

Essays on Teaching Excellence

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Leveling the Field: Using Rubrics to Achieve Greater Equity in Teaching and Grading

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The student body is changing on most American campuses with increasing numbers of minority students, first generation students, and non-native English speakers. Such students bring to campus and classrooms a vital and exhilarating breadth of experience. Yet they also bring new challenges (Gregory, 2000).

One major challenge is simply retention. First generation students' drop-out rate is almost double that of students whose parents attended college. Minority students and non-native English speakers are also at greater risk than more traditional students. And many students fall not in just one of these categories, but in all of them: many minority students, for example, are also first generation and non-native English speakers.

There is no single way to address this challenge. New social, financial, and academic support systems are needed and are slowly coming into being (Rodriguez, 2003), but there are smaller things professors can do in their classes to help such students and others thrive. One of these things is to use rubrics both as a grading tool and teaching device (Stevens & Levi, 2005).

Rubrics assist minority, first generation, and/or non-native English speaking students in four fundamental ways:

- Rubrics spell out explicit expectations for individual assignments. In so doing, they carefully describe hidden and often unspoken assumptions of academic culture such as the need for citations to avoid plagiarism, the importance of punctuality, and the terminology of academic and disciplinary discourses.
- Rubrics delineate both the strongest and weakest ways that students can complete an assignment within given skill areas. Over multiple assignments, feedback on these skill areas allows students to recognize and address their strengths and weaknesses.
- Rubrics foster equitable grading practices for both students and professors.
- Rubrics facilitate communication with support services and help these services focus their efforts.

What is a rubric?

A rubric is a grading tool that lays out assignment expectations on a grid. Most grading rubrics describe the expectations of an assignment across 3 to 5 levels of performance, for example, from exemplary to developing. Explicit descriptions of the different levels of performance emphasize a developmental view of education. In addition, the task is divided into dimensions or criteria that label the various sub-skills required to complete the assignment, for example, "organization," "content," and "conventions". The 3-level rubric with four dimensions at the end of this essay was created to grade short papers for a film class containing an unusual number of non-native English speakers and first generation students.

Clarifying Expectations

This sample rubric notifies students of expectations before they begin writing. By discussing the expectations when the rubric is handed out, a teacher clarifies the task. Such preliminary discussions allow many misconceptions to be corrected.

In the "content" dimension in the sample rubric, for example, discussion of the need for centralizing themes and supporting evidence for all claims is useful for students, but particularly for those who may not be familiar with this component of American scholarly practice. Such discussion can also help define words that may seem colloquially familiar to students but that have a very different meaning in academic usage. In one class, for example, a student was unfamiliar with the word "theme" in any context except his senior prom. Similarly, the "organization" dimension clarifies the need to structure paragraphs and sentences so as to move the reader along in a logical way. The "conventions" dimension is particularly revealing to non-native English speakers because it clarifies the fact that English skills are only one part of writing a good paper and that it is possible to excel in all other areas even if this one is weak. The rubric also reminds the professor of that fact. Finally, the "rules" dimension clarifies the importance of punctuality in a way that links it directly to the grading process.

Integrating rubrics into class discussion and written work in this way also forces students to take greater responsibility for their learning and to become more active learners. With rubrics, students have the opportunity to grade their own work before turning it in. Professors may also find that peer reviews of student work using the rubric can strengthen performance as well as the understanding of task expectations.

Charting Progress

The skill-related dimensions on the rubric are especially useful in classes that have a large number of written assignments because they allow students to gauge their own progress and to become more active, self-motivated learners. Professors can increase this utility by encouraging students to save their rubrics and compare them over a period of time. Doing so helps students see a pattern of strengths and weaknesses and then develop a plan to address areas where they consistently receive low marks. Ideally, students should also begin to see a pattern of improvement on subsequent rubrics in those dimensions after a period of time.

Such self-directed analyses of learning problems and plans for

improvement are useful for all students, but they are often a revelation for those whose previous educational experience and/or cultural background stressed dependence on the teacher.

Equity

Studies indicate that freshmen are more likely than other students to feel that they are graded unfairly. This seems to be even more true for minority and first generation students (Smedley, Meyers & Harrell, 1993). Even when this perception is utterly mistaken, it cannot be dismissed since the perception itself can have a negative impact on student learning. By spelling out the criteria used in grading, and emphasizing that the same criteria are used for all students, rubrics can do much to alleviate this concern.

Rubrics can also be reassuring for professors who often wonder if their grading is as equitable as they want it to be. Their concern may be about whether the first paper on the stack is graded in the same way and with the same criteria as the last. Using rubrics provides them with a fair degree of certainty that they are consistent in their grading practices.

Support Services

Most institutions have support services in place for non-traditional students such as writing centers, tutoring services, libraries, counselors, and peer tutoring groups. Rubrics — along with syllabi, assignments, and other classroom handouts — can be invaluable in helping support services determine what kind of help each student needs. Professors should encourage their students to bring their rubrics (including those already used to grade specific assignments) along with them when they utilize these services.

One Small Step

Using rubrics for grading and then integrating them into classroom teaching is a step on the path toward greater equity for all students. This grading tool can also have a powerful effect on student learning and retention. Because they make explicit a wide variety of unspoken assumptions and expectations in academic culture, rubrics

are particularly helpful for minority students, first generation students, and non-native English speakers.

	Exemplary	Competent	Developing
Content	Main themes are identified and compared/contrasted with sufficient depth and completeness, strong support and adequate detail.	Main themes are identified and compared/contrasted in a vague way, or not as deeply as they might be. Supporting evidence and analyses are lacking in detail or unclear.	Main themes are poorly identified or not identified. Comparison/contrast is limited or missing, as is supporting evidence and analysis.
Organization	Writing demonstrates a unified and consistent organization. The order and structure of the essay, paragraphs, and sentences are compelling and move the reader through the text easily.	Writing demonstrates a logical order and structure that may be formulaic or inconsistent. Paragraphs, sentences, and/or transitions are sometimes effective but sometimes not.	Writing lacks a clear structure or order. Paragraphs and sentences are convoluted and difficult to decipher. Transitions are abrupt and the reasons for them unclear.
Conventions	Grammar, spelling, punctuation, capitalization, and vocabulary usage are correct and appropriate. The tone is consistent and appropriate to the assignment.	Grammar, spelling, punctuation, capitalization, and vocabulary usage contain some flaws that do not impede readability. The tone is inconsistent and/or inappropriate.	Grammar, spelling, punctuation, capitalization, and vocabulary usage contain major flaws that impede readability. The tone is wildly inconsistent and/or inappropriate.
Rules	The essay fulfills the assignment and was turned in on time.	The essay only partially fulfills the assignment and/or was turned in one day late.	The essay fails to fulfill the assignment and/or was turned in more than one day late.

Stevens, D. D., & Levi, A. J. (2005). *Introduction to rubrics: An assessment tool to save grading time, convey effective feedback and promote student learning*. Sterling, VA; Stylus.

Youth and the Family in Japan and America *Rubric for Directed Essays*

Task: Write a 3-4 page essay answering one of the questions

regarding this week's films. Be sure to include both films and compare and contrast what they reveal about youth and the family in America and Japan.

References and Resources

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LAUGHTERPIECE THEATRE: Humor as a Systematic Teaching Tool

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Where do you start? It's like eating one of those dinosaurs from Jurassic Park. Once you forklift your filet of T-Rex off the grill, which is the size of Wyoming, where do you take your first bite? Tough decision.

There are buckets of research on the psychophysiological effects of humor and laughter (Berk, 2002, 2004a, 2004b; Martin, 2001). Direct links have also been established between multiple intelligence theory and research from cognitive/neuropsychology, education, commercial advertising, and communications with humor in the classroom (Berk, 1996, 2000, 2001a, 2001b, 2002, 2003; Berk & Nanda, 1998, in press; Gardner, 1993; Goleman, 1998; Mehrabian, 1981). Evidence-based techniques are available. It is now time for YOU to take the first step (or 10th, if you're currently using humor) to produce humor in your classroom. No excuses. It is within every one of you to do this. In fact, I've even selected appropriate theme music for you to sing while you read this page: "We Can Do It," from the smash hit Broadway musical *The Producers*. If Max Bialystock and Leo Bloom can succeed as producers of "Springtime for Hitler" (a gay romp with Adolf and Eva at Berchtesgaden),

We can do it, we can do it.

We can do it, me and you.

We can do it, we can do it.

We can make our dreams come true.

First, let's discard the negative baggage you may still possess. Toss it out. If you tried a joke or funny story in class before and it bombed, fawgetaboutit. I had the same experience, but I kept doing it, only to be rejected over and over again. What was I thinking? Stand-up jokes are very difficult to execute effectively. It is so tempting to tell a joke you heard that was sooo funny. But few of us can deliver it the same way we heard it. So let's not think about our past joke-telling and failures.

Humor Incongruity Formula

Before proceeding with specific humor techniques, the underlying concept of the forms of humor described in this essay should be clear. It is called incongruity or contrast resolution—the juxtaposition of the "expected" with the "unexpected." For example, the one-liner is based on this structure: "Never raise your hand to your children; it leaves your midsection unprotected."

The expected element is the "serious" premise or set-up for the unexpected twist or punch line about our past joke-telling and failures.

Humor Delivered Orally

Most forms of humor that are longer than a one-liner and delivered orally contain three elements:

- Expected - serious set-up with commonly understood situation or content
- Expected - build-up of tension
- Unexpected Twist - punchline

This is the humor trifecta. All three elements are required for maximum winnings.

When students anticipate a joke is coming, clued by your set-up, body language, or bullhorn announcement, you have the benefit of building tension before delivering the punch. That build-up can affect the impact of the punchline. The delivery needs to be intentionally calculated with a pause just before the punchline. It needs to be practiced with anecdotes, multiple-choice format jokes, top 10 lists, or any other longer joke forms.

Humor in Print

In contrast to the above, "script humor" has no build-up of tension, no element 2. It's a bifecta, just expected followed by unexpected twist. The reader doesn't have a clue when the punch is coming. He or she is reading seriously (Is there any other way?), then, all of sudden, CRASH: the Miami SWAT Team barrels through your front door with a humongous battering ram, guns-a-blazing. This is quite a surprise because you live in North Dakota. Anyway, back to the sentence somewhere above. As you're reading, all of a sudden, you're smacked with a punch of some kind, right in the labonza (which is anatomically located just below the right hernia).

The punchline is the point of collision between two conflicting trains of thought: serious sentence meets unexpected ending. The shock is our recognition of this incongruity. There is virtually no opportunity to warn the reader. The only exception is a multipanel cartoon, where each panel builds tension—bubble after bubble -- toward the final panel punch.

There are 10 basic strategies that can be used to infuse humor systematically into your teaching. They are briefly described in the next section. The strategies are categorized by level of risk: low, moderate, and high. The lowest level involves inserting punchlines into your normal print material. The moderate- and high-risk categories rely on oral delivery.

Ten Humor Strategies

Low Risk Humor Strategies

1. Humorous Material on Syllabus

- Incongruous descriptors under course title
- Humorous prerequisites
- Fictitious instructor credentials
- Outrageous office hours
- Bizarre teaching methods

2. Descriptors, Cautions, and Warnings on the Cover of Handouts

- Incongruous descriptors under the title
- Cautions and Warnings

3. Humorous Problems/Assignments

Use humorous real or hypothetical situations in your assignments

- In-class and out-of-class
- Individual and small group (especially active/cooperative learning tasks)
- Problem-solving exercises, games, etc.

4. Humorous Material on Tests

- Incongruous descriptor under the title
- Jocular inserts in directions
- Humorous note on last page
- Humor in the test items
- Content-irrelevant strategies
- Content-relevant strategies

Moderate Risk Humor Strategies

5. Humorous Questions

Punchline questions during Q & A sessions:

- Set-up: Ask question
- Answer structure:
- How many of you think this is the correct decision/answer?
- How many of you think this is the correct decision/answer?
- Add one punch:
- How many of you don't care?
- How many of you don't like to be awakened during class?
- • How many of you are having evil thoughts about this problem?

6. Humorous Examples

Exaggerated, outrageous, and ridiculous examples in class:

- Hypothetical humorous problems or examples
- Real or hypothetical humorous case studies
- Humorous anecdotes based on previous experience
- Humorous names, cartoon characters, celebrity or students' names in examples

High Risk Humor Strategies

7. Opening Jokes

Forms of humorous material that can be delivered by you or your

students:

- Stand-up jokes
- Quotations, proverbs, and questions ("thought for the day")
- Cartoons
- Multiple-choice items
- Top 10 lists
- Anecdotes
- One-shot handouts (e.g., medications, letters, articles, memos)

8. Commercial Interruptions

When the students' eyeballs begin glazing over, stop for a commercial:

- Stand-up joke
- Anecdote
- Humorous handout (e.g., picture, cartoon)

9. Skits/Demonstrations with Music

- Dramatize theories, concepts, and processes (bring coma-inducing topics to "life")
- Role-play case studies – create a humorous hypothetical of "what NOT to do or say" to a patient, client, or parent
- Use music to introduce the demonstration

10. Game Format Test Review

- Jeopardy!

- Who Wants to be a Millionaire
- Weakest Link

Conclusion

These strategies are only a beginning. The use of humor to hook your students' attention and to foster that special professor-student interpersonal connection is limited only by your twisted mind and imagination. For detailed explanations of the strategies and a gazillion examples, see Berk (2002, 2003). The research on these techniques is also available to download from my Web site: www.ronberk.com.

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Assessing Students' Online Learning: Strategies and Resources

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The educational community in higher education has, for some time, debated assessment issues. With the proliferation of online classrooms and the emphasis on constructivist approaches to learning, these issues have taken on even more importance.

Constructivist learning paradigms are learner-centered and posit that learning occurs when students are actively engaged in making sense of phenomena as well as constructing and negotiating meanings with others (for an extensive review and analysis of this literature, see Comeaux, 2002). Thus, learning is a reflective and analytical practice as well as an intellectually transformative act. It works when it engages students in active, co-responsible ways of knowing. In this way, teaching and learning become reciprocal enterprises as teachers and learners co-exist in a communal space of shaping and transforming knowledge and understanding.

In constructivist learning environments, assessment and learning are integrally linked. In such environments, students are aware from the onset what is expected of them; they know they are expected to demonstrate understanding of the subject matter and apply their

understanding in authentic situations. As the report from the Education Commission of the States (1996) claimed, "Students learn more effectively when expectations for learning are placed at high but attainable levels, and when these expectations are communicated clearly from the onset" (p.5). Boud (1995) made a similar claim when he explained that our assessment methods and requirements probably have a greater influence on how and what learners learn than any other single factor (pp. 39-40).

Consequently, effective communication becomes a key ingredient in assessment practices, especially in online environments. While the same is true of the relationships between effective communication, assessment, and learning in face-to-face classrooms, the demands of assessment are even more challenging in online environments. Without consistent, timely, and relevant feedback, online students more easily interpret their classroom experience as impersonal and a hindrance to their learning.

Furthermore, this paradigm of assessment acknowledges that an important function of assessment is to facilitate and promote learning. It emphasizes the importance of assessing process (formative) as well as product (summative). Huba and Freed (2000) described assessment as a process of "gathering information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences" (p. 8). This kind of assessment encourages purposeful dialogue, multiple discourses, collaboration, and peer and self-evaluation. It also contributes to a sense of community and shared purpose among a community of learners.

Benefits of Online Learning and Assessment

Interactive technologies provide us with a vast collection of resources that can enhance and extend learning environments and open up a world of possibilities in instructional design and assessment. Assessment in online constructivist learning environments should be as varied as the learning activities. In constructivist learning environments the appropriate assessments are shaped by the intended outcomes, products, or learning activities embedded in the

instructional design.

Interactive technologies provide multiple advantages and benefits for online instructors and learners. These include:

- More efficient management, collection, and transfer of assessment information;
- The ability to track, monitor and document students' activities automatically;
- Multiple communication tools to facilitate and document dialogues that can be revisited as part of the learning and assessment process;
- More opportunities and ways for providing feedback to students;
- Vast libraries of resources and interpretive tools;
- Increased student participation in discussions (i.e., more students can participate in online asynchronous threaded discussions than in face-to-face classrooms);
- An increased emphasis on student thoughts and reflections as students learn to express their ideas in writing;
- More precise grading of student participation in the course content (process) because their discussions are captured in print;
- Online tests free from restrictions of time and place imposed on testing in face-to-face classrooms.

Strategies and Resources for Online Assessment and Learning

Instructors with a belief in and appreciation for constructivist learning acknowledge the importance of using authentic tasks for evaluating students' performance in online courses. These assignments provide students with opportunities to solve problems and complete projects analogous to those of their future careers. Websites and electronic portfolios are excellent ways for students to demonstrate their competencies in a variety of areas. Burnett and Roberts (2005) described an assignment designed for pre-service high school education majors, which challenged them to learn the course material, work collaboratively, and create a teaching online environment that they could use in their own classes in the future. An electronic portfolio provides students with a creative, efficient way of showcasing numerous authentic projects created throughout their

college career.

Online instructors recommend the use of self-assessment and team-assessment tools to help students check and improve their progress as they develop understanding and products. Moallem (2005) provided a detailed model for assessment of online learning which involves three stages of assessment: initial, progress, and product. Each of these stages includes tools for self-assessment, peer-assessment, and expert/instructor-assessment. Belfer and Wakkary (2005) provided guidelines and checklists for team assessment in online courses.

Online instructors make use of self-tests as study guides and as ways to help students deepen their understanding of the course material. Hall, Molan, Bannon and Murphy (2005) described the use of interactive digital video which creates a problem scenario in a manufacturing firm requiring students to use statistical analysis to solve. Students use these online assessment tools to help them understand why their answers on an online multiple-choice test are right or wrong. Byington (2005) described how online multiple choice tests and T/F tests can provide advantages not available in face-to-face classrooms. Perhaps one of the most valuable assessment strategies for online students is a rubric which provides them with clear performance expectations at the onset and guides them through a project. Hofmeister and Thomas (2005) provided guidelines for helping instructors build and use rubrics (scoring guides) for assessing students' writings in online discussion boards. They also provided suggestions for structuring and moderating online discussions with questions that challenge students to think and write more analytically.

In sum, online instructors recommend that students receive consistent, frequent, and ample feedback throughout their online course.

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Teaching Portfolios for Graduate Students: Process, Content, Product, and Benefits

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Graduate school is a time of exploration and definition. Graduate students who begin their studies with a clear understanding of their career goals are more likely to focus and finish. The teaching portfolio process is an excellent tool to guide graduate students' development and success as they begin to clarify who they are, what they want to teach, and where they want to teach.

The Process

The process involved in the development of graduate student portfolios is different from that of faculty. Faculty already know what they are teaching and what their career path is. They also know who their peers are and who will be evaluating them for promotion and tenure. Graduate students are explorers engaged in a field of endeavor that is not yet clear to them. As they progress through their programs, they need assistance and guidance to help them find their way. They need guides who understand their disciplines, as well as career paths in those disciplines, and who have a good understanding of postsecondary education in the United States and abroad. Graduate students also need mentors who are able to support them in their search for the academic career track that is ideal for them as individuals. They need mentors who can help them strategize and

plan for success regardless of their chosen path. Thus, it is important for graduate students to seek out multiple mentors as they begin to form their viewpoints on teaching and learning. For example, when they enter a department, graduate students should become familiar with each faculty member's strengths and interests. They should ask questions about various postsecondary career tracks, differences in course preparation at the various levels, and questions about job opportunities. They should question various faculty on multiple campuses about teaching, research, and service requirements in different situations, in different institutions. As graduate students begin to develop a good sense of the possibilities available to them, they should begin to develop a philosophy of teaching and learning that will direct them toward a preferred type of institution. The most important function of a teaching portfolio for graduate students is to prepare them for the job market.

The Content

Because writing generates thought and questioning, the process of actually beginning to write helps graduate students begin to feel more confident and clear about their teaching experience and goals. Graduate student teachers usually have much less experience to draw on than faculty do when approaching the construction of a teaching portfolio. Nonetheless, because of the introduction of TA development programs on many research campuses, some current graduate students have experienced training and support that their faculty never received. Today, graduate students who plan academic careers can focus specifically on preparing for their roles as future faculty rather than bumbling their way through their doctoral programs.

Graduate students who know they want to teach can seek out opportunities to teach in labs, recitations, or courses. They can assist with undergraduate research projects and they can work in vertically integrated research teams. These experiences become the building blocks of individual philosophies of teaching and learning. Concomitantly, participation in teacher preparation activities such as workshops, seminars, courses, and videotape consultation can add skills and confidence, and thus pages, to the portfolio. In their portfolios, graduate students should present current teaching

experience while also projecting their plans for teaching courses in the future as a faculty member. Such projections help graduate students identify their preferred areas of research and connect them to budding job opportunities. It is important to start such explorations during the first or second year of graduate school so that individuals can more quickly narrow their interests and define their topics.

The teaching portfolio should also contain a discussion of any assessment and evaluation procedures in which the graduate student was engaged while teaching. It is important for young graduate teachers to begin to define their preferred methods of teaching, preferences in style, content, and approach. Student and faculty mentor feedback can be invaluable in helping graduate students define the styles that are the best fit for them as individuals. Graduate school is a time of exploration and as such is a fertile ground for the development of experience in lecturing, discussion, problem-based learning, concept testing, and other methods. As graduate students develop, they begin to mold themselves into their preferred personal style. This, of course, should be reflected in the teaching portfolio.

Graduate school also presents the opportunity to explore service to the academy, the discipline, and the community. As graduate students build the service section of their portfolios, they become more aware of the importance and pitfalls of academic service. With proper guidance, they can begin to define academic service as an expression of their individual disciplinary expertise and seek out opportunities to build their skills and contacts in service areas of import to their disciplines and to future positions. For example, sitting on graduate student committees or on faculty committees as a graduate student representative can produce a better understanding of the faculty role.

Graduate students need to learn to define and limit their research agendas while they are producing their doctoral dissertations. Nevertheless, many never grasp the fact that the research they produce for their dissertations is likely to guide them through their first faculty positions. Beginning a research section to the portfolio, ideally in the first year of graduate work, can help graduate students better define and refine their interests, topics, and publications. The

process of writing about one's research in an objective way while still a graduate student is bound to lead to a more solid and well-planned lifetime research agenda. Maintaining and updating one's yearly research plan in a portfolio is an excellent method for clarifying one's research path.

The Product

The teaching portfolio should be condensed, clear, well written, and focused on the position and institution that the graduate student job seeker is interested in. Materials should be reduced to the latest three-year span of the individual's career. They should be organized clearly, using a table of contents with illustrative headings that help the reader navigate his or her way through the material. The narrative should read like a carefully crafted paper on the individual who wrote it. This means looking at one's self objectively, examining one's own strengths, weaknesses, contributions, products, and performance. Developing a personal voice and point of view that is sincere and representative of one's own style and methods is indispensable. The portfolio should be accessible and interesting to any faculty member on the hiring committee and short enough to be read quickly. Supportive documentation should be carefully selected, minimal, and powerfully illustrative of the teacher's personal style and contributions.

Uses and Benefits of the Graduate Student Portfolio

Teaching portfolios for graduate students are most useful as supportive materials for the job search. Naturally, form follows function; and graduate students need to prepare portfolios that will actually be understandable to hiring committees. Hiring committees tend to be interested in a teacher's past, present, and future teaching roles and responsibilities. Thus, it is important for graduate teachers to describe what, when, and how they have taught up to the present. With the job search in mind, they also need to project into the future and sketch out courses that they might like to teach at both the undergraduate and graduate levels if the institution in question were to hire them.

Graduate students who successfully complete portfolios for the job

search report that they feel more prepared for their telephone interviews, the on-campus interviews, and quite literally for the job itself. Because they have carefully considered their pathway as they have progressed through graduate school, they are able to talk authoritatively, confidently, and clearly to the hiring committee. They are also better able to define for themselves which types of institutions are more likely to be a good fit for them, which of course saves them and their hiring committees time and energy. Graduate students who focus on their strengths, interests, and personal and professional development are much more likely to move into academic careers with ease and gainful outcomes.

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From Passive to Active Learning: Helping Students Make the Shift

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Research in learning and motivation advises us as instructors to incorporate more active learning into our classes to improve understanding and long term retention of what is learned (Bransford, Brown, & Cocking, 2000; Greeno, Collins & Resnick, 1996). But it's an awful lot of trouble, and we often meet with resistance from the very students we are trying to help. Why might that be so, and what can we do about it? Addressing those two questions is the purpose of this essay. I'm going to move from theory about motivation and beliefs that might underlie student resistance to active learning to practical suggestions that might counter that resistance.

Speculations on Student Resistance to Active Learning

Students in our classes have advanced in their education by succeeding in their previous classes, either in high school or college. That success was a function of the learning strategies they used, many of which fostered a type of learning that is very different from the kinds of active learning in which we are asking them to engage. In the past, their strategies of listening carefully to what the instructor says and taking notes allowed them to identify what the instructor thinks is important so they could study efficiently and do well on the types of tests they usually had. It's a very logical response on their part to want to stick with what has worked and resist efforts to get them active in class.

The behavior that is being asked of them in the new active learning classes is very different from that described above. What is an appropriate response from students in an active learning class? It's not immediately obvious to them and possibly not obvious to us either. Unless the instructor makes an effort to synthesize the outcomes of the activity, it may be up to the student to figure out what is important enough to write down and then study.

It is also logical for them to want to take a more "received knowledge" approach to their behavior in class because of their beliefs about what constitutes learning and their role in it. If they have not accepted the idea that knowledge is something they must construct for themselves rather than receive from an authority, they are going to be impatient with us for not telling them the right answer and making them instead listen to equally uninformed peers. There are plenty of faculty who would agree with that stance. What neither group understands is that the learning the students do for themselves makes the difference and lasts beyond the test. This is the basis of the constructivist theory of learning which is making great inroads into learning science.

Constructivist theory asserts that learners "construct" and "reconstruct" their understanding of the world as they interact with it. Long-term memory categories (called schemas) are modified to incorporate new information, and incoming information is modified to fit into the existing categories. For information to stick, this reciprocal process must occur at the level of the individual since each person's experiences and schemas will be slightly different. A learner can memorize another person's schemas, such as those of the instructor; but unless that new information is held up to and built into the learner's existing schemas, the learning is very superficial and likely to be inert or unavailable for future use.

How does this view of learning conflict with students' traditional views of teaching and learning? Their task in elementary and high school was frequently to remember what they were told (or had read) and give it back in a fairly unmodified form on tests. This perspective is often accompanied by a dualist view of the world: statements are

either right or wrong, and the authority knows which is which. This model of student thinking was proposed by William Perry based on his studies of Harvard undergraduates (1970). Perry proposed that, when students enter college, they tend to believe they should listen to the instructor and remember what is said. This view is often reinforced by their experiences in introductory classes, where the goal is to convey a large body of new information. As a result, the study strategies that helped them remember information in high school still often work in college, at least in their first few courses. When we ask them to engage in a more complex, self-directed, self-regulated approach that requires interpretation and analysis, we are going against their very belief about what constitutes learning.

Indeed, we are asking students to take risks with new learning strategies that they may have never used before. We are placing them in a vulnerable position in that their perceptions of their understanding are being challenged by the learning activities which we are asking them to perform. Psychology has a lot to say about the “illusion of understanding” that novices experience when they listen to experts describe things (Bransford et al., 2000). Everything sounds clear and understandable until they have to apply the very same ideas themselves. At that point the certainty they had is often shattered. One would think that students would like to have that feedback during class while there is still time to question the instructor and clear up misunderstandings. However, from the students’ perspectives, active learning puts them in the uncomfortable position of realizing they don’t understand. It’s only normal to want to feel in control and to avoid feeling confused, and so students initially prefer the comfortable illusion to the uncomfortable reality.

Of course, some of the student resistance to active learning stems from a desire to minimize effort. Some might call it laziness; I would call it strategic effort. Students have many pressures on them, especially new students who are learning the institutional ropes as well as new content and now new learning skills. Is it any wonder that they would want to stick with what works rather than gambling on an unproven learning method?

What Can We Do?

The unfamiliarity and unknown quantity of new methods. As instructors we must recognize that the value of active learning may not be obvious to the students. And research on behavioral change asserts that unless the individuals see the value and benefit of new ideas, they are not likely to abandon old ones (Eccles & Wigfield, 2002; Pintrich, Marx, & Boyle, 1993). Therefore, when new active learning methods are being introduced, it is worth taking some time in class to explain to the students why we are asking them to participate more actively and learn more intentionally than they have in the past. We should explain how these activities are related to their ultimate goal of success in the course; and we should be sure that the activities are indeed a reflection of the course objectives, not just something to do. Active learning means active engagement with the content, not just being active. Careful design or selection of the kinds of activities that we ask the students to do is extremely important in winning them over to the active side.

There's only one answer. To overcome their belief that there is one right answer to every problem, we need to expose them to increasingly complex situations across the semester and model how we could approach problems from a variety of perspectives and still create a reasonable answer to a question. It is important to introduce the students to these complex problems in a low stakes situation before making these decisions part of their grade. When using more complex problems, there should be sufficient modeling of the process or explanation of the behavior so students can feel comfortable with the ambiguity and conflict that might arise.

Learning is risky business. This last assertion points to the heart of the matter. When we ask students to be active learners in a class, we're asking them to take new risks. We're asking them to give up tried and true learning strategies for a new, initially more challenging approach. We're asking them to run the risk of failure. That's a lot to ask of students who tend to fear failing. If we're going to ask this of them, we have to make the classroom a safe place where failure is just another chance to learn. We can convey this in how we deal with their responses during active learning. We support their effort, if not their output. We can also model what it means to be an active learner, including the willingness to make mistakes. How we handle

the situation will influence the manner in which they handle the situation.

Conclusion

Active engagement creates the opportunity for deeper learning, but it can also create anxiety. Student resistance is logical, but we can break it down slowly and gradually by making the classroom a place to learn and not a place to be judged.

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Student Teams, Teaching, and Technology

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Gone are the days when best teaching practices included faculty entering a classroom with notes, lecturing, and leaving. Increasingly, as they design their courses and develop classroom delivery, faculty are being asked to pay attention to how students learn. One of the many influences nudging more faculty to think differently about their teaching is the widespread use of collaborative environments to improve learning. Another influence is the need to educate students to be effective in a world where teamwork is an essential skill. When these two influences intersect with technology, the results can be spectacular—both inside and outside the classroom. To be successful in harnessing the power of teams and technology to improve learning, however, faculty must be strategic about the opportunities and challenges presented by these pedagogical techniques and resources.

Using Teams

Short, in-class exercises are a good way to get started. Informal teams may, for example, solve a problem set or have a focused, small discussion. For teachers, this is an opportunity to make some general observations about how students interact in groups and the roles that individual students tend to take on in a group. For students, this exercise may act as an introduction to or as a reminder of the benefits of teamwork without having to contend with the complexities of a more sustained team relationship.

Requiring students to do significant work in teams is more complicated than traditional classroom exercises and may result in an adverse learning outcome if the assignment is not carefully planned and monitored. Student teams, undergraduates in particular, will rarely be successful with a large or intricate project unless they are provided with ongoing support in developing their skills in such areas as project planning, interpersonal communication, and managing conflict.

Managing conflict is one of the biggest difficulties students have when working in teams. There is significant peer pressure to get along, and it is very difficult for students to speak up when they know that doing so is likely to result in conflict. Because of the lengths students will go to avoid conflict, it is hard for them to understand that conflict is an important stage of team development and leads to better team functioning if managed well. Faculty can help prepare and position students to accept conflict as inevitable and valuable through such strategies as reflective listening, requiring students to develop a team charter (ground rules), and role playing. It is important that faculty remember, however, that they cannot and should not take on the role of mediator for the group except in those situations where every effort to help students manage the conflict themselves has failed.

One of the biggest concerns students voice about working in teams is how the relative contributions of the various team members will be recognized and evaluated, especially in situations when one or two students “do all the work.” It’s important to set up a grading system that incorporates both team and individual efforts. Our book, *Using Student Teams in the Classroom: A Faculty Guide* (2000), provides a number of printable forms to help deal with this problem. There is a team meeting form that helps students (and faculty) keep track of decisions, actions, deadlines, and individual responsibilities. There are also forms for evaluating individual contributions to the project as well as for having students evaluate the efforts of their peers. The information recorded on these forms can assist faculty and students in arriving at accurate and fair assessments of each individual’s contribution to a team project.

Technology and Teams

Using technology can significantly enhance the work of teams, but the opportunities created by technology come with related challenges. Two of these—communication among team members and the vast amount of information available to students online—pose special difficulties.

The ability to communicate online can make teamwork more efficient and seamless. Students don't need to find chunks of time when everyone is available to meet, which can be a serious problem for busy students with conflicting class and work schedules. Also, they can communicate a change of plans quickly and easily. They can share information at any time, which can smooth the differences between those who function better early in the day and those whose best work is done late at night. However, there are prices to be paid for such ease of communication.

Using technology for communication may allow students to distance themselves from the consequences of their acts. Imagine the student who doesn't feel like showing up for a scheduled team meeting or the student who hasn't done the research he or she was supposed to finish. It is quite easy to email team members instead of telling them about it in person. Likewise, any conversation that should take place in person becomes an exchange of emails. It is all too easy to express inappropriate emotions or express appropriate emotions inappropriately while sitting alone at the keyboard. And such highly charged emails are often forwarded to team members, students outside the team, and faculty, escalating conflict and further complicating team dynamics.

The vast amount of information available to students online allows them to amass a great deal of information in a very short period of time. While being able to work so quickly can be a benefit, an almost unlimited world of information poses some difficulties. Most students will choose online search engines to look for information, yet the reliability and quality of the results vary widely. Because many students lack the skills necessary for determining the relevance and quality of the information they are accessing, they may in fact waste a great deal of time.

Students may not appreciate the difference, for example, between a fact sheet provided by a government agency and a product advertisement that mimics the same format (Graf, 1999-2000). Many are unlikely to spot the bias or self-interest of a source. And a paper posted by an undergraduate student may be given the same weight as a paper by an internationally-recognized expert. With multiple team members bringing the results of their searches to the table, everyone may be overwhelmed by sheer volume. Where does each bit of information fit in the project? How does each piece fit with the rest? How do they decide what to use and what to leave out? Trying to wrestle with the answers to these questions can frustrate even a highly functioning team.

Fortunately, there are a number of strategies to help student teams cope with information overload and, at the same time, develop important information literacy skills. One strategy is to involve library professionals in the creation of team research assignments. Another is to specify what kinds of sources can be used. Also, breaking down a research project into clearly defined component parts is especially useful in helping students manage their information.

The benefits of using student teams to enhance learning and technology to enhance learning are clear. The extent to which those benefits are offset by the associated costs and how faculty will help students cope with the challenges of both teamwork and technology needs to be carefully evaluated.

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Practice Tests: a Practical Teaching Method

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The use of practice tests has been around for decades. This essay describes the development, implementation, and evaluation of short daily tests on assigned readings. Giving daily practice tests over the past several years has resulted in higher end-of-semester grade averages in my classes, increased reliability of students' exam scores, and more positive student satisfaction with teaching. I have found student responses to practice tests to be overwhelmingly positive; and, most importantly, learning improves.

College Students and Reading Assignments Daily practice tests are a method aimed at (1) encouraging students to complete reading assignments on a regular basis, (2) clearing up student misconceptions about what an instructor believes is important in textbooks, (3) at least partially allaying students' anxiety about reading assignment material on which they will be tested, and (4) improving student learning. Daily practice tests are related to Classroom Assessment Techniques (Angelo & Cross, 1993) but focus on reading assignments rather than on content or skills covered in class.

Practice tests include the "pair and share" and "peer tutoring" components of some CATs. In a study of faculty and student

experiences with classroom assessment, Steadman (1998) found that most faculty members believe such practices improve student learning and give them feedback on student comprehension. For the students, assessment "...involves students in active mental processing of new information and makes them more aware of themselves as learners" (Steadman, 1998, p. 23). Practice tests, as assessment instruments, accomplish the same goals. Practice tests are also a form of diagnostic assessment or a test being used to identify students' strengths and weaknesses on particular topics (Gall, Borg & Gall, 1996). An additional benefit of using practice tests is their inclusion in faculty members' annual reports or portfolios as evidence of special concern with student learning.

Developing Practice Tests The first step is for instructors to be clear about learning objectives and how the information in textbooks contributes to essential knowledge and skills. There must be complete coordination among course objectives, the course content to be covered both inside and outside of class, and questions on examinations.

The second step is for instructors to read textbooks carefully to identify important content and skills that will not be covered in class due to lack of time. It is also a good idea if students receive a set of take-home short answer essay questions based on what instructors believe to be important in the reading assignments. Students can then read chapters each week, answer the short essay questions based on the reading, and research any information they encountered but did not understand. The last question I use for every set of chapter questions is: "What was not clear?"

Not all in-class practice test questions will appear on exams, but practice tests provide students with a clear understanding of the type of exam questions that may be included and the

form they will take. Some textbook publishers provide test questions with instructor manuals or on CDs, but instructors should first list what issues in each chapter are significant and only thereafter consider sample questions. I usually end up devising about 90% of my practice test questions in spite of publisher-provided questions.

Implementation of Practice Tests On the first class day I tell my students that there are at least 3 sources for learning in the course: the instructor, the textbook author(s), and the students themselves. Students also hear and read on the syllabus that class participation is welcome and encouraged. Students earn points for participation in class discussions. My students know that I will not insult them by reading the textbook aloud in class or by giving lectures based entirely on the textbook. The material in textbooks is a supplement to what is covered in class. Students will demonstrate mastery of knowledge and skills by participation in class discussions and by answers on examinations. Exam questions will include material from the textbooks. The material covered in class (and not covered in the textbook) will also appear on tests.

At the beginning of every class meeting, I ask students if they have any questions about the reading assignment for the day. This is likely to be the only time the students and I discuss what is in the textbook. The practice tests, containing about five multiple-choice questions, are then handed to the students. These tests are the means by which attendance is taken, and students get credit for being present whether or not they do well on the test. The point of the tests is the practice of taking tests on assigned readings and participation in discussions of questions taken from reading material. Having the tests at the beginning of class has the added benefit of discouraging late arrivals. No class time is lost to roll taking since students confirm their presence through their practice tests.

Students first take the practice test individually and then compare and discuss their answers with a peer. Finally, there is a class discussion about the best answers and, more importantly, why they are best. We also discuss why other answers are not as effective. This helps me discover possible misunderstandings stemming from the wording of test questions. As is true of questions on the regular tests, the questions on practice tests are authentic, academically sound, and essential to learning course content. The practice test innovation is not about “teaching the test” or drilling or learning by rote. It is about critically analyzing questions, recalling important aspects of assigned readings, and developing expertise with regard to course content and its application.

Evaluation of the Impact of Practice Tests My original goal of using practice tests was to improve student learning and student grades. Based on a 10 year comparison of data from 80 classes with approximately 2400 students, final averages have increased by 5 points (Snooks, 2005).

In addition, three years of analyses indicate a direct positive relationship between the number of practice tests taken and my students’ final course grades. Reliability on all exams is .85 or above. Practice tests increase students’ critical thinking about the purpose of questions while increasing student proficiency for taking tests. When using objective tests instructors can easily see the numbers of students who missed each question and the “wrong” answers they selected. With this information, instructors can learn precisely what concepts or skills should be re-taught and the likely causes of student confusion.

Student satisfaction is another measure of teaching effectiveness. Gretes and Green (2000) found that 90% of students believed practice tests helped them study for “real” exams. Thome (2000) used practice tests to encourage

preparation for class. Another group found practice tests to be a good review strategy (Kulik, Kulik, & Bangert, 1984). On both mid-term and end-of-semester evaluations, my students have indicated that they like taking daily practice tests and find them beneficial. In response to the question “What does your instructor do in this class that helps you learn?” the option “class discussion/lectures” is ranked as most helpful while “practice tests” is listed second. Students usually answer “excellent” to questions about “Instructor’s interest in whether students learn.” My most recent student evaluations averaged 4.9 out of 5.0.

An unintended consequence of practice tests is that students exhibit less hostility during discussions following the return of major exams. A student may say a test question was “tricky”, but other students will typically say things like “There was a similar question on a practice test.” One of my students recently wrote on an anonymous evaluation: “Your test questions are straightforward for any student who has read the chapters, comes to class, and has participated.”

Summary Daily practice tests improve student learning and course grades by encouraging students to do reading assignments in advance of class meetings. Such tests also encourage students to come to class on time while increasing student test-taking skills and defusing post-exam hostility. Devising practice tests helps instructors clarify their course goals, better coordinate relationships between reading assignments and class discussion/lectures, and hone their test-writing skills.

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Using Student-Centered Assessment to Enhance Learning

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For many years now, postsecondary educators have utilized a variety of student-centered learning methodologies to enhance student learning. (DeBoer, 2002; Norte, 2005; Scott & Buchanan, 1998). Unfortunately, many instructors who incorporate these approaches often use assessment methods designed for traditional teaching. Research shows, however, that assessment methods should also be student-centered (Ma & Zhou, 2000). Indeed, one can hold students to higher performance standards when they play a role in establishing assessment criteria that are clear and reasonable (Shepard, 2000). To be considered student-centered, the assessment technique should directly involve students in examining their own cognitive development by having them focus on learning first and the grade second (Pedersen & Liu, 2003). Strategies should be engaging and interactive while incorporating sharing, trusting, teambuilding, reflecting, helping, and coaching (Pitas, 2000). Thought must also be given as to whether student-centered assessments are individual, team-based, or a combination of the two.

Examples As examples of student-centered assessment, let us look at how two courses been implemented. In the course Introduction to Hospitality and Tourism Management at Paul Smith's College (Jacobs, La Lopa, Sorgule, 2001) and the senior capstone course Tourism Business Feasibility Studies at Purdue University (La Lopa, 2004) students were required to utilize a team-based structure in the

classroom to comprehend, synthesize, apply, and evaluate the course content while developing a tool to help establish their own grades.

The student teams in the introductory course developed two summative assessment tools during the semester (as part of a larger, overall assessment strategy which the teacher had planned). They created and implemented an exam which was used to evaluate their overall learning in the course as well as a tool to evaluate the contributions made by everyone involved. The instructor introduced students to the basics of legitimate exam development, various examination models, and test question development exercises. When the exams were administered, a rich dialogue regarding course materials and content ensued. The students enjoyed the challenge of the assignment so much that they requested the chance to develop another one. In the capstone course, the student teams worked on a semester-long feasibility project for the local Convention and Visitors Bureau to create a marketing campaign designed to attract tourists to the area. The student teams presented their ideas to a panel of industry experts at the end of the semester. The presentations were then graded by the panel members using an assessment tool created by the students.

In creating the tool, students were required to work through all six of Bloom's (1956) cognitive domains to learn about and develop higher order thinking. In another team-based approach, students read any assigned chapters they like as long as all are covered by the team. Members from each team are then asked to present their understanding of the chapter to the rest of the class, in any creative or traditional way they like, so that the students and instructor can openly assess what was learned. The instructor uses this feedback to determine whether or not the students have read the chapter, synthesized the information, and applied what was learned in the context of their assignment.

Challenges/Obstacles One of the challenges of adopting student-centered assessment strategies is students' misconception about what it is (Hewitt-Taylor, 2001). The teacher needs to orient students to the learning and assessment methodologies so that they understand the reason student-centered approaches are being used with intended benefits clearly articulated. In addition to getting students excited

about innovative education, this helps deflate the common complaint that the teacher is not teaching anything, in the traditional sense.

Another challenge is related to whether or not one's peers are engaging in innovative assessment approaches as well. "Lone wolf" reformers may experience more difficulties than successes.

According to Huba & Freed (2000), the lone reformer may wind up distancing him or herself from the other faculty members; confusing students who have their own ideas about how they should be taught; or finding out that student-centered assessment is harder than previously imagined, especially when implementing it for the first time. With regard to student challenges, there were some students who took advantage of the assignment by not doing their fair share of the work. Also, the Purdue students balked initially at being required to develop the assessment tool, mostly because they had never done it before.

A final challenge is addressing the concerns of those who contend that taking class time to develop student-centered assessment somehow detracts from the content of the course. If done properly, however, class time development is a necessary prelude to deeper learning. Indeed, a greater danger is not spending enough time. Such under-preparation can cause frustration and disorientation among students who are accustomed to organized learning environments (Brush & Saye, 2001).

Advice The best advice for those who might want to create a student-centered assessment is simply to pilot one. One way to approach it is to use a continuous improvement tool developed by Deming (1982) known as Plan, Do, Study, Act (PDSA). A meta-assessment tool, PDSA helps determine if a given assessment is effective. With PDSA, the teacher must first Plan the means by which to develop a student-centered assessment activity and reflect upon its potential benefits to the student.

The next step is to Do the assessment exactly as planned. Once the assessment has been piloted the next step is to Study whether or not it provided the intended benefits to the students. The teacher then Acts on what was learned in the Study step before using it again. For example, if the student-centered assessment activity delivered the

intended benefits to the students, the teacher might implement it again for the next class, or add another one like it to the assessment repertoire. Conversely, if the pilot version had problems, the teacher would make the appropriate adjustments before implementing it a second time via Plan, Do, Study, Act.

The second and third pieces of advice are to inform the department chair and to identify others in the department who already incorporate or who might be open to experimenting with similar methods. Meeting with the chair to explain the reason for adopting student-centered assessments may help him/her defend (or so it is hoped) the newfound pedagogy should colleagues and students question or complain about the change. Identifying peers on campus, or even on other nearby campuses who employ similar pedagogies, will also provide a sounding board and a support network to sustain one's efforts to put students increasingly in charge of assessing, and thus guiding, their own learning.

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