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Google No More: A Model for Successful Research

By *Billie E. Walker, Penn State Berks*
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What percentage of research papers that you now grade have only Internet citations? Yes, I know, way too many. Brace yourself, because this trend is not going to change anytime soon. Google is now the search engine of choice for many students. Left to their own devices, students collect information indiscriminately on the free Web and hand in papers and projects with works-cited pages that look like the greatest hits of Google. However, the situation is not hopeless. Faculty can insist that students base their

research on what I term the **resource trifecta**.

The resource trifecta includes the traditional pillars of the library: books, articles, and digital and Web-based resources. These three pillars do share some areas of overlap. In recent years, for example, books have begun to be published in digital format and are available via the Web or other electronic devices. Other examples include e-books, Web-based encyclopedias, and other subscription resources.

Articles (newspapers, magazines, and journals) are becoming increasingly available to students through library-sponsored, Web-based subscriptions to period-

ical services such as ProQuest, LexisNexis, and others. Access to these resources is paid for by the university or college, ergo by tuition dollars, which few students seem to realize. These premium services, which frequently represent the core of our focus in library instruction, offer quality and reliably edited information.

Alas, this quality information is often ignored by students who are more likely to rely on popular search engines such as Google or Ask Jeeves to pull up the top-ranking hits on their research topics. Examples of the type of resources pro-

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Capstone Courses Prepare Students for Transition

Much attention continues to be directed at those first-year experiences in college. As important as that time is during a student's tenure in college, it's not the only portion of a student's career to which attention should be directed. True, seniors are no longer likely to drop out of college, but they face a transition just as compelling as the one that brings them from high school to college. They are about to depart from college to professional lives. It is a time for reflection, integration, and closure.

Some of this reflection, summary, and ending happens inevitably, but all of it can be expedited by a capstone college course experience. The article referenced below includes a list of 10 goals others have proposed for capstone courses. As this sample illustrates, these goals, if accomplished, can effectively end a college career and

begin a professional one.

- Promote the coherence and relevance of general education.
- Promote connections between general education and the academic major.
- Foster integration and synthesis within the academic major.
- Explicitly and intentionally develop important student skills, competencies, and perspectives that are tacitly or incidentally developed in the college curriculum.
- Improve seniors' career preparation and preprofessional development, that is, facilitate their transition from the academic to the professional world.

A survey of capstone courses summarized in the article referenced below found that capstone courses most often integrated and synthesized content within the academic major, according to student reports.

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- We are interested in a wide range of teaching-learning topics.
- We are interested in innovative strategies, techniques, and approaches that facilitate learning and in reflective analyses of educational issues of concern.
- Write with the understanding that your audience includes faculty in a wide variety of disciplines and in a number of different institutional settings; i.e., what you describe must be relevant to a significant proportion of our audience.
- Write directly to the audience, remembering that this is a newsLETTER.
- Keep the article short; generally between 2 and 3 double-spaced pages.
- If you'd like some initial feedback on a topic you're considering, you're welcome to share it electronically with the editor.

The *Teaching Professor* (ISSN 0892-2209) is published monthly, except July and September, by Magna Publications, Inc., 2718 Dryden Drive, Madison, WI 53704. Phone: 608-246-3580 or 800-433-0499. Fax: 608-246-3597. E-mail: custserv@magnapubs.com.

One-year subscription: (U.S.) \$79. Outside the U.S.: \$89. Discounts available for multiple subscriptions (please call for price quotes). Periodicals postage paid at Madison, WI. POSTMASTER: send change of address to *The Teaching Professor*, 2718 Dryden Drive, Madison, WI 53704. Copyright © 2006, Magna Publications, Inc.

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Reflection in the Context of Learning

What is reflection in the context of learning, and what does being able to do it accomplish? The interest in reflection began (as did so many educational topics) with Dewey, who described reflection as a two-stage process beginning with doubt, hesitation, being perplexed, and the experience of having difficulty explaining something to oneself so that it makes sense. To resolve that dissonance, the learner seeks new ideas or experiences that will resolve the doubt, settle the perplexity, or remove the difficulty. Researchers who have studied the construct have built on Dewey, but they haven't changed his basic depiction. The researchers (citation below) who conducted this analysis summarize current thinking this way: "It is clear that an important outcome of this exploration and internal examination process is changing one's perspective as new information and experiences are encountered." (p. 252)

Reflective learners are able to learn from and through their experiences. They are better decision makers because they understand how an open mind leads to this process, which results in better, clearer, deeper, and more accurate understandings. The ability to reflect is frequently equated with wisdom. It sets one up for lifelong learning.

Some research (citations in the article referenced below) positions reflection and nonreflection at opposite ends of a continuum and then marks four distinct places along that continuum.

Habitual Action—Here learners give minimal thought. They treat specific tasks as unrelated activities. They tend to learn by memorizing, a strategy that embodies not being reflective.

Understanding—Here learners work to comprehend something, but that learning is not related to personal experience or to other learning situations. The moniker "book learning" captures the sense here—someone knows the material but what has been learned "stays within the boundaries of preexisting perspectives." (p. 253)

Reflection—At this point learning is related to personal experience and to existing knowledge. Assumptions are challenged, alternatives sought, and areas for improvement identified. Learners are actively engaged with the material. The learning that results here is deep learning.

Intensive Reflection—At this other end of the continuum, learners are aware "of why they think, perceive, or act as they do." (p. 253) Here the reflection stimulates a change in personal beliefs. Learners take action.

In this study of 220 graduates of an MBA program, researchers revised a previously developed instrument that measures reflective learning. Using it with this population, they were able to demonstrate that when students were at the habitual action or understanding levels, they perceived the quality of their learning experiences in this MBA program to be less than those students at the reflection or intensive reflection levels. The research also showed that both faculty-student and student-student interactions were positively related to perceptions of the learning experience. This finding caused the researchers to recommend that instructors "encourage student questions and comments, allow doubt and disagreement within learning, and create an atmosphere that allows students to be open about their views." (p. 259)

The article includes a table that lists the various survey items. They operationally define reflective learning and could be used by an instructor to make his or her students more aware of their learning and whether they are confronting themselves with the implications of the new ideas, information, and experiences they are encountering in college.

Reference: Peltier, J. W., Hay, A., and Drago, W. (2005). The reflective learning continuum: Reflecting on reflection. *Journal of Marketing Education*, 27 (3), 250-263. 🍀

Interviews: A Module That Removes the Mystery

By J. D. Wallace, Lubbock Christian University
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Students complain of being negligibly prepared for the interview process. After talking with mine, I realized that they were not missing the more technical skill sets such as resume development, dressing for success, or researching companies. They could garner those from any of a number of online vendors, books, or magazine articles. They were missing multiple experiences in an interviewing format. They desperately needed to have the mystery and uncertainty that surrounds the process removed. Practice with resume preparation or company research does not put you on familiar ground in a selection interview. So I created a micro-interview module that addresses these critical issues.

To start the exercise, I pair students up. If there is an odd number, I set up an observer chair and have the observer write down five things noticed in the interviews. I rotate observers after every pair of interviews.

Then I tell students to take a minute to think about the job they want to apply for as well as their personal strengths and weaknesses. Afterward, I assign one student to be the interviewer and the other to be the interviewee. The interviewers need to have pieces of paper (interview logs) that their interviewees must sign. Interviewees must write their names and the jobs that they are applying for. This helps keep the interviewees straight in the interviewers' minds.

Then I ask the class to listen carefully to these instructions: Interviewers will not ask questions but should listen carefully to responses because they will be asked to evaluate the candidates later. I will ask the questions, but answers should be directed to their partners. They will have only a small amount of time to answer, and then we will move to the next question. Generally I allow the first interview to go a little longer to familiarize students with

the process. I begin with the first query: "Tell me a little bit about yourself." After about two minutes or when the class discussion seems to wane, I have them finish up that answer and then respond to this question: "What do you think is your biggest asset?" Using the same procedure, I follow with these questions: "Everybody has liabilities. What are some that you struggle with?" And, "What makes you different from everyone else applying for this position?"

After the last question, I ask the participants to switch roles. The whole process is repeated for the second interview. When both interviews are done, I ask students to tell their partners one thing that was positive and one thing that might help their interview responses. After about a minute of discussion, interviewers are asked to sit with someone they have not interviewed.

In subsequent interviews, I shorten the time allotted for answers to between 60 and 90 seconds. My goal is to have students involved in many different interviewing situations. In a 60-minute period that could be as many as eight, and there is still time for a 10- to 15-minute debrief at the end of the period.

After the process is over, I ask students if these interviews were valid. Generally, there is a resounding no! I then tell them they are absolutely correct, but I also let them know that research raises questions about the validity of most "real" interviews. Next, we discuss how many of them had the same positives in multiple interviews. Negatives? Generally a number of students received consistent feedback across their interviews, and they now have critical areas to help them improve.

We debrief each question and explore possible answers. The "tell me a little bit about yourself" responses should be short, well-crafted stories of how instances in their backgrounds, schooling, and upbringings have prepared them for the job. The "biggest-asset" question helps the student articulate and discuss his or her strengths. It is at this point I ask, "If the

interviewer was using the biggest-asset question to assess maturity, how did you do?" The sheepish grins generally indicate that some students did not do well. The liability question demonstrates a degree of objectivity in the interviewee. Next, it allows the interviewee to articulate weaknesses and develop reasoning why it does not disqualify him or her for the job. Lastly, it puts the company on notice of limitations that it is buying with the interviewee. Suppose the interviewee tells the interviewer that one possible weakness is that he or she will put in a 40- to 50-hour week but will not work weekends. If that person is hired, it would be difficult for the company to fire him or her later for not working weekends.

There could be many variants on this module (e.g., let the students cast secret ballots for the best interviewee; add more complex assessment or other preparatory materials). Some design changes might even help make this classroom interview experience more valid. However, what this micro-interview simulation lacks in validity it makes up for in functionality. Students get numerous interview experiences within a compressed time frame, and they work on answers to some of the most common questions asked in interviews. They also get feedback. This module requires little preparation for either the professor or student. It can fit within most curricula, and some students have commented that it is one of the most useful experiences that they have had in college.

Learning for the Sake of Learning

The book referenced below is about the achievement gap in education, the sad fact being that despite widespread concern and many attempts to address the problem, whites educationally outperform other ethnic groups, whether the measure is graduation rates from high school, SAT scores, or a host of other objective criteria. What's interesting about this book is what author Mano Singham, a physics professor, proposes as the solution: **Good teaching can close the achievement gap.** The book takes and offers support for the position that "good teaching is a tide that lifts all boats by *unequal* amounts. It has a disproportionately positive effect on under-achieving groups, thus closing the gap." (p. 97)

Singham does admit that his conclusion is obvious—so obvious some will think that it's not even worth stating. His point is that we do not act as if it were obvious. If we truly believed in the importance of good teaching, then efforts to develop teachers would be at the forefront of educational reform efforts.

Even more interesting is Singham's critique of current teaching and why it so regularly fails students. Learning, "one of the purest forms of enjoyment anyone can

have," has become nothing more than a chore for students. "In the classroom and schoolhouse, the places where one would think people would get the most enjoyment from learning because of the focused attention on it and the ready access to learning materials, people, and other resources that can facilitate the learning process, that sense of enjoyment seems to disappear to be replaced by a numbing sense of routine administered in an atmosphere of coercion." (pp. 5–6)

The teacher's role metaphorically equates with that of the gardener. "I like this metaphor because I believe learning is an inherently voluntary act, and you can no more force students to learn than you can force a plant to grow. . . . All a gardener can do is create those conditions in which plants flourish. A good gardener understands the nature and needs of the plant." (p. 102) And from that knowledge of the plant comes the power to influence its growth in significant ways.

But good gardeners don't try to persuade a plant to grow. They don't cultivate growth by enforcing tough rules. Teachers, on the other hand, often tell students to learn and even force them to go through the motions—show up for class, take notes

during lectures, answer when called on, and turn in assignments when they are due. Growth and learning may occur under required conditions, but there is no love in this learning, and what knowledge may have been acquired is not likely to be retained.

So the solution advocated here is teaching that makes students want to learn. "If we are to make any serious dent in the problems of education, we have to learn how to make learning interesting for everyone, not just for the few (like us) who happened to stumble onto this secret." (p. 105) Does this sound hopelessly idealistic? Can you imagine students choosing learning over watching TV or hanging out with friends at the mall? Singham thinks we underestimate student interest—that the lack of love for learning is not an indication of disinterest but rather a testimony to poor teaching.

This book does address the achievement gap at all levels of education. It's not just a book for college teachers. It is an enormously thoughtful critique of education, buttressed with lots evidence and compelling anecdotes. The book is warm-

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GOOGLE

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duced by these search engines range from the ridiculous to the sublime; the good, the bad, and the ugly; anything from a site touting the first male pregnancy (www.malepregnancy.com) to a reputable site on cloning from NewScientist.com (www.newscientist.com/channel/sex/). The range of subject coverage and educational quality on the free Web has been well documented, and this free Web is where the average Joe often begins and ends his research efforts.

When faculty require that their students use various resources and provide specific guidelines, the content of those

students' papers is better. So it seems to me that faculty should give specific guidelines for resources and expound on the advantages of drawing upon a wide variety of information resources in different formats. Students must learn that not all information is created equal.

To reinforce this message and to support students' efforts to find better resources, consider asking your librarian to teach a library instruction session. Do not let students (especially beginning ones) off the hook when they tell you they know how to access and use library resources. A study by Constance Mellon demonstrated that 75 percent to 85 percent of undergraduate students found that their initial library research experiences caused anxiety.

Librarians can help teach your students how to evaluate free resources on the Web, which subscription databases to use and when, the intricacies of combining keywords with Boolean logic, and how to narrow and reformulate search strategies.

Limiting the research to only print or only digital resources often gives student researchers only part of the picture, providing inadequate support for their projects. To perform successful research, today's students need to employ the resource trifecta approach. They should gather information from books and articles, whether they are online or in hard-copy format, **and** students need to use digital and Web-based resources.

Conversations About Grades: Realistic Expectations

What instructor has not been stressed and disappointed by a student with a grade issue? So many students seem so ready to blame their poor performances on everybody and everything else. It's as if they have no responsibility at all for the grades they have received. And then there's the student who debates an answer and in the process seems genuinely interested in the content. But the truth comes out as the conversation concludes: "Well, do I get credit for this answer or not?"

Clearly there are no easy answers or simple solutions that reliably make conversations about grades constructive learning experiences. And there are not any contained in the research referenced below. However, this study does offer some insights that can help an instructor better understand and be more realistic about grade conversations with students.

Don't harbor any illusions about the primary goals of these conversations. Researchers hypothesized that students might have one of three goals for the conversation. They might be interested in **learning**, as in better understanding the material or the reason why they did so poorly so that future performances might improve. Or, students might have the goal of **persuading** the instructor to change the low grades to higher ones. Here the conversation is one of negotiation as the student tries for more points or a grade-level change. Finally, the goal for students may be **fighting**. Because students are often emotionally involved with their grades and experience frustration and anger when they receive low ones, they may decide to vent their feelings to the instructor.

A sample of 234 students were asked to "consider a recent conversation in which you talked with one of your instructors about a grade on an assignment that you felt was lower than you desired." Among other things, they were asked to describe that conversation, identify their goals for it, and say what they thought caused the grade and whether they were satisfied with the outcome of the conversation.

As for their goals, 66 percent had "per-

suading the instructor to change the grade" as their primary goal. Only 9 percent stated learning goals and 8 percent reported goals that equated with fighting. Another small category of students reported goals that related to impressing the instructor. Consistent with these goals, students reported outcomes related to whether or not the grades were changed. A surprising 41 percent reported that their grades were changed and so they were satisfied with the outcomes. Only 14 percent did not mention grades in their responses to an open-ended question about conversation outcomes.

These researchers also explored relationships between conversation goals and the causes to which students attributed their low grades. As might be suspected, this research confirmed that students who listed learning goals were most likely to attribute the causes to reasons within themselves, whereas students with fighting goals attributed the poor performance to causes beyond their control. Also, if students had the goal of persuading, fighting, or impressing, they were less polite and more likely to use messages aimed at causing the instructor to lose face. ("You were never explicitly clear" or "I think I was marked down a bit too harshly on this problem.")

Some of the practitioner literature suggests that grade conflicts can be avoided by sharing grading rubrics with students before they complete assignments, even giving students a role in creating those rubrics or otherwise letting them participate in the grading process. However, these findings do not lead to a lot of optimism about the effectiveness of these strategies or any others in decreasing the number of complaints about grades. "There were few students in this sample who had never had a conflict about grades." (p. 201) Students continue to be very grade-oriented.

Although this research did not report positive findings related to the goals students have for these conversations or the communication strategies they are inclined

to use to achieve their desired outcomes, it is helpful that an instructor be able to understand where a student is coming from in the conversation. Instructors should not respond emotionally even when students use strategies designed to impugn them. Who was to blame for the poor performance? Instructors are certainly not absolved of responsibility, but more often than not it is student behaviors that account for a less-than-lovely grade. Instructors also need to think clearly about when and under what conditions they change grades. And in any student-initiated conversation about a grade, the learning question is appropriate to ask. "So, have you learned anything through this experience that might be important to remember as you continue this course and your education?"

Sabee, C. M. and Wilson, S. R. (2005). Students' primary goals, attributions, and facework during conversations about disappointing grades. *Communication Education*, 54 (3), 185–204. 🍀

SAKE OF LEARNING

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ly written with Singham's passion and concern for education evident on every page. It is a book that could very profitably be read and discussed by a faculty reading group. It's a book that makes you want to talk teaching and revisit educational philosophy!

Reference: Singham, M. *The Achievement Gap in U.S. Education: Canaries in the Mine*. Lanham, MD: Rowman & Littlefield Education, 2005.

It is available online for \$24.95 (plus shipping and handling) at www.rowmaneducation.com. 🍀

The Last Class: A Time for Celebration and Ritual

Lots of classes end with more of a whimper than a bang. It's the end of semester, everyone's tired, lots of assignments are due, there's lots of work to grade, and final grades create stress for everyone. And so many last classes end perfunctorily. That's how Christopher Uhl described the ending of his 400-student, undergraduate environmental science course.

But his thinking and conduct of those last class sessions have changed. He has come to believe that it is important "to create space for the explorations of feelings during the final class meeting of the semester." (p. 165) Now when students arrive on that final day, high-energy hootenanny music greets them. It plays on as the instructor thanks students for taking the course and then writes the words **acceptance, gratitude, integrity,** and **hope** on the board.

Starting with acceptance, the instructor launches with a candid discussion of what he sees as mistakes he's made teaching the course. Then he invites students to consider questions like these: "Did you let yourself down in the course? How?" "Did you

ever hand in BS as opposed to honest work?" "Did you fail to realize your potential in this course?" Why questions like these? Uhl explains, "Students are accustomed to talking about what they don't like about a particular course or instructor, but they are seldom called on to consider what their displeasure says about them as learners." (p. 165) After time for reflection, students are invited to speak publicly about their disappointments, and some rise to the occasion. The goal is to accept what has occurred and commit to a different course of action next semester.

Students are then asked to consider what about the course makes them thankful. They are encouraged to be specific. It's fine to say "great lecture" but much more useful to say what it was about the lecture that made it great. This makes the exercise about more than just saying thanks. Making room for these expressions of **gratitude** extend both kindness and learning.

"By the time students complete my BiSci 3 course, they . . . have learned a lot about the world. So during our final class, I invite them to reflect on what they are

going to do with their new knowledge." (p. 166) With knowledge comes responsibility. Students need to be encouraged to take action based on what they know—it's a matter of **integrity**.

This class ends with a ceremony. The instructor expresses a **hope** for each group of students that have taken the course (starting with the class in 1996) and then rings a bell. Bells such as the school bell, the church bell, and the dinner bell call us to presence. When the instructor comes to the final class he invites students to express hope for themselves and each other. "In sum, I use my last class session to celebrate the shared humanity of our classroom community. There is no hiding behind platitudes. Students speak and tell their stories of failure, hope, gratitude, and intention. With the final sounding of the bell, I ring students out into the world, not as an assembly of letter grades, but as beings of intellect, heart, and spirit." (p. 166)

Reference: Uhl, C. (2005). The last class. *College Teaching*, 53 (4), 165–166. 🍀

CAPSTONE

FROM PAGE 1

In thinking about a capstone course currently offered in one's department or when contemplating the possibility of adding one to the curriculum, the special challenges involved in designing, presenting, and then assessing learning in these culminating courses should not be underestimated. Much like the introductory general education course, where a whole field must be overviewed for a less-than-captivated crowd, capstone courses must address different but equally challenging instructional realities. Typically courses in a curriculum are not well connected to one

another. Helping students integrate learning across courses so that they can see a field's coherence only happens if the teacher has broad content knowledge. It also requires sophisticated synthesis. Obvious as well, if they are to realize their objectives, these courses cannot rely on objective assessment methods such as multiple-choice exams. Students need to write, make oral presentations, and work with others on group projects. This adds to the design complexity, as well as the time that must be devoted to grading.

The lofty goals that capstone courses can accomplish make them worth the effort. We know how important first experiences in college are. We need a greater appreciation of how equally important a

final summarizing experience can be.

Ed.'s note: This article describes the process used by one accounting department to determine objectives, develop course content, select instructional methods, assign faculty, decide on class size, and develop course and program assessment techniques. Even if your department is not accounting, the article is valuable for its careful review of all an effective capstone course entails.

Reference: Jervis, K. J., and Hartley, C. A. (2005). Learning to design and teach an accounting capstone. *Issues in Accounting Education*, 20 (4), 311–339. 🍀