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Relationships with Students Are What Matter Most

By Patty Kohler-Evans and Candice Dowd Barnes, University of Central Arkansas
Pattyk@uca.edu and cbarnes@uca.edu

Over the last few years, much has been written about the need for and use of technology-based classes. A decade ago blended learning, synchronous and asynchronous teaching, Blackboard, and voice over Internet were not what we talked about when discussing how instructors share the knowledge students receive. Recently, there has been an emphasis on preserving the relational factors that make the interpersonal nature of college classrooms one of the most powerful experiences students have in postsecondary education. In our experiences, we have moved from teaching face-to-face to working in front of a computer with headsets to ditching the headsets in favor of classes taught in a totally asynchronous manner. We can see the advantages and disadvantages of all formats. With each new advance in technology, we have seen ourselves morph into those who teach in ways we never imagined. However, this article is not about mastering the instructional details of these new technologies. We want to revisit the importance of building and preserving critical relationships whatever way we deliver instruction. We want us all to remember why we all came to this profession and how our efforts to connect with students pave the way for the next generation of teachers, lawyers, doctors, and business owners. We offer three simple ideas for sustaining these powerful relationships.

Have a servant's heart

Ours is, after all, a profession characterized by giving. We give assignments, tests, and handouts and impart the things we know. We also give from our hearts and our minds, giving the gift of ourselves. We share our experiences and our lessons learned. We demonstrate and we sometimes pontificate. Most important, we give, and we can best do that by serving our professions and our students. When our students see and understand that our primary purpose is to serve, we help create the next generation of passionate, committed individuals who will in turn serve the generation after them. How do we serve? We serve through authenticity, through our full presence when we teach, through listening, and through being available to our students. Technology can sometimes complicate this, but as long as we remember that we are a profession of service, we will find ways to stay connected.

Share your passion

The word passion is defined as "an experience of strong enthusiasm." Witnessing the passion of another often ignites one's own flame. When we reveal how passionate we are for what we study and how much we care about the work we do with students, we can spread the fire. Who among us has not had that one or those two teachers who helped to bring their subject to life just by approaching it with great enthusiasm? How many of us decided to teach because we had a teacher whose passion set us on fire? Do students see that strong fire of enthusiasm in us? When we love what we do and honor our work with gusto, we connect with our students. They feel our dedication and devotion, and they respond with new levels of eagerness and excitement. What better ways are there to connect than by standing side by side with shared fervor? It does not matter what format we use, our zest for the work helps sustain our relationships.

Engage, engage, engage

As a result of the technological bombardment in our profession, students can access a world of new experiences. That is the great news. The not-so-great news is that our use of technology sometimes turns what should be a deep and mean-

PAGE 7 ☛

In This Issue

Cumulative Finals: There's Good Reasons to Give Them 2

Threshold Concepts: Portals to New Ways of Thinking 3

Student Engagement: What Is It? 4

Six Things That Make College Teachers Successful 5

Creative Assignments: Where Do They Belong? 6

Preparing for Comprehensive Finals 7

Student Journals: How Reflective? 8

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Editor-at-Large
Maryellen Weimer, Ph.D.
E-mail: grg@psu.edu

Editor
Rob Kelly
robkelly@magnapubs.com

President
William Haight
whaight@magnapubs.com

Publisher
David Burns
dburns@magnapubs.com

For subscription information, contact:
Customer Service: 800-433-0499
E-mail: support@magnapubs.com
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- Write directly to the audience, remembering that this is a newsLETTER.
- Keep the article short; generally between 2 and 3 double-spaced pages.
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Cumulative Finals: There's Good Reasons to Give Them

Finals that cover all the material presented in the course are decidedly unpopular with students. They much prefer exams that include one chunk of content at a time. But there are good reasons to make finals comprehensive. Consider these results from a recent study of psychology students.

The research team was interested in the short- and long-term effects of cumulative finals. To determine the short-term effects, they asked this straightforward research question: "Do students who have a cumulative final at the end of the semester score higher on a measure of class content knowledge than students who do not have a cumulative semester final?" (p. 176) To answer this question, they tested students' content knowledge in six different core psychology courses that included 13 sections of introductory psych and 25 sections of upper-division courses. The content exams used in the study were part of what the department uses as quantitative evidence of teaching effectiveness "to measure if students are retaining the most important material taught in our course by their instructors." (p. 177) The content exams were not part of the final and not included in the student's course grade. They were administered at the end of the course.

The finding: "[C]lasses taking cumulative finals performed reliably better than classes who had noncumulative finals." (p. 177) The mean score on the content exam in the introductory psych sections with a cumulative final was 76.66 (SD 4.01) compared to a 63.26 mean score (SD 6.82) in the sections without a comprehensive final. In the upper-division sections with a cumulative final, the mean score was 82.60 (SD 4.54) compared to a 72.19 mean score (SD 10.55) in those sections without a cumulative final.

As for the long-term effects, the researchers measured retention of course material up to three semesters after having taken the course. They had former students take online content exams for courses taken one, two, and three semesters previously. Given that these psychology majors had repeated exposure to course content, the effect of the cumulative exam was smaller, but it held for all three of the time periods. The researchers offer this general conclusion: "Regardless of type of course, students with cumulative finals did better on departmental content tests than students in courses with noncumulative exams. ..." (p. 180)

"As a result of these findings, we believe using cumulative finals improves student learning, and we encourage instructors to utilize cumulative finals in their courses." The recommendation is justified by another interesting finding: "[E]v en in our optimal study condition (immediate content exam administration in upper-division courses with cumulative finals) students only answered 82% of the content exam items correctly. In the worst condition (18 month time lag for introductory psychology courses with noncumulative finals), students retained just over half of the important information from introductory psychology." (p. 180)

Many instructors worry about using pedagogical methods unpopular with students. But good educational experiences aren't always about what students like. Most things are not learned well without hard work. This study did only involve psychology majors, but data were collected from multiple sections and analyzed appropriately. Moreover, this isn't the first or only study that supports the effectiveness of comprehensive finals when the issue is content retention. See another article in this issue that proposes ways of helping students better prepare for comprehensive finals.

Reference: Khanna, M. M., Badura Brack, A. S., and Finken, L. L. (2013). Short- and long-term effects of cumulative finals on student learning. *Teaching of Psychology, 40* (3), 175-182.

Threshold Concepts: Portals to New Ways of Thinking

Do you know what they are? "A threshold concept is discipline-specific, focuses on understanding of the subject and ... has the ability to transform learners' views of the content." (Zepke, p. 98) It's not the same as a core concept, although that's a useful place to first put the idea. "A core concept is a conceptual 'building block' that progresses understanding of the subject; it has to be understood, but it does not necessarily lead to a qualitative different view of the subject matter." (Meyer and Land, p. 4)

Meyer and Land were among those first to write about threshold concepts. They proposed the idea based on a round of interviews with economics faculty members. Since this early work, the idea of threshold concepts has been written about and researched mostly in Europe. In the early paper referenced below and available online, Meyer and Land offer what has become the classic definition: "A threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something." (p. 1) It results in the learner understanding, interpreting, or seeing something in a new way. "As a consequence of comprehending a threshold concept, there may thus be a transformed internal view of subject matter, subject landscape, or even world view." (p. 1)

Threshold concepts have five characteristics, according to Meyer and Land.

They are:

- **Transformative—**The change that results from understanding the threshold concept is significant. Meyer and Land use the adjective "powerful" to describe it. It can change how learners think about the discipline, about themselves, or about the world.
- **Irreversible—**These are not changes likely to be unlearned or forgotten. Meyer and Land use Adam and Eve as an example. The knowledge they acquired caused them to be expelled from the Garden of Eden. As they passed through the threshold from innocence, the landscape before them was totally transformed. Once the threshold concept is understood, that new knowledge makes it all but impossible to go back to former ways of thinking.
- **Integrative—**"Once understood, it enables students to knit dissimilar elements of a subject together." (Zepke, p. 100) Students suddenly get the large picture. They see how details or a set of ideas fit together. Suddenly a whole variety of things make sense.
- **Bounded—**Thresholds border with other thresholds, and those boundaries and frontiers come to define disciplinary areas and academic territories.
- **Troublesome—**Here Meyer and Land defer to the work of Perkins, who previously explored the idea of troublesome knowledge. Threshold concepts, Meyer and Land claim, are troublesome in the sense that they are difficult for students to understand. Perkins defines troublesome knowledge "as that which appears counter-intuitive, alien (emanating from another culture or discourse), or incoherent." (quoted in Meyer and Land, pp. 5-6) They are not easily or automatically understood when first encountered.

The Meyer and Land article is filled with examples of threshold concepts, but because they are discipline-specific and presume some level of preexisting knowledge, they aren't all that easily understood. However, Blackie, Case, and Jawitz propose an example that is meaningful to readers of this publication: student-centered teaching. "Student-centered teaching is not just a different style of teaching. It requires that the academic really understands and appreciates the need to pay attention to the students and their learning. It involves a shift from measuring one's success as a teacher by how much of the syllabus is successfully covered to measuring one's success by how much students actually learn and with what depth of understanding. This requires the academic to be invested in the learning of the students, rather than in the transfer of information, and to be concerned about the actual process of learning happening in the students." (p. 638)

Those of us who have made the transition from teacher- to learner-centered instruction have changed significantly. I often say that I hardly recognize the teacher I have become. It's also an irreversible change. I cannot imagine going back to teaching the way I did before. But student-centered teaching is a troublesome concept; many teachers have not crossed the threshold.

Meyer and Land suggest that students understand threshold concepts through dialogue. Moreover, "[d]ialogue about threshold concepts enables content experts to explore ways of helping students understand a difficult subject. ..." (p. 100) It's an interesting construct that does resonate. We can all identify those concepts that, if understood, open our disciplines to learners in new and powerful ways. If the threshold concepts of a discipline are known, then we are in a stronger position to discuss instructional strategies and approaches that help students find their way through the threshold to these new understandings.

References: Blackie, M.A.L., Case, J.M., and Jawitz, J. (2010). Student-centeredness: The link between transforming students and transforming ourselves. *Teaching in Higher Education, 15* (6), 637-646.

Meyer, J. and Land, R. (2003). Threshold concepts and troublesome knowledge: Linkages to ways of thinking and practicing within the disciplines. (available at: *www.etl.tla.ed.ac.uk/docs/ETLreport4.pdf*)

Zepke, N. (2013). Threshold concepts and student engagement: Revisiting pedagogical content knowledge. Active *Learning in Higher Education, 14* (2), 97-107.

Student Engagement: What Is It?

Student engagement is one of the most widely used terms in higher education these days. What it describes is positive, something that benefits students, courses, departments, and institutions. It's also something we think we can measure, which many institutions have via the well-known and widely used National Survey of Student Engagement, or NSSE, as it's most often called. But like so many popular descriptors, the more it's used, the wider and looser its definition becomes and the more confident we are that everybody is talking about the same thing. We no longer bother with definitions. Perhaps it's time to pause and reconsider what student engagement actually means.

When the term first emerged, it was "seen as an evolving construct that capture[d] a range of institutional practices and student behaviors related to student satisfaction and achievement, including time on task, social and academic integration, and teaching practices." (p. 759) Some of the definitions offered then were simple and straightforward: student engagement is "the time and effort students devote to educationally purposeful activities." (p. 759)

But student engagement is actually a good bit more complicated than these definitions would seem to indicate. Kahu, in the article referenced below, identifies and explores four "distinct approaches to understanding [student] engagement." Each is highlighted briefly here and explored in much greater detail in Kahu's article.

The Behavioral Perspective, which Kahu says is the most widely accepted view of engagement, emphasizes student behavior and teaching practices and is exemplified by the NSSE instrument. Kahu identifies a number of empirical questions that have been raised about the instrument, including some related to the validity of student responses to certain items. Other research has shown that students struggle to define terms such as "thinking critically and analytically" and so how would they accurately know if they are? Also the NSSE instrument is used across disciplines, and teaching and learning do vary across fields. Finally, although the behavioral perspective does measure students' thinking processes as well as their behaviors, it does not address the emotional aspects of learning. Based on her analysis, which does include a delineation of the perspective's strengths, Kahu concludes, "[D]ue to its development as a tool for institutional improvement and comparison, the definition of student engagement within the behavioral perspective is limited and unclear." (p. 760)

The Psychological Perspective sees student engagement "as an internal psycho-social process that evolves over time and varies in intensity." (p. 761) Said another way, from this perspective, engagement is positioned within the individual. It is seen as having four dimensions: behavior, cognition, emotion, and conation or the will to succeed, which makes this a more integrated perspective. However, the problem, which Kahu calls a key limitation, is that researchers have not clearly differentiated between these dimensions. When engagement has been measured from the psychological perspective, the results have been inconsistent. Kahu lauds the inclusion of the affective dimension—there is an emotional intensity associated with learning—but she sees the strong individual focus as "downplaying the critical importance of the situation. Engagement is fundamentally situational; it arises from the interplay of context and individual." (p. 763)

The Socio-Cultural Perspective focuses on "the impact of the broader social context on student experience." (p. 763) Some theorists working out of this perspective look at the opposite of engagement, which they say is alienation. Students often experience something akin to "culture shock" when they first start college. This is particularly true of nontraditional students, first-generation students, and students whose ethnicity is not that of the majority group. They are described as "not having the necessary social, cultural, and academic capital to easily fit into the university culture." (p. 763) This perspective offers ideas as to why students become engaged or alienated.

The Holistic Perspective tries to integrate the various other perspectives. Some theorists here see engagement as a "dynamic continuum with different locations (task, classroom, course, institution), and thus not measurable by surveys but best understood through in-depth qualitative work." (p. 764) In the holistic perspective, engagement is both a process and an outcome. Institutions should be "engaging students," the process, and the outcome should be "students engaging."

Kahu writes that all these perspectives offer useful and relevant insights that deepen our understanding of student engagement. She concludes the article by proposing a conceptual framework that integrates these various perspectives. This work is theoretical, devoted more to directing future research than practice, but for those of us who hear the term at every turn, and who aspire to engage our students, it is a useful reminder that often what seems simple and easily understood is vexingly complex.

Reference: Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38* (5), 758-773.

Six Things That Make College Teachers Successful

By Mary C. Clement, Berry College, GA
mclement@berry.edu

Study the knowledge base of teaching and learning.

You have chosen to teach in higher education because you are a subject-matter specialist with a tremendous knowledge of your discipline. As you enter or continue your career, there is another field of knowledge you need to know: teaching and learning. What we know about teaching and learning continues to grow dramatically. It includes developing effective instructional strategies, reaching today's students, and teaching with technology. Where is this knowledge base? Books, articles in pedagogical periodicals, newsletters, conferences, and online resources provide ample help. Take advantage of your institution's center for teaching and learning or other professional development resources.

Accept all who enter the classroom door.

Much has been written about underprepared students who enter college. Since more students attend college now than ever before, it is only rational that some are not as prepared as we might expect. Institutions are dealing with this issue, but instructors must do some rethinking about how they teach, in order to meet the needs of all learners in their classrooms. Ungraded pretests and interest inventories can be used to see what your students already know about the content you will be teaching next. Students in all classes need help learning how to learn the material. You may not have imagined that you would be teaching how to learn vocabulary in your college courses, but that may be just what your students need. Above all, students should not be berated if they don't know things that weren't taught in high school. Accept students where they are and help them to go forward. They need a college education!

Plan for instructional management.

For decades, college instructors never thought of classroom management as something they had to plan, but times have changed and today's college students need to know what's happening.

For decades, college instructors never thought of classroom management as something they had to plan, but times have changed and today's college students need to know what's happening.

Posting a visual outline of what will be done during the class helps students follow the lesson and stay on task. Various aspects of teaching, such as distributing papers, taking attendance, and making time for students to ask questions, need to be part of course planning. Put policies in the syllabus about attendance, disturbances, cell phones, etc., and then review those policies with students. You set the tone of the class, and management procedures are needed.

Teach with a variety of strategies.

Study the literature and learn about approaches such as learner-centered teaching, guided inquiry, active learning, lecture, group work, and online discussion. Use what works best given your content and your students' learning needs. The best advice is to be visual, followed by keeping students actively thinking, writing, comparing, and applying new knowledge. Students learn more easily when they've been given the rationale for what they are learning, and when they understand why the teacher has chosen certain instructional methods and learning activities.

Use assessment to inform students of their achievement.

Today's students are used to checking their grades online so they know where they stand at any given time in the semester. Grading policies need to be clear and grading scales easy to use. Share your grading policy in writing on the syllabus and then show exactly how it works after the first big exam, paper, or assignment. Remind students that assessment is more than the assigning of a grade. Assessment helps them to understand their achievement and helps teachers meet their needs.

Keep the passion.

It is very easy to become disheartened by student complaints, lack of administrative support, budget cuts, and job insecurity. However, what is it that drew you to your discipline originally? For most of us, it was a true passion for the subject, a desire to learn all about it, and a further desire to then share that knowledge. In higher education, we have opportunities to learn, research, teach, and shape the future of our disciplines and influence the larger world through our disciplines. Successful college teachers recognize that many of today's college students have learning needs. Taking actions like these helps them to meet those challenges successfully.

Creative Assignments: Where Do They Belong?

Can you teach students to be creative? Most of us would say no. It's more like trying to teach for it—encouraging it, promoting it, acknowledging when it happens, and rewarding it. Despite the difficulties associated with teaching creativity, teachers shouldn't be excused from trying to cultivate its development. Is there a profession where creative thinking isn't needed? Is there a problem that wouldn't benefit from a creative solution? The authors of the article referenced below ask the follow-up question relevant to those of us in higher education: "Where will students get the opportunity to learn and practice creative thinking if it is not embedded throughout the curriculum?" (p. 51)

We tend to associate creativity and the thinking that produces it with the fine arts and performing arts, those places in our colleges and universities whose mission it is to cultivate creative expression. But authors Reynolds, Stevens, and West teach in professional programs (business and education, specifically curriculum and instruction, and educational leadership and policy), and they're promoting the use of creative assignments in those courses. "For students to be able to experience the power of their own creativity, the opportunity to do creative projects belongs across the curriculum." (pp. 51-52)

Here's a quick synopsis of the creative assignments used in a course where one wouldn't expect to find them—a 400-level management course, which the syllabus describes this way: "The nature of this course will be learning through experience. There will be an ambitious amount of entertaining reading. There will be a minimum amount of lecturing. There will be a maximum amount of activity-based learning resulting in close to unlimited opportunities for positive class involvement, contribution, and self-development." The final project in the course, worth 30 percent, including the presentation of the project and a written reflection describing what the student learned as a consequence of it, is a creative one. "Instructions are minimal; however, guidance is provided and opportunities to discuss options are plentiful." (p. 54)

The Educational Leadership and Policy course is Introduction to Research Methods, which involves the study of research methods and the development of a research proposal. Graduate students in this course write a poem that they use to help them identify what they are really interested in learning through the research and how they can measure what they want to study. The poem is worth 5 percent of the grade, and students read them aloud in a special class session.

The creative assignment used in the Curriculum and Instruction Action Research course is called a "creative expression." In it students "conceptualize their experiences in [the] course and create something that represents their experience learning action research. ..." (p. 56) Here, too, students present their projects, in this case on the last night of the course, and prepare a written account of the processes involved in developing their creative expression. This assignment is worth 10 percent of their grade.

What the students involved in these three courses reported about the value of these projects provides convincing evidence, especially given that most of the students' initial reactions to the creative assignments are negative. More than 35 percent rated the assignment as very valuable, and another almost 60 percent said it was valuable. In responses to open-ended questions, 25 percent said the assignment was most helpful in the new insights it generated and 23 percent made comments indicating that the creative assignment reinforced and deepened their understandings of course content. "This challenges the notion of some faculty that these projects pull students away from course content and do not contribute to student learning." (p. 58)

To develop creative assignments, the authors relied on the American Association of Colleges and Universities' definition of creative thinking. Their assignments "invited taking risks, encouraged innovative thinking, stressed connecting, demonstrated synthesis and transformation of course content." (p. 51) There's motivation for teachers to consider creative assignments too. These assignments are a lot more interesting to grade than most of the other kinds of work we have students produce.

Reference: Reynolds, C., Stevens, D. D., and West, E. (2013). "I'm in a professional school! Why are you making me do this?" A cross-disciplinary study of the use of creative classroom projects on student learning. College Teaching, 61 (Spring), 51-59.

Preparing for Comprehensive Finals

There are a couple of reasons why students don't like comprehensive finals. First, they're more work. Rather than four weeks' worth of material to know and understand, there's a semester or term's worth of content to deal with. However, the research highlighted in an article in this issue of the newsletter and more like it strongly supports that continued interaction with the content increases the chances that it will be remembered and can be used subsequently. Students also don't like comprehensive exams because most of them don't use good cross-course study strategies. They wait until finals week and then they start reviewing. Here are some ways teachers can help students develop and use study strategies that make preparing for and doing well on comprehensive finals easier.

In comments the teacher explains the educational rationale behind cumulative finals. They are not being used because the teacher wants to make the course hard. They are being given because research has shown that students remember course content longer and are better able to apply what they have learned. Moreover, the teacher is committed to helping students prepare for those exams throughout the course. And the teacher is open to student suggestions: what could be done in class, outside of class, or online that would help students effectively prepare for the cumulative final?

In class when new content relies on or relates to previous material, pause and let students recall or find that previous content. Where is it in their notes? In the text? How does knowing this previous material making understanding the new content easier? Obviously, this takes time and teachers may not be able to be this deliberate every time, but they can always tell students that there is a connection and they should be looking for it.

At the beginning of class quickly put students in small groups. Give them five (maybe more, maybe fewer) questions drawn from previous content. Let them find the answers. The first group to get all five answered correctly gets bonus points, treats, stars, or pats on the back. They get more of whatever's being given if they can also correctly say or list where the answer can be found.

At the end of class during those five minutes of summary time devoted to highlighting the day's content, take five more minutes, or if a summary really isn't needed, take the time to have students review notes taken on a previous day. "Everyone take a couple of minutes and look at your notes for October 23. What are the key ideas you have in your notes?" "What do you have about X in your notes?"

Instead of a quiz, students prepare a potential exam question on material covered during the last two weeks. Their questions are submitted before class, and if the teacher finds five potential exam questions, those are posted on the course website. Students who come to class get quiz credit (without having to take a quiz), and each student who authored one of the five questions posted gets a bonus point.

There are lots of variations here. Students can be given the option of submitting potential exam questions anytime during the course. If any of those questions ends up on the final, the student author should get the question correct and maybe get a bonus point.

There is merit in having students write potential exam questions. It's a good review strategy, and it gets them thinking about questions, not just trying to memorize answers. They don't write good test questions automatically, which means some resources might need to be made available online, and samples of good questions compared with not so good questions might need to be discussed in class.

On quizzes and exams, include a designated number of items that ask about content from previous units. To reinforce the importance of these questions, perhaps make them worth an extra point or offer additional bonus points for getting them all correct.

In study groups, which the teacher can encourage students to form, the group could be given a chunk of content and tasked with preparing a study guide (including study questions) on the material. These study guides could be distributed to other students in the class. This could be a course assignment or an extra-credit option.

Relationships

FROM PAGE 1

ingful discourse into a line or two of text on a screen. The art of engagement is sometimes hard to maintain with so much competition for our senses. Just as the notions of service and passion must be a part of who we are, engagement adds the frosting to the cake. Drawing our students into the conversation with guiding questions, attentive listening, and carefully chosen instructional methodologies ensures that we keep them on the journey with us. Being mindful of our students' needs as well as their aspirations, we must continuously work to present them with deeply engaging, relevant, and meaningful work.

Summing it up

The role of technology in teaching and learning has already been a subject of much debate, and as new possibilities emerge, we expect the exchange of ideas and viewpoints has just started. As we continue to debate how to best reach students, the relationships between faculty and students must be cultivated and preserved. By approaching our work with a servant's heart, sharing our passions, and continuously striving to keep our students engaged, we can remain focused on what keeps students and teachers connected in ways that promote learning and prepare professionals.

Student Journals: How Reflective?

Many faculty seek to encourage students to reflect—to consciously think about what they are learning and sometimes about how they are learning, or as John Dewey defines it in How We Think, "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends." The goal of reflection is to promote the kind of deep learning that connects students with content so that they not only understand it but also see its relevance.

In some journaling assignments, students respond to the reading, often answering a set of teacher-supplied prompts. In other assignments they may be reflecting on a course activity, say their work with others in a small group, or they may be writing about what they observe, say during an internship experience. They may be reflecting on the skills observed in others or the skills they find themselves using or working to develop.

But just how reflective is that journal writing? Are teachers providing enough structure in the assignment? When a grade is involved, are students really reflecting or describing reflections they think teachers want them to make? Those kinds of questions were what motivated two researchers to look at and try to integrate research on the quality of reflection found in student journals. They looked at articles published between 1995 and 2006 and found 11 studies that met their inclusion criteria.

The studies reviewed approach the quality questions in very diverse ways. Some researchers assessed the student journals once and others on multiple occasions with attempts to note trends over time. Different methods of analysis were used as well. In some studies multiple reviewers looked at the journals; in others they were read by one assessor. Some assessed the journals using quantitative methods; others used more qualitative approaches. The journals were approached via a diversity of theoretical models, including eight mentioned in the article. The researchers summarize, "Our review reveals little to no consistency in the research community around the mechanisms and process of assessing levels of reflection in student journals." (p. 81) And as might be suspected given this inconsistency, the quality of reflection reported in the studies varies considerably.

Using a process described in the article, five out of the 11 studies report low levels of reflection. For example, in one study where 880 journal entries were evaluated, 74 percent of the entries were written at the lowest three levels on the Bloom taxonomy. Four of the 11 studies reported what the authors designated as moderate levels of reflection, and two of the 11 studies reported high levels of reflection, with 78 percent of preservice teachers writing at "highly reflective" levels in one of those two studies.

The authors acknowledge the potential of reflective journals. "Reflective journals require students to engage in critical reflection and higher order thinking; they force students to be more open-ended and less prescriptive; and they permit students to be creative and questioning." (p. 92) They proceed to identify a number of important issues regarding the use of reflective journals that have not yet been studied. Does it make a difference if journals are optional or required? Does it matter how much they count in the overall grade calculation? How often should students be writing in their journals? Do reflective skills develop when they write more? Does training and support deepen the level of reflection in journals? What about the structure of the assignment and instructions that accompany it? What kind of teacher feedback promotes more and deeper reflection? Does the kind of relationships students have with teachers influence the kind and depth of reflections they share? All these questions matter when considering the details of an assignment that calls for reflective journaling.

The research examined "presents an unclear picture of the quality of reflection found in student journals." (p. 94) That's not a particularly helpful finding, but it does make clear that assignments calling for reflective writing in journals do not automatically produce those results. It also makes clear that if faculty are using these assignments, they need to look at the writing in journals in some systematic way to ascertain the level of reflection.

Reference: Dyment, J. E. and O'Connell, T. S. (2011). Assessing the quality of reflection in student journals: A review of the research. *Teaching in Higher Education, 16* (1), 81-97.