities for customization and flexibility in learning activities.

For such changes to occur, learning objects must not only aid learning, but also be widely used. Several repositories for learning objects exist and continue to be developed. (See <http://elearning.utsa.edu/guides/LO-repositories.htm>) But objects in the repositories are not ubiquitously used. Disagreement exists over what constitutes a learning object, how to differentiate the eclectic array of items in repositories, how to determine item quality, how to appropriately create and use items, and more. Questions remain concerning the manner in which using new technologies — with learning objects representing a particular, perhaps significant, case — might substantively change the way teaching and learning occurs. With this in mind, a brief overview of just a few challenges in

creating and using learning objects well might also temper great expectations for transformed teaching and learning practices in the near future.

Designing Learning Landscapes

History suggests that people often misunderstand powerful new technologies at first, trying to use them to address challenges in traditional ways. Later, after much experimentation and thought, they realize that the new technologies require the reorganization of human and financial resources, thereby creating new potentials for human processes (Christensen, 2000). For example, it is not new to have students memorize the details of a subject area, even if the details arrive in a digitized form. It is a different proposition, however, to ask students to systematically contextualize details, interactively using new technologies to mediate and assist in the process. Here, students might use technology to associate themselves in relation to other people, cultural perspectives and views of events or practices as an integral part of acquiring certain knowledge and skills.

To use learning objects as building blocks for a particular student's learning activities represents a significant departure from traditional instructional design practices. Most current practice in teaching and learning assumes that a whole course or a whole unit of instruction is designed, built, and delivered as a package to learners either face-to-face, electronically, by mail, or a combination of the three. Traditional course development involves setting learning goals and objectives that correspond to activities, often integrated in a sequential fashion, to engage students in using concepts and skills thought to enable realizing course aims. Usually, students participating in the same class section will be exposed to the same sets of learning activities.

In contrast, if learning objects are used as building blocks for learning activities for a particular learner's needs, faculty and students may use the blocks in highly creative construction processes. Developers of learning activities, be they faculty or students, may fit objects together from same-subject or other-subject repositories that help meet particular learning objectives. The result is flexible learning activities that may or may not require direct faculty facilitation in the learning process, depending on a learner's needs. Obviously, the scenario suggests a continuum of construction

possibilities, from teacher-developed to learner-developed.

Challenges

Such proposed new practices present several challenges, only three of which will be briefly outlined here: 1) deciding how to design learning objects; 2) deciding the best use of learning objects; and 3) understanding the theory and related assumptions that underpin the use of learning objects to benefit learning.

Design Issues. Since a major value of learning objects may reside in their reusability, perhaps across many different subject areas, then designers and programmers must consider how large the learning object should be and how the object should be "tagged" or programmed so that it can be assembled and reassembled over time. Some suggest that designers must decontextualize the objects, deconstructing materials into their component parts to enable different approaches to their re-assembly to meet individual needs. But how big should a learning object be to be useful? If the learning object is too small, the effort to manage pieces — like graphs, charts, text and pictures — might consume human patience, not to mention technology systems (Long, 2003). Another obvious challenge is that most existing content must be re-designed and turned into a system of learning objects in order to use it in the new ways proposed. Further, even existing learning objects often need to be reformatted to be used with existing learning systems and other developing systems of learning objects (Wiley, 2003). For reuse to work, developers must develop standards for producing learning objects that allow for easy storage, retrieval, and use.

Utilization Issues. Foundations, corporations, and governments have provided substantial support for developing technology-based learning resources in recent years, with many variations in emerging products resulting. At the same time, literature is surfacing that explores differences between learning materials, learning resources, and learning objects, also suggesting that the larger education community is not familiar with these terms (Ip, Morrison & Currie, 2001).

Faculty who experiment with learning objects face a myriad of choices. The MERLOT Project, which contains independent

"chunks" of materials—objects of many sizes, shapes, and textures—is one example. Another place is MIT's OpenCourseWare Project, which functions for the moment more like digitized materials associated with a course syllabus. Each of these initiatives raises intellectual property issues early in the design process, in turn creating Web-based repositories in an "open source" environment, free for noncommercial uses. Still, these efforts and others are more akin to publishing enterprises and thus share a particular liability of any publishing concern – how to get practitioners to use what is available, even when it is free. Further, the materials in such projects require considerable effort to locate and then transfer to another learning environment. More important, the mere use of digitized materials does not necessarily represent an effective technology-mediated transformation of learning (Twigg, 2003).

Theoretical Issues. David Wiley (2003) points out that three assumptions have colored designers' decisions regarding many learning object efforts: 1) individualized instruction is preferred; 2) human interaction in large scale learning environments is economically impossible; and 3) automation through technology-assisted instruction is the only solution to providing "anytime anywhere" learning. Wiley further posits that these assumptions contradict recent research on learning.

For example, while the instructional design behind learning objects is moving toward decontextualization, modern learning theory increasingly stresses the importance of context in learning. Learning objects often exist as inert "chunks of content," while learning theory is arguing for more instructional strategies such as case-based learning scenarios that involve problem solving and that use tools thoughtfully integrated to inform and be a part of learner actions. Wiley finds it paradoxical that we would put learners "in front of technology so that they can retrieve data from a supposedly intelligent machine…" further suggesting that "mainstream approaches to using learning objects present learners with one world view and no opportunity to experience alternatives, hear the stories of Others, or ask meaningful questions…"(Wiley, 2003, p. 3).

In short, how we conceptualize, design, and use learning objects will determine whether they aid learning. Theory suggests that benefits

accrue to efforts designed to reinforce higher order learning that involves analysis, synthesis, evaluation, and application—skills for a lifetime of learning—and not just to digitizing ways to recall details, order facts, paint by numbers, or match associated pairs for the short run. For this to occur, an emerging conversation suggests that several kinds of expertise must be brought to bear on object design and use, with clear delineations in the process between learning technologists, subject matter experts, and instructional designers (Ip, Morrison & Currie, 2001).

Dreams, Strategies and Tactics

The new technologies' transformational power resides in the complex volumes of data that can be stored, retrieved and used in innovative ways. Whether in text, audio, simulations, or other visual media, content or processes embedded in learning objects can be organized and analyzed in sophisticated ways, with learning activities represented in significantly different forms. Because new technologies permit such usage, some might say that they argue for or even demand careful experimentation and application. "They also argue for learning organizations that are capable of working at the same scale and complexity, enlisting a multitude of talents, training, and abilities in order to exploit the technologies' potential power" (Howard, 2002, p. 2).

In support of this notion, Wiley and others argue for using "open source" projects like Stanford's Creative Commons or Rice's Connexions to create electronically accessible spaces where people can experiment with and learn from using new technology-enriched resources. Encouraging students to use learning objects to solve problems, explicate cases, and analyze scenarios may provide life-long benefits to their learning processes.

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Anne H. Moore (Ed. D, College of William and Mary), is Associate Vice President, Learning Technologies at Virginia Polytechnic Institute and State University.

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Engaging the Whole Student: Interactive Theatre in the Classroom

Suzanne Burgoyne, University of Missouri-Columbia

Augusto Boal's interactive Theatre of the Oppressed (TO) provides embodied learning experiences that engage the senses, emotions, and imagination as well as the intellect. Doing theatre is a form of active learning (Gressler, 2002), and research shows that active learning helps develop critical thinking (Bonwell & Eison, 1991). Using TO techniques, faculty can guide students in exploring ideas through images and enactment, rendering the subject matter memorable and meaningful.

Brazilian theatre director, writer, and politician Augusto Boal drew upon the work of Paolo Freire, author of Pedagogy of the Oppressed (1970), in developing TO. As an engaged artist struggling against the Brazilian dictatorship in the sixties, Boal was arrested, tortured, and exiled. An inveterate storyteller, Boal recounts the experience that inspired him to move from traditional political theatre to interactive theatre, in which the spectator becomes "spect-actor," actively engaging in theatrical explorations of social problems. Boal's company was performing in a peasant village, and the play ended with actors holding rifles over their heads and vowing, "We will go and shed our blood and take back our land!" Afterwards, one of the villagers invited the actors to lunch, adding, "Bring your guns. After lunch, we'll go attack the landlords and start taking back our land."

Embarrassed, Boal explained that the rifles weren't real, just stage props. "That's okay," the villager replied, "we have enough guns for you, too." "But—we're actors," Boal protested. "So what you're really saying," the peasant mused, "is, 'You go and shed your blood and take back the land.'" Boal realized that he and his actors were hypocrites, exhorting others to actions they themselves weren't willing to take. He developed the TO approach, in which groups use theatre techniques to explore their own social issues and find their own solutions. TO can be employed in the classroom to guide students in investigating topics, especially those related to uses and abuses of power.

Theatre Games

Boal has adapted a variety of theatre games to help TO participants warm up their bodies, enhance their sensory awareness, and promote group cohesiveness. Many of these techniques also serve as physical metaphors for exploring ideas.

For instance, a key TO game is "Columbian Hypnosis." Participants divide into pairs. The leader holds out his/her hand, palm forward, eight inches from the follower's face, with the fingertips even with the follower's forehead and the heel of the hand even with the chin. The follower must try to maintain the same spatial relationship, as the leader guides the follower through a variety of movements and positions. After a few minutes, leader and follower change roles (Boal, 1992, p. 63). Variants include having one leader use both hands to lead two followers and developing a web of leader/followers, in which everyone in the room is connected.

In discussing the game, participants invariably recognize that it deals with issues of power. "Who preferred leading? Why? Who preferred following? Why?" the teacher asks. Common answers: "I liked leading because I prefer being in control"; "I liked following because it's less responsibility." Processing the experience of the web of leader/followers can lead to consideration of power problems in organizations, including the difficulty of leading while concentrating on following, and how small movements at the center can cause whiplash effects for those on the fringe. In games like "Columbian Hypnosis," ideas take on deeper meaning because students have

experienced them with their own bodies and senses.

Main Techniques of Theatre of the Oppressed

After warming up with theatre games, the group explores selected issues through one of the main TO techniques: Image Theatre, Forum Theatre, or Rainbow of Desire. Image Theatre is particularly adaptable to classroom use.

In Image Theatre, students create living statues with the bodies of their classmates. One student "sculpts" the human clay into an image of a situation relevant to the topic at hand, a situation in which power is being misused. Other students can change the image or create a new image, until the class finds an image that embodies the essence of the negative situation. In a similar fashion, the class creates an image of their vision of the "ideal" situation. Then, through sculpting transitional steps, they explore possibilities for positive change: how to move from the negative to the ideal image.

In making images, students draw upon their own experiences and values, as well as what they're learning in the course. For example, in a class for pre-service teachers, students divided into groups, each sculpting its image of the "oppressive" and the "ideal" classroom. Although the images varied, all of the negative images depicted a "teacher-centered" classroom, with power and authority vested in the instructor. All of the positive images depicted a "learner-centered" classroom, in which power was shared, and teachers and students worked together.

Images can provide vivid metaphors for ideas, metaphors likely to remain in students' memories. For instance, shortly prior to the U.S. attack on Iraq, a class used Image Theatre to explore the current relationship between the American government and its citizens. One negative image depicted three citizens sitting on the floor, alternately with hands over eyes, ears, and mouth. Behind the citizens stood three soldiers pointing guns. For another example, a group investigating leadership created as their ideal image a flock of geese, graceful in V-shaped flight. This image depicted leadership as a shared responsibility as, in slow-motion, the lead goose retreated and another goose assumed the lead position, then another, in ongoing

rotation. Ideas generated through Image Theatre are also memorable for students because they've created the images and thus have ownership of them.

In Forum Theatre, a short scene is performed in which the main character ("protagonist") is unable to solve a problem. The actors repeat the scene, inviting spect-actors to enter into the play, replace the protagonist, and try out their ideas for solutions. When Forum Theatre is used for class work, the problems selected relate to course topics. For example, the pre-service teachers mentioned above developed scenes on cultural oppression in the classroom, including plays on the biases of standardized testing and censorship of literature. After presenting their plays, the students noted in their class journals the advantages of Forum Theatre over traditional case studies. They not only had the opportunity to share a variety of solutions but to try them out to see if proposed solutions actually worked.

Boal developed Rainbow of Desire (1995) after working in countries where he found oppression to be more internalized than overt. In the basic Rainbow exercise, a spect-actor who has volunteered to be the protagonist re-enacts a real-life conflict and identifies a variety of different "desires" he/she experienced during the conflict. These desires are then embodied by other members of the group. (For example, one "desire" might stand shaking his fist at the antagonist, while another cowers, pleading for understanding). The protagonist dialogues with his/her own desires and negotiates what role he/she wishes each desire to play in the conflict. This complex form of TO may be particularly useful in courses that deal with some aspect of human relations, such as classes in conflict resolution.

How to get started

You don't have to be a theatre expert to use TO in your classes. (Timpson & Burgoyne, 2001) Boal's books provide specific instructions for TO games and techniques. You may also find someone from your campus or community who has interactive theatre experience and would be willing to lead a session for your class, so you can see how it's done. The Pedagogy and Theatre of the Oppressed organization (http://www.unomaha.edu/~pto) hosts an

annual conference and workshops on TO; they may help you locate a TO practitioner in your area. It may take some time and effort to integrate interactive theatre into your teaching, but the pay-off is worth it in terms of increased student engagement—and learning.

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Suzanne Burgoyne (Ph.D., University of Michigan) is Professor of Theatre at the University of Missouri-Columbia.

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Encouraging Civil Behavior in Large Classes

Mary Deane Sorcinelli, University of Massachusetts Amherst

For two years I was part of a bi-monthly, cross-disciplinary seminar with twenty tenured professors who taught large, lower-division lectures ranging in size from 100 to 500 students. Our goal, supported by a grant from the William and Flora Hewlett Foundation, was to improve general education courses at our University. Early on in our meetings, a desire to share strategies for managing student behavior in large lecture classes surfaced. This topic appears to be a shared concern among college teachers on many campuses, as demonstrated by the increasing advice in higher education publications on "troublesome behaviors," "incivility," and "misconduct." (Amada, 1999; Richardson, 1999). This essay looks specifically at issues of civility in the large lecture classroom, and offers some preventative measures and practical advice.

Creating a Constructive Classroom Climate

When disruptive behavior occurs in our classes, we can be sure of two things. First, we must do something. The longer inappropriate behavior continues, the more acceptable it becomes and the more difficult it is to stop. Second, it is easier to prevent disruptive behaviors than to deal with them after the fact. Establishing a positive climate and expectations for large class learning can avert many problems.The following are four groups of specific strategies that teachers can use to guide their efforts in creating constructive large

class environments (Sorcinelli, 2002).

Define Expectations at the Outset. The importance of establishing norms and setting expectations for a class at the outset cannot be overstated. A carefully planned first meeting, a clear syllabus, and simply relating to students on a personal basis can help establish a positive atmosphere and avoid problems that may arise from confusion about guidelines for classroom behavior.

- *Use the first class to welcome students and clearly articulate your expectations of behavior.*
- *Create a clear, informative syllabus to reduce student uncertainty about appropriate behavior.*
- *Let students help shape policies for classroom behavior within prescribed limits.*
- *Post syllabus, course content, and civility guidelines/links on your course Web site.*

Decrease Anonymity. When students have personal relationships with the teacher as well as their peers, civility can come more easily. The following are some practical ways to reduce anonymity in large classes.

- *Provide as much personal access as possible (e.g., arrive early to class, stay later, schedule office hours immediately after class, visit labs or discussion sections).*
- *Use technology to get to know studentst (e.g., email them, respond to their emails, survey the class).*

Encourage Active Learning. Studies suggest that active learning methods engage students with content in ways that develop positive relationships among students as well as competencies and critical thinking skills—rather than solely the acquisition of knowledge. A number of active learning strategies are particularly suited to large classes (Sutherland & Bonwell, 1996; Carbone, 1998; Stanley & Porter, 2002).

- *Give short in-class writing exercises to stimulate thought; pair students to discuss questions, accomplish specific tasks, or share responses.*

- *Assign active learning exercises on- or off-line to increase preparedness for class and to enhance learning (e.g., pre-lecture assignments, questions about readings, CD simulations, post-lecture quizzes).*

Examine Your Behavior and Seek Feedback from Students. When faced with inappropriate deportment, examine your own behavior. Surveys of students' "pet peeves about teaching" reveal that many are concerned about lecturing behaviors—including poor organization, visuals, pacing, and use of class time. Other complaints include talking down to students, being unhelpful or unapproachable, and employing confusing testing and grading practices (Perlman & McCann, 1998).

- *Ask students for help in determining what is and isn't working by administering an informal course evaluation early in the semester and discussing key results with class.*

Some Solutions for Dealing with Misbehavior

Clearly, prevention is preferable to remediation. However, instructors may still run into some students or classes that present problems. The suggestions below address behaviors that faculty report as most irritating and troublesome. There are several excellent resources to consult when confronted with more serious breaches of classroom conduct, for example, cheating, harassment, drug or alcohol abuse (Amada, 1999; McKeachie, 1999; Richardson, 1999).

Talking and Inattention

- *If students are chatting, make direct eye contact so that they know you see them, physically move to that part of the room, and/or direct a question to the area in which chatting students are sitting.*
- *Call the offending student(s) up after class, addressing the problem within earshot of others but not publicly embarrassing them.*
- *Make it clear that rude behavior irritates students as much as it does you.*

Arriving Late and Leaving Early

- *Establish an understanding with students: you expect them to come to class on time; in return, you will start and finish as scheduled.*
- *Station your TAs in the back of the classroom and have them ask late or early-departing students if they are ok, why they are leaving, etc.*
- *Institute a starting ritual: dim the lights, play music, read a notable quotation—whatever suits your teaching style.*
- *Circumvent the temptation to pack up early. Use the last five minutes of class to put a question on the overhead that gets at the heart of your lecture and/or will appear on the next exam.*

Poor Attendance

- *Make sure that the material covered in class is vital to students' mastery of the subject and that students understand the connection.*
- *Use short in-class "extra credit" assignments that essentially reward students for attending class.*
- *Assign each TA to a section of students—ask TAs to note empty seats and follow up on students who are excessively absent.*

Ignoring Deadlines

- *Clearly state your policy on missed or late work in writing and verbally at the beginning of the semester. Periodically remind students of such policies .*
- *If your policy is not to accept late papers, then don't accept them, except under the most extraordinary circumstances — and then in private.*
- *Regularly meet deadlines. If you say tests will be graded and returned Friday, then get them back on Friday.*

Challenges to Authority. At some point in large classes, many teachers will face a student who is resentful, hostile, or challenging. The following are a few suggestions for gaining the cooperation of an oppositional student.

- *As a rule of thumb, avoid arguments with students during class. If a student continues to press, table the discussion and continue it in a more neutral setting, preferably in the presence of others..*
- *Respond honestly to challenges, explaining — not defending — your instructional objectives and how assignments contribute to them.*
- *If the behavior reoccurs, document it. Write a letter to the student. Describe the behavior, how it disrupts you and other students, restate your expectations for behavior, and outline specific changes you would like to see. Copy the letter to your department chair as well as the student's academic advisor or the dean of students.*
- *On the rare occasion that a student is alarmingly hostile or threatening, contact the ombudsperson, dean of student's office, and/or campus police.*

Conclusion

For most instructors, teaching the large lecture is one of the most challenging of classroom assignments. Although we have expertise in our content areas, we often have little training to manage such large numbers of students. Paramount to establishing a positive large class environment and deterring disruptive behavior is to let students know your expectations from the outset and hold them to those expectations. Perhaps most importantly, as instructors we need to consider our own behavior as well as that of our students. An honest attempt to understand how our classroom deportment might contribute to a difficult situation may help to reduce incivilities in our classrooms.

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Mary Deane Sorcinelli (Ed.D., University of Massachusetts Amherst) is Associate Provost and Director, Center for Teaching at University of Massachusetts, Amherst.

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Self-Efficacy in College Teaching

Anita Woolfolk Hoy, *The Ohio State University*

Over a quarter century ago, Albert Bandura introduced the concept of self-efficacy or "beliefs in one's capacity to organize and execute the courses of action required to produce given attainments" (1997, p. 3). Since that time, research in many arenas has demonstrated the power of efficacy perceptions in human learning, performance, and motivation.

Teachers' Sense of Efficacy

Teachers' sense of efficacy is a judgment about capabilities to influence student engagement and learning, even among those students who may be difficult or unmotivated. Teachers with a strong sense of efficacy tend to exhibit greater levels of planning, organization, and enthusiasm and spend more time teaching in areas where their sense of efficacy is higher, whereas teachers tend to avoid subjects and topics when efficacy is lower. They tend to be more open to new ideas, more willing to experiment with new methods to better meet the needs of their students, and more committed to teaching. They persist when things do not go smoothly and are more resilient in the face of setbacks. And they tend to be less critical of students who make errors and to work longer with a student who is struggling (Ashton & Webb, 1986; Coladarchi, 1992; Gibson & Dembo, 1984; Tschannen-Moran & Woolfolk Hoy, 2001).

Ross (1994) reviewed 88 teacher efficacy studies in pre-college settings and identified potential links between teachers' sense of efficacy and their behaviors. Ross suggested that teachers with higher

levels of efficacy are more likely to (1) learn and use new approaches and strategies for teaching, (2) use management techniques that enhance student autonomy, (3) provide special assistance to low achieving students, (4) build students' self-perceptions of their academic skills, (5) set attainable goals, and (6) persist in the face of student failure.

The Development of Efficacy

Bandura (1977, 1997) identified four sources of efficacy expectations: mastery experiences (the most powerful source), physiological and emotional states, vicarious experiences, and social persuasion. The perception that teaching has been successful (mastery) raises expectations that teaching will be proficient in the future, unless the success required such massive work that the individual feels unable to sustain this level of effort. The perception that one's teaching has been a failure lowers efficacy beliefs, contributing to the expectation that future performances will also be inept, unless the failure is viewed as providing clues about more potentially successful strategies. Interpretations of emotions and physiological arousal can add to the feeling of mastery or incompetence. For example, feelings of tension can be interpreted as anxiety and fear that failure is imminent or as excitement (i.e., being "psyched" for a good class).

Vicarious experiences are those in which someone else models a skill. The more closely the observer identifies with the model, the stronger the impact on efficacy (Bandura, 1977). When a credible model teaches well, the efficacy of the observer is enhanced. When the model performs poorly, the expectations of the observer decrease. Social or verbal persuasion may entail a "pep talk" or specific performance feedback from a supervisor, colleague, or students. Student evaluation of instructions can be a form of verbal persuasion, for better or worse. Social persuasion, though limited in its impact, may provide a "boost" to counter occasional setbacks; the potency of persuasion depends on the credibility, trustworthiness, and expertise of the persuader (Bandura, 1986).

Teacher efficacy is highly context-specific, too. A teacher, for example, who feels highly efficacious about instructing her honors literature class may feel less efficacious about teaching freshman

composition or vice versa. Therefore, in making an efficacy judgment, it is necessary to assess one's strengths and weaknesses in relation to the requirements of the task at hand.

One of the things that makes teachers' efficacy judgments so powerful is the cyclical nature of the process. Greater efficacy leads to greater effort and persistence, which leads to better performance (a new mastery experience), which in turn leads to greater efficacy. The reverse is also true. Lower efficacy leads to less effort and giving up easily, which leads to poor teaching outcomes, which then produce decreased efficacy.

Implications for College Teaching

The research on self-efficacy development suggests that efficacy judgments are most malleable in the early stages of mastering a skill and become more set with experience—at least as long as the context and task remain relatively stable. So it makes sense that early teaching experiences would be important shapers of efficacy judgments. If these early experiences are positive, then new teachers are better able to persist in the face of the inevitable disappointments and discouragements of the first attempts at college teaching. On the other hand, unsuccessful early experiences in teaching as TAs can direct graduate students away from the professoriate.

What do we know about encouraging the emerging efficacy beliefs of teaching assistants? Heppner (1994) described a three-credit-hour course for GTAs in the teaching of psychology conducted over two semesters that resulted in improved self-efficacy for teaching. In contrast to the usual finding that mastery experiences are the most important sources of efficacy, Heppner found that about 75% of the influences on efficacy described by the GTAs were forms of verbal feedback, often from their students. The practicum had taught these novice teachers how to use peer consultation to get feedback from students and this process proved a powerful source of efficacy information. In addition, discussion in the practicum helped participants see their fears and anxieties as normal and appropriate. The remaining 25% of the influences on efficacy were categorized as mastery related, such as "coming up with a good way to lecture about a difficult topic." To improve their mastery, these novice teachers wanted more knowledge about establishing personal

teaching philosophies and goals, using learning objectives to guide teaching, developing critical thinking in their students, understanding students' developmental needs, facilitating productive discussion and collaborative class projects, and handling unmotivated students as well as the nuts and bolts of planning such as constructing syllabi and assignments. Providing such pedagogical tools helps. Prieto and Meyers (1999) found that GTAs in a national survey who received formal training in teaching had higher self-efficacy scores than GTAs who received no training, regardless of the respondents' previous amount of teaching experience.

In sum, sense of efficacy is a valuable outcome of early teaching experiences and can be fostered with specific training that provides needed pedagogical knowledge, a variety of forms of feedback, and social support that normalizes the predictable fears of novice teachers.

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More information on teacher efficacy and instruments for measuring are available on two websites:

http://www.coe.ohio-state.edu/ahoy/

http://www.emory.edu/EDUCATION/mfp/effpage.html

Anita Woolfolk Hoy (Ph.D., University of Texas at Austin) is Professor of Psychological Studies in Education in the School of Educational Policy and Leadership at The Ohio State University.

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Engaging Faculty in New Forms of Teaching and Learning

Paul Hagner, *University of Hartford*

In 2000, I wrote a white paper (Hagner, 2000) examining faculty engagement and support in new teaching environments as part of my year as a National Learning Infrastructure Initiatives (NLII) Fellow. In that paper, I argued that the degree to which faculty adopt new forms of teaching and learning is highly dependent on the motivational state of the individual faculty member. While I still believe this to be the case, the largest change that has occurred in the last three years is the degree to which faculty now have a choice in whether to transform the way they teach.

Sources of Pressure

Faculty are now being pressured by 1) their institutional leaders who believe, oftentimes erroneously, that technology-enhanced education, especially distance learning, will result in more students and dollars; 2) a corporate sector that is demanding more technologically-literate graduates; and 3) a growing percentage of students who have been exposed to new forms of teaching and learning during their high school years and expect it to be part of their college experience.

To this list of sources of pressure I will add a fourth: the faculty themselves. Even those who pay only scant attention to the professional dialogues involving teaching and learning know that

deeper learning is achieved through more interactive and visual forms of content presentation (Bransford, Brown, & Cocking 2000). Any faculty member who cares a scintilla about her students knows that they do not respond to the traditional delivery of content in the same way that we did. I remain quite optimistic that understanding our students in this way will also compel faculty to reevaluate how they present course material.

Pace of Faculty Engagement

Because of these reasons and others, I believe the pace of faculty engagement will increase at a much faster rate than I thought only three years ago. This will have a significant impact, obviously, on institutional support and training resources. There are two important issues to discuss in relation to how colleges and universities will deal with this ever-increasing demand.

First, as I argued three years ago, support staff have to consider the underlying motivations of the faculty who appear, and don't appear, in their offices. Borrowing and adapting from Everett Rogers (1995), I posited four types of faculty with respect to the transformation of teaching.

Entrepreneurs are those who are tech-savvy and adventurous about adapting new technologies to their teaching and learning. As a general rule, however, this type of faculty does not play well with others. They are less likely to want to play a mentor role for other faculty members. They are, however, frequent companions of support staff with whom they are often on an "equal footing." A real danger lies in the support staff using the entrepreneurial faculty member as a guide to design support spaces and processes. This group is not typical of most users of support services.

Second Wave faculty should be the key focus for support services. These faculty see the importance, and perhaps the inevitability, of new forms of teaching and learning. What they lack is the skill and the confidence to start the transformation process. A cardinal rule for this group is: adoption of technology for teaching and learning is inversely proportional to the effort they must exert. They want to focus on teaching and learning, not on technology issues. This type has a high percentage of good teachers who are uncertain whether or

not a change will alter this fact. A support system that does not take these factors into consideration will work against successful transformations.

Careerists are those faculty who will consider transforming their teaching and learning only when the professional environment promotes and rewards these activities. Schools with a high proportion of this type, usually larger research universities, will find transformation to be a much longer process, because changes in the reward structure usually occur glacially. One optimistic note is the rise in sites that feature learning objects developed by faculty and then reviewed by other faculty (MERLOT – www.merlot.org – is perhaps the best example). This allows the faculty member to gain professional recognition (and credit) for the innovative use of technology in teaching.

The Reluctants are those faculty who, for a variety of possible reasons, refuse to acknowledge the sea change and steadfastly hold to traditional delivery forms. I am certainly not going to advocate any draconian program to bring these faculty kicking and screaming into the 21st century. But I am also not advocating that those interested in transformation throw up their hands and ignore these faculty. Here is the danger I see. The new forms of interactive teaching and learning conform much more closely to how students assimilate information on their own than do the traditional classroom presentations. It follows that students will respond more positively to those faculty who use the new techniques than to those who don't. "Respond more positively" translates to better teaching evaluations. If the reward structure in the institution is influenced by measures of teaching evaluation, then the Reluctants will more and more start suffering in comparison. I believe that there is an institutional obligation to avoid alienating this group, a high percentage of whom are older faculty with years of service to the institution.

Inclusion of Faculty

Attempts at systemic transformation must take the "mix" of faculty types into account during the earliest stages of planning. Inclusion of faculty at this stage is essential. As I implied in the opening of this essay, we are talking about fundamental changes to how faculty do their jobs. This is not something that can be imposed upon the

faculty member; they must be partners in the process. At the University of Hartford, I spent a semester interviewing our full-time faculty in order to assess their attitudes towards new forms of teaching and learning and to find out what they needed in order to begin the transformation process. This assessment had three important outcomes. First, it allowed our team to get a sense of our "mix" of faculty. Second, it enabled us to direct resources to those areas identified by the Second Wave faculty as being essential precursors to their transformation efforts. Third, and to our surprise most importantly, the interview process created an environment of inclusion and partnership between the faculty and the administration. Subsequent strategic planning efforts had high levels of faculty support mainly due to the fact that they were tied in to the earlier assessment phase. We believe that we have made significant progress over the past three years and that this success can be traced back to the inclusive assessment groundwork we did at the beginning.

The second thing to consider is that there is a "beware of what you wish for" dimension to the transformation process. As I argued at the introduction of this essay, transformation will be happening on your campus. As I just argued, the speed and quality of that transformation will be related to the level of faculty inclusion in the planning process. However, careful attention must be paid to the support side of the equation. Many institutions, in attempting to encourage faculty experimentation, have provided good individual support, an effective strategy in the earliest stages of transformation. The problem is that, as the transformation process starts to accelerate, these support systems become overwhelmed and can actually slow the transformation process as growing numbers of frustrated faculty opt out at a crucial point in the process. Your support and training services must be able to scale with rising demands. This means making tough choices on what activities will be supported and how to adjust the training process from individuals to groups.

Three Factors in Transformation

After examining a wide variety of success stories (and quite a few failures as well), I believe that there are three crucial factors that influence successful transformation. First and foremost is leadership. Without an assurance of leadership commitment to the process, progress will be isolated to sub-areas within the institution. Systemic

transformation does not come about as a grassroots effort. Second in importance, as detailed above, is inclusion. All of those who will be affected by the transformation process need to have the opportunity to participate in the earliest stages of planning. I cannot over-emphasize the importance of buy-in, especially on the part of faculty, to successful transformation. Finally, effective communication of all phases of the transformation—planning, implementation, assessment — is essential.

I have been a teacher now for over twenty-five years; I tell anyone who will listen to me that the last three years, using new forms of teaching and learning, have been the most exiting and rewarding of my career. I wish you luck in your attempts to generate the same feelings at your institution.

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Paul R. Hagner (Ph.D., Indiana University) is Senior Advisor for Technology Planning and Assessment at the University of Hartford