

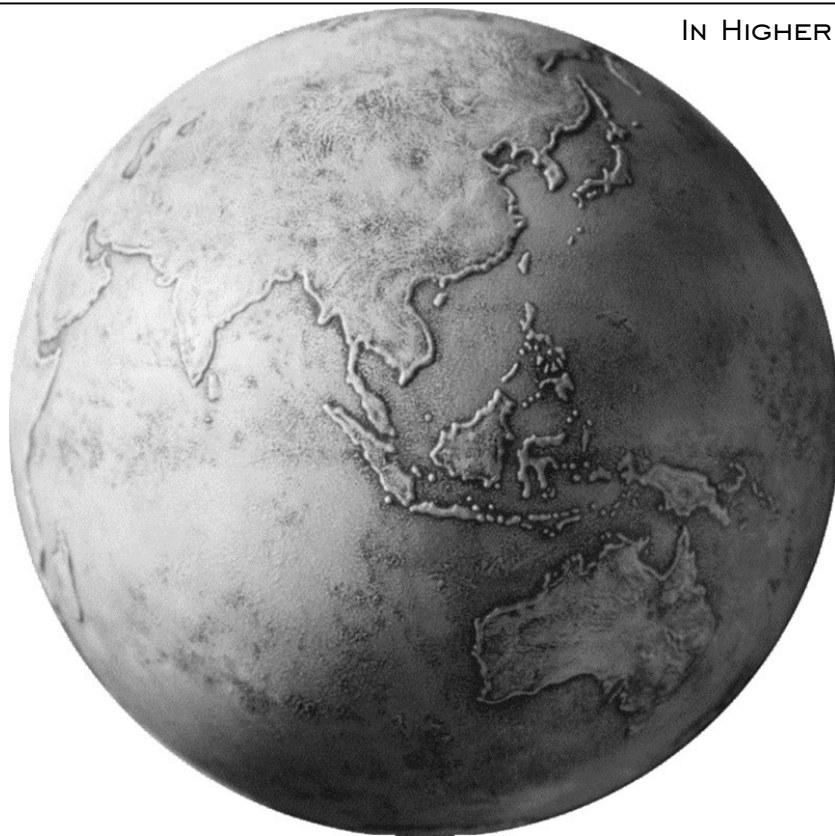
ISSN 1812-9129

Volume 17 • Number 1 • 2005

INTERNATIONAL JOURNAL OF

TEACHING & LEARNING

IN HIGHER EDUCATION



A Publication of the
International Society for Exploring Teaching and Learning

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The International Journal of Teaching and Learning in Higher Education (ISSN 1812-9129) provides a forum for the dissemination of knowledge focused on the improvement of higher education across all content areas and delivery domains. The audience of the IJTLHE includes higher education faculty, staff, administrators, researchers, and students who are interested in improving post-secondary instruction. The IJTLHE is distributed electronically to maximize its availability to diverse academic populations, both nationally and internationally.

All manuscripts submitted to the IJTLHE should be in accordance with the journal's purpose - to encourage the study, development, application, and evaluation of higher education pedagogy. All manuscripts are refereed (blind) using a peer-review process involving at least two reviewers. The review process typically takes approximately one month.

Finally, the IJTLHE is a publication of the International Society for Exploring Teaching and Learning (ISETL). The mission of ISETL is to encourage the study of instruction and principles of learning in order to implement practical, effective methods of teaching and learning; promote the application, development, and evaluation of such methods; and foster the scholarship of teaching and learning among practicing post-secondary educators.

Submissions

The focus of the International Journal of Teaching and Learning in Higher Education is broad and includes all aspects of higher education pedagogy, but it focuses specifically on improving higher education pedagogy across all content areas, educational institutions, and levels of instructional expertise. Manuscripts submitted should be based on a sound theoretical foundation and appeal to a wide higher education audience. Manuscripts of a theoretical, practical, or empirical nature are welcome and manuscripts that address innovative pedagogy are especially encouraged.

All submissions to IJTLHE must be made online through the Online Submission Form. In addition, all manuscripts should be submitted in English and in Microsoft Word format. The following Submission Guidelines pertain to all manuscript types, that is, Research Articles, Instructional Articles, and Review Articles. Ultimately, authors should follow the guidelines set forth in the most recent edition of the Publication Manual of the American Psychological Association (APA).

Review Process

Upon submission, all authors will receive an acknowledgement of receipt. Following a brief editorial review, each manuscript will be blind reviewed by two members of the Review Board. The review process will take approximately 4 weeks. At the end of the four-week review process authors will be notified as to the status of their manuscripts - accept, revise and resubmit, or reject - and will receive substantive feedback from the reviewers. Manuscript authors are responsible for obtaining copyright permissions for any copyrighted materials included within manuscripts. The authors must provide permission letters, when appropriate, to the IJTLHE Editors.

All manuscripts accepted for publication are subject to copyediting by the Managing Editors. Subsequent to copyediting, and prior to publication, authors will be provided galley proofs to correct errors and provide final approval of all changes. Before publication, authors of accepted manuscripts must assign copyright of the manuscript to the International Journal on Teaching and Learning in Higher Education (see Copyright Agreement Form). Requests to republish articles should be made to IJTLHE, although advance permission to copy articles is made in accordance with "fair use" guidelines.

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Exploring the Theory-Practice Relationship in Educational Leadership Curriculum Through Metaphor

Carol A. Mullen, Bobbie J. Greenlee, and Darlene Y. Bruner
University of South Florida, USA

A team of curricular leadership pedagogues report the experience of studying their own classroom practice as they engaged educational leadership (EDL) students in sustained, reflective inquiry for the related purposes of clarifying their own meaning systems and experiencing self-empowerment. This descriptive, exploratory qualitative study encouraged students to inquire into and develop metaphorical images that reveal fundamental complexities and challenges of the theory–practice relationship. The areas of theory and practice, metaphor, and reflection are reviewed and workshop design and collaborative activities, including Blackboard and metaphoric displays, are described. Students defined *theory* and *practice*, used a binocular/integration metaphor to describe the theory–practice relationship, applied an architect/builder metaphor to accomplish this end, and created a metaphor of their own. Three patterns emerged from the data: (a) regarding the relationship between theory and practice, discourse connotes separation, interaction, or integration; (b) communication between practitioners and theorists is rooted in authority, distance, and difference; and (c) while power must be equal for focus and balance to occur, disequilibrium characterizes many teacher contexts.

As curriculum leadership pedagogues, we prepare experienced teachers to be reflective school leaders. Consistent with contemporary studies of the educational leadership curriculum, we envision such individuals as democratic, critically thinking, team-oriented professionals adept at using theory to improve practice (e.g., Horn, 2002; Jenlink, 2002; Lortie, 1998). For this case study, we expanded our approach to engage educational leadership (EDL) students in a process that would involve them in exploring the fundamental relationship of theory to practice for the related purposes of clarifying their own meaning systems and experiencing self-empowerment.

This discussion is framed by these research questions: (a) How does the concept of metaphor help EDL students grapple with the theory–practice relationship? (b) What effect does a series of reflective workshop exercises have on EDL students' ideas of theory and practice? (c) What evidence suggests that metaphors enable reasoning, promote reflection, and inform action?

At least two assumptions underlie the use of metaphors as a pedagogical approach to educational study. First, metaphorical images provide an organizational framework for expanding understanding and reflective inquiry of complex concepts (Gentner & Gentner, 1983; Lakoff & Johnson, 1980). Second, metaphorical pedagogy facilitates the concept of reflection for producing insight into human experience that shapes future actions (Schön, 1987). This model supports metaphorical concept clarification as well as informs decision-making and action.

Conceptual Frameworks

Theory and Practice

While theory and practice have been considered integrated parts of a whole, many practitioners and scholars experience these as separate worlds. Consider that Schwab (1969/2004) identified *theory* as a “structure of knowledge” that “abstracts a general or ideal case” (p. 109). It is associated with models, metatheory, and even metametatheory, as well as organizing principles, including conceptual schemes and methods (p. 107), which some see as fixed and hence limiting. On the other hand, practice is viewed as action that “treats real things: real acts, real teachers, real children, things richer and different from their theoretical representations” (p. 110). With this categorization in mind, it is easy to see that theory and practice, when viewed as separate forms of understanding, have become differentiated as lenses for viewing issues in education.

Criticism in the fields of curriculum studies and educational leadership draws attention to the schism that exists between theory and practice (and theoreticians and practitioners), as well as the pressing need for mending (e.g., Horn, 2002; Jenlink, 2002; Jipson & Paley, 1997; Mullen, 2003). For decades, educational leadership programs have been faulted for perpetuating the schism by failing to teach practical ideas for “solving real problems in the field” to aspiring administrators (Murphy & Forsyth, 1999, p. 15). Lortie (1998) attests that practice involving field-based conceptual and social skills – such as interpreting school data, reporting results, and making informed decisions – is critical to the work of school leaders.

Yet in leadership programs such proficiencies tend to be bypassed in favor of theory, particularly in the form of abstract principles of learning, supervision, organization, and so forth.

In leadership studies, Jenlink (2002) and Horn (2002) are among those researchers who are leading efforts to bring theory and practice, theoreticians and practitioners, into a new relationship. The challenge to the professorate is to test theory against practice and to include the practitioner as partners in theory development, which this pedagogical intervention attempted to do. Horn (e.g., 2002) urges that an overarching purpose for education today should be to overcome the “theory/practice binary” that obstructs authentic and deeper relations among schools, universities, and communities. We join Horn in his plea for addressing existing cultural schisms, which specifically highlights “the importance of conversation” for “bringing assumptions into the open” (p. 92). We also reinforce Jenlink’s (2002) view that scholar-practitioner leaders should use different disciplinary frameworks (e.g., politics, sociology) for engaging in the theory/practice relationship and for “mediat[ing] dominant ideologies” (p. 3).

Among other critical curriculum theorists including ourselves, English (2003), Kincheloe (2004), and Pinar (1978/2004) concur that teacher researchers can become reflexively aware when they consciously abandon the “‘technician’s mentality’” (Pinar, p. 154) that reproduces the modernist mindset. Restrictive paradigms that underscore “the way” to thinking about problems and solutions essentially discredit the capacity of practitioners to perform as potentially influential inquirers and change agents. Instead, they are being encouraged to commit to liberatory projects that empower themselves, other practitioners, and, perhaps most importantly, their students. On a larger scale, such individuals identified by Pinar (1978/2004) as “reconceptualists” are concerned with significant sociocultural and political issues, not isolated problems that are easily remedied – similarly, the reconceptualist movement in the curriculum field is concerned with “what curriculum is, how it functions, and how it might function in emancipatory ways” (Pinar, 1978/2004, p. 154).

Through such processes, differences in views, values, and priorities can be aired in the classroom that could, in effect, help mend the theory/practice gap by exposing opportunities for renewal and recovery. At the same time, a prospective leader who gravitates toward inquiry will use theory to guide his or her practical knowing and will also see the possibilities and the limitations of theory in practice.

Metaphor and Possibility

Metaphor can be used to capture a flexible, creative, and analytic form of integration in educational theory and practice, as well as in thought and action. Ivie (2003) sees *metaphor* as the use of a word, phrase, or image in place of another to imply a likeness or comparison. From a cognitive psychological perspective, researchers (Gentner, Bowdle, Wolff, & Boronat, 2001; Gentner & Gentner, 1983) have suggested that metaphor facilitates comprehension and relational knowing.

Lakoff and Johnson (1985) posit that metaphorical mappings, such as “life as a journey,” refer to the intricate structures of our language systems. Gibbs (1987) also asserts that “metaphors do not necessarily express a single proposition but are often seen as being ‘pregnant’ with numerous interpretations” (p. 31). Importantly, alternative meanings can all be “equally plausible.”

For our graduate pedagogical intervention, we embraced Anna Craft’s postmodern construct of “possibility thinking” that reminds us of Gibbs’s (1987) ideas. Possibility thinking views problem solving as a puzzle, where one seeks “alternative routes to a barrier,” poses “questions,” and identifies “problems and issues” (as cited in Jeffrey & Craft, 2004, pp. 81–82). Relative to educational leadership, we support such postmodern efforts for moving beyond technical or efficiency metaphors to reinvent how we think, act, and create. The technical metaphors of teaching and learning that prevail in our discipline do not necessarily facilitate reflection and inquiry. Postmodernist researchers in educational leadership and administration (see English, 2003; Horn, 2002; Jenlink, 2002; Mullen & Fauske, in press) strongly believe that new metaphors that promote critical thought are needed for aiding scholar-practitioner leaders in breakthrough discoveries that stem from deep reflection and “out-of-the-box” thinking. Leader (teacher, principal, or academic) as scholar practitioner is one such metaphor, in that on the surface it may seem oxymoronic to posit a view of the world and person that combines and essentially integrates two opposites – theory and practice.

Reflection and Inquiry

For this classroom intervention, we approached reflection as a study of theory and practice using metaphor as a conceptual–aesthetic tool for recursive engagement. Schön refers to the phenomenon of engagement as “a reflective conversation with the materials of a situation” (p. 42). When unleashing the reflective practitioner concept onto the world of professional education, he uses exemplars from

architecture and the arts. Architects, as designers, deal with form and functionality to bring stylistic intentions into reality. In the process of construction, however, they are confronted by unforeseen variables and restrictions that require a reconstruction of the initial intention.

In practice, the builder constructs each of the different systems in a structure to generate the architect's design from the ground up. Materials and technologies in the hands of skilled artisans come together to transform idealized visions into functional buildings. However, the architect may not always see the constraints of the site or building medium, while builders, as skilled practitioners, will likely be more aware of physical obstacles to the architect's plan. Through this dialectical process of moving from design to problem then back to design, the practitioner's realizations are discovered in action. With the architectural metaphor, the design and product evolve simultaneously, whereas in the midst of action practitioners not only invent new theories of action but also modify or eliminate old strategies.

Using reflective "conversation" as a strategy for exploration in addition to "leadership activity" (Horn, 2002, p. 83), then, we facilitated a classroom intervention involving school-based scholar practitioners.

Binocular Vision

The new concept of *binocular vision* links theory and practice, metaphor and possibility, and reflection and inquiry – the various parts of our conceptual framework. Mullen's (2004) coinage refers to a form of visual intelligence, acknowledging cognitive scientist Hoffman's (1998) notion that we all have a gift of perception and use it everyday. As Mullen explains, "Binoculars have two glass lenses contained by a frame" and, because the lenses are "functionally connected as part of a larger system, the *binocular* system is conceptually integrated" (p. 15). She expands with a theory–practice activity for student groups:

Picture two lenses, one called "theory" and the other "practice," neither contained by a frame. Look through each lens separately, concentrate for a few minutes, and then jot down what you have observed. For example, I imagined moral leadership ... for the "T" lens, and for the "P" lens I recalled a grave but hopeful situation involving a low-performing school in Alabama. (p. 15)

Mullen then asks, "What might we infer from this experiment?," speculating that the "lenses" of theory

and practice (T and P, respectively) are part of a whole. The binocular system similarly represents "the administrative leadership field wherein theory and practice already naturally occur" (p. 16).

Graduate Classroom Setting

This qualitative inquiry occurred throughout the fall semester of 2004 at a public doctoral/research extensive university in the southeastern United States. Carol, Bobbie, and Darlene, female faculty in an educational leadership and policy studies program, collaboratively planned and analyzed the pedagogical activities. The actual activity occurred within a master's course, Foundations of Curriculum and Instruction. During a 6-week workshop, 21 master's students were exposed to reflective learning and in-depth dialogue.

Research and Pedagogical Methods

Workshop Design

The students formed discussion groups (three to four members) that remained intact throughout various activities. These were identified, for data analysis purposes, as Group A, B, C, D, E, and F. The class responded to four directions: (a) define *theory* and *practice*; (b) use Mullen's (2004) binocular/integration metaphor to describe the relationship of theory and practice; (c) apply Schön's (1987) architect/builder metaphor to describe the conflicted relationship of theory and practice; and (d) develop your own metaphor to describe theory and practice.

Teacher Participants

Practicing teachers – 67% elementary school teachers and 86% female, two of whom were Hispanic – employed within the same large suburban school district in Florida participated in the curriculum workshop. The members belonged to a newly implemented EDL cohort that was developed in partnership with the university and the local school district. They had been selected through a nomination process by district administrators based on duration of professional experience, as well as performance appraisals for 2 school years, documentation of leadership contributions, and the recommendation of their immediate supervisor or principal. Our study features this group of 21 teachers who, based on the district's assessment, have already demonstrated professional growth and leadership capacity in their schools and have potential as future school administrators.

Class Activity

The initial class activity was designed to probe student reflection on the complexities of the relationship of theory and practice using metaphorical images. In small groups of three or four, students equipped with markers and paper (11 x 17) were introduced to the workshop by defining *theory* and *practice*; each group then shared its results.

Next in our curricular sequence, the metaphor of binocular vision was used to describe the relationship of theory and practice. After a brief discussion of how binoculars bring distant objects into clear view, a pair of binoculars, fixed with the letter *T* on one lens and *P* on the other, was passed around. (This method follows Mullen's [2004] suggested use of Post-It® notes marked with small letters.) Upon peering through the binoculars, students saw a holistic image, merging the separate close-up view seen by each eye.

Extending the influence of metaphors, students were encouraged to imagine the architect/builder relationship as a metaphor for the conflicted relationship of theory and practice. When an architect sees possibilities for implementation in his or her drawings, the builder must interpret the architect's vision and improvise in uncertain situations.

The concluding task for this class session involved students in the invention of their own metaphors for the theory–practice relationship. Each group represented its metaphor imaginistically and pictorially, sharing conceptual associations and personal stories.

Online Discussion

Besides the face-to-face class sessions, asynchronous discussion occurred in the Blackboard Learning System forum. This format permits interaction outside the classroom at any time, allowing students time for reviewing ideas, as well as for organizing and composing their thoughts (Groeling, 1999). Comments, approximately 150 words in length, were guided by questions posted as the first thread in the discussion forum. Each student provided a substantive reaction to a minimum of two commentaries posted by class members. The discussion lasted 1 week and consisted of 95 total postings.

Student Participant Survey

An online, anonymous survey entitled "Reflections on Metaphor and Theory–Practice Relationships" complemented the students' in-class experiences of reflection. It served as an opportunity for us to inquire into the potential benefits of the metaphor activity. The survey included open-ended questions that elicited the students' perceptions of the exercise in order to

ascertain the extent to which the metaphor activity may have expanded their perception of theory and practice and to learn whether any of the metaphors stood out as more applicable to the relationship of theory and practice.

Method

For this study, the researchers used a systematic, rigorous, and auditable analytical process in keeping with a basic qualitative study design. In order to assure the trustworthiness of our conclusions we planned the classroom research unit together, co-teaching and reflecting on it while simultaneously carrying out the research for this pedagogical project. By audiotaping, transcribing, and analyzing all relevant sessions, both with the student participants and ourselves, we were able to verify the conclusions reached about the major outcomes of this work.

We enacted an interpretational analysis of all the data by individually coding and classifying the material in order to identify salient constructs, themes, and patterns. The systematic procedures followed in this analysis included the identification and initial coding of text, the development of categories by methods of constant comparison, and generation of themes that emerged from these categories (Gall, Gall, & Borg, 2005). Miles and Huberman's (1994) model of qualitative approaches to data coding, analysis, and display proved particularly helpful as a guide. The researchers searched the texts for units of meaning, collapsed and refined categories, and explored relationships and patterns until consensus and saturation were reached, with no new themes emerging.

In an effort to eliminate unnecessary bias in the interpretation of results, comparisons were made only after the independent coding was completed. For example, the proliferating categories of theory (TH) and practice (PR) were evident in all of the data sets. To further differentiate these, we developed sub-codes; in the case of *theory*, values, beliefs, systems, testing, creativity, concepts, architect, dreamer, metaphors, and practice were identified. *Practice*, as a primary code, was represented through such differentiated notions as self-improvement, discipline, doing, builder, building, metaphor, realist, application, and work. We utilized these and other categories or thematic units for our content analysis of the data. For the pictures (figures) we coded both key words and images, discussing the key elements within each. Our decision on which images to represent herein was based on an effort to balance the two metaphors (architect/builder and binocular vision). We then selected those that best engaged the theme of creative and analytic integration in thought and action.

To identify themes within and across the data sets of texts and images, we searched for recurring concepts and metaphors (Ryan & Bernard, 2003). Individually and collaboratively we analyzed the collected data: student-generated images (14); printed online discussion threads (45 pages); anonymous survey responses (9 pages); and audiotaped transcripts (4 hours) of the in-class lesson. All student-identifying information was removed. Our conclusions were discussed only after the independent analyses to avoid influencing one another's thinking. A list of tentative themes was generated and reviewed, eventually receiving consensual support. The data were triangulated across data types (i.e., web logs, pictures, class transcripts, researcher conversation transcripts) and analysts to provide thematic corroboration.

About the survey itself, the authors developed the questions for this instrument (posted on Blackboard). While this may be suggestive of "self-selection" and hence bias, all of the questions were informed by the literature covered in the conceptual frameworks' section, specifically as related to theory and practice, metaphor and possibility, and reflection and inquiry. Particular emphasis on Schön's documented metaphor of architect/builder and Mullen's metaphor of binocular vision is also evident in the survey. Key concepts developed by curriculum and critical theorists, such as the fundamental relationship between theory and practice, informed the questions asked. As experienced higher education teachers and collaborators we were able to count on our own ability to interpret the frameworks and use them to our disciplinary and pedagogical ends. And as research instruments we influenced the survey questions and classroom interactions through our own interpretive frameworks; we also affected the interpretations developed through the very process of creating an intervention that would ideally not only engage the students in clarifying their own meaning systems but also in experiencing self-empowerment.

These efforts at data analysis yielded the three major themes discussed in the next section.

Thematic Analysis of the Data

Overall Analysis

Based on the researchers' analysis of the entire data set that included intensive dialoguing over a 3-month period, several overall patterns emerged: (a) discourse regarding the relationship between theory and practice occurs at different levels, sometimes connoting separation, other times, interaction, and less frequently, integration; (b) communication between practitioners and theorists is rooted in authority, distance, and difference, and hierarchical assumptions about theory

and practice are reinforced through patterns of socialization; and (c) disequilibrium characterizes many teacher contexts even though power must be equal for focus and balance to occur (as in the case of binoculars and binocular vision),.

Metaphoric Displays

For the purpose of demonstration, we made selections from the workshop data consisting of 14 student images that were generated out of a series of theory-practice activities. Our descriptions of the visual displays were derived from multiple interrelated sources, including in-class audiotape recording (and transcription) of the students' verbal explanations of their group work; students' postreflective discussion of the artwork in an online survey; the discussion board referred to as "fastwrites" (a name given to this Blackboard writing activity); and audio taped transcriptions of the research team's discussion of the artwork, based on the students' interpretations and our own.

The value we placed on recursion as instructors vis-à-vis this curricular activity is evident from the ongoing attention we gave to interpretation and reflection. We treated the meaning-making process in the EDL classroom not as a "one-shot deal" but rather as an extended opportunity for deepening reflection. Our interpretation of the metaphoric displays, then, emerged from multiple exchanges over time through occasions that produced reflection and reflection-on-action. In an effort to create a community of scholar practitioners, we used the modalities of the classroom (small group and whole class discussion), learning technologies (Blackboard), and research meetings.

During the workshop, the student groups created three types of metaphoric displays: (1) binoculars and binocular vision, (2) architect and builder, (3) and their own image. In response to the survey question asking which classroom activities may have helped them to see their practice and classroom in new ways, the students attributed value to numerous metaphors. Using a simple frequency count of the metaphors described in their writing, it became apparent that they experienced the architectural metaphor as having value and strongly identified with the binoculars metaphor in particular. Concerning the binoculars metaphor (see Figure 1), students typically responded in a way that revealed an emergent understanding of the integrative potential of theory and practice, and as related to their own self:

The illustrations on the white board explaining the two sides of the binocular increased my understanding of how important it is to use theory and practice together; however, the "T" [theory] on the lens made it memorable for me.

Using the binoculars as a metaphor allowed me to gain perspective on how the two work together but independently. The focal point and the distance between the two lenses are an important thing to consider. It is only when we step back from the theories we believe to be true that we can really see how they are being played out in practice. It is also true that when we reflect on our practices we are then in a better position to see how theory has played a part.



Nonetheless, all of the students had found the two primary metaphors in addition to those that were team-generated helpful for stretching their understanding in new ways. As one person explained, “all of the metaphors were useful. One’s personal understanding or relation to a certain metaphor makes it more meaningful or applicable. Everyone relates to things differently, so our personal interests come into which ones we most identified with and why.” In addition to personal interests, students also made discernments about the metaphors and those they personally favored based on prior knowledge, clear vision, and conceptual fit.

Before elaborating on specific metaphorical displays, a general description of the majority of images is in order. A total of 24 mappings – some text only and some drawings – were created in class, specifically 6 definitions, 6 binocular images, 6 architect/builder images, and 6 original metaphors. Relative to this data cluster, we report the results of the latter three activities, all featuring metaphors rendered visually, accompanied by text (i.e., labels or descriptors).

First, after discussing and seemingly internalizing the two metaphors given to them, the student groups provided rich material in snapshot form:

- *Binoculars metaphor* – theory and practice must be used simultaneously, and the lenses must be balanced, in focus, and equally powerful; the two sides of the instrument

underscore the importance of using theory and practice together; theory and practice, which are two halves of the same whole, can function as a seamless, inseparable phenomenon

- *Architectural metaphor* – the architect represents theory and the builder, practice, and these roles work synergistically; architects need prior knowledge of how builders construct dwellings (or practical applications in education) in order to create valid and useful theory, and builders can only build houses to specification if they have “bought into” the architect’s vision

Next, following these metaphoric activities, the groups created their own images. The metaphors, complete with verbal descriptions, featured these “favorites” of the students for illuminating insight into the theory–practice relationship:

- *Clothes closet* – contains many theories, old and new, some constantly in use, others used only on special occasions or under certain circumstances; the “stuff” in the closet also represents practice.
- *Ocean-beach* – ocean waves crashing onto a beach and then returning to sea simulates circular motion.
- *Pop culture* – screenwriter and actor (theorist and practitioner, respectively) work in such contexts as television, wherein the viewing audience consists of students and schools; the producers represent the governmental agency that supplies funding; actors make interpretive leaps as they learn about their characters and improvise.
- *Prism* – educators reflect light, just like prisms; the white light entering the prism represents theory; the practitioner turns this light into an array of colors – the colors cannot be seen until the light is implemented into practice; the white light entering the prism can only emerge, transformed into colors, when educators adapt theory to practice; at just the right angle, one can end up with something as beautiful as a rainbow of light, potentially influencing students and their growth.
- *Mountain climbing* – theorists and practitioners will find themselves ascending the same mountain from different sides and following different trails, yet they have the power to inform one another along the way on how to get to the top; they can see what they have accomplished together only by reaching their goal.

- *Journey* – starting out with an itinerary (i.e., theory) of where one is going and how one plans to arrive at the destination, the map (or plan) acts as a guide that travelers interpret; the bridge encountered between theory and practice leads to administration; the traveler stops and refuels in the form of research and learning; anticipating detours is realistic in the experience of travel and so a map will be needed; one uses a visitor's center to obtain information and reflect while resting

Teacher-Generated Metaphors

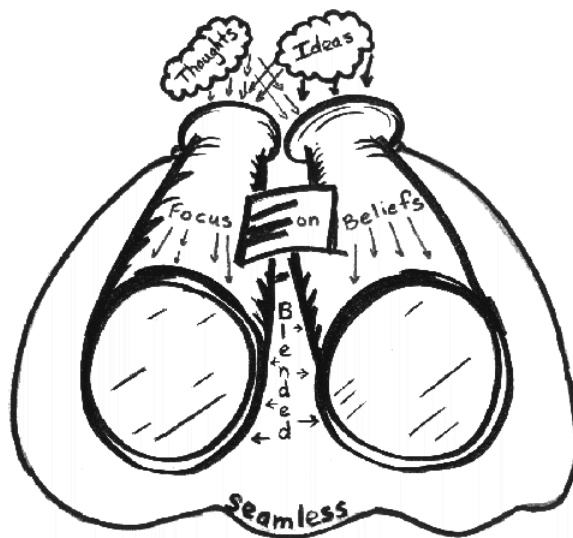
Binocular Metaphor: Binoculars

The group that drew Figure 2 spent time on “the little focus bar in the middle” and how it functions to achieve balance, depending upon an individual’s belief systems (*Note: Figures 2-5 are an artists rendition of groups’ drawings on the large Post-It notes. Every effort has been made to assure the fidelity of the artist’s rendition.*). They explained that the curricular outcomes educators strive for depend upon the use of theory in balance with practice. Further, they elaborated on the investment of the perceiver/viewer in aligning theory and practice – someone who resorts to “toy binoculars” will obviously fail to see much of anything. And anyone who “takes a lens off a more powerful set of binoculars only to add it to a lesser set” is also doing others or themselves an injustice. This group concluded:

We agreed that in order to engage in a certain idea one would need to have a balance of theory and practice [within his or her visionary scope]. You could have a school with people who are a big “P” and a little “p,” and some will only do the minimal practice while others will commit to a bigger, more complete practice. We also thought that administrators should be the ones holding the binoculars.

Dynamics of power, authority, and control are a covert part of the framing articulated by this group. The members imagine that the individual holding the binoculars will have positional and visionary influence as a direct reflection of his or her role; they may have been hoping that this person would also ideally embody or radiate vision. Consistent with this class as a whole and EDL classes more generally, administrators at the school and district level are associated with visionary prowess and, moreover, thought to be in exclusive possession of the binoculars, or powers of observation (Mullen, 2004). One could infer that such student groups are comfortable with their bureaucratic

arrangements as “lesser” authority figures. Or perhaps they simply wish that their own administrators would take greater responsibility. Alternatively, they may simply believe that having visionary prowess should be innate to the role of administrator.



Many students identified the binoculars metaphor as enabling them to see their practice and classroom in new ways: “When we looked through the binoculars, we realized that theory and practice are invisible when brought together, which gave a better understanding of how they are separate but one.” Also, “I’m a visual learner, so getting to see through the binoculars and studying the accompanying information on binoculars and vision really solidified the importance of balance between theory and practice for me.”

Another group that had created a binoculars artwork shared that communication *must* occur between and among school practitioners and leaders. Its members described an imaginative scenario involving such powerful parties as school boards and district offices. Such decision-making personnel can either dictate to principals and teachers or they can adjust the focus on their own binoculars.

While the binoculars activity engaged these students mentally as perceivers (and believers!), several others preferred the architectural metaphor. One indicated that it had a “human side” that the binoculars lacked, explaining that the architect and builder have the potential to listen and learn from one another in order to “build a better building by understanding and developing the architect’s plans.”

Architect/Builder Metaphor: Igloo

The question “Use the architect/builder metaphor to describe the relationship of theory and practice”

was given to the small groups. In response, one group created an igloo, explaining: “We wanted to start with something that isn’t real to us as Floridians so we decided on an igloo. Of course igloos are not found in Florida, so it doesn’t fit, and that would be a conflict. And the issue of snow itself would involve a conflict of portability.” The members agreed that portability is a variable that would seriously impact the educational system in terms of student achievement. They gave an example of the conflict that arises for entire school communities as teachers shift in droves to the highest-paying districts in Florida or out-of-state altogether: “So the huge conflict we’re describing is between the theory of having great teachers [in low-performing schools or non-affluent districts] and the actual practice of it.”

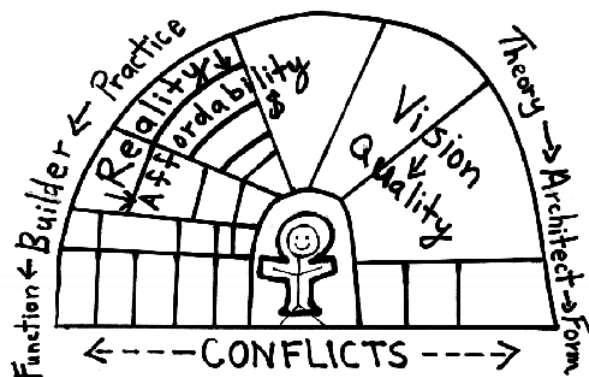
In describing the image (see Figure 3), this group equated the left-hand side of the igloo with practice and the right-hand side, theory. The members gave as their rationale for this dualistic design the notion that “function comes before form,” and hence the practical constraints of the builder are more critical than the ephemeral concerns of the theorist. In their teacher world, the issues of “reality” and “affordability” are paramount, dominating “vision” and “quality.” Paradoxically, however, we noticed that within the drawing itself, the Eskimo (teacher) was placed at the center of the igloo (school), and that balance has been further ascribed to the structural beams labeled “practice” and “theory”; hence, the equality of space afforded each domain suggests that they have equal value.

Another student identifying with the architectural metaphor expressed:

Without prior knowledge of how a builder builds houses, the architect could not do his job correctly. This means that theorists need to have an understanding of the practical applications in education in order to create a valid theory. Likewise, the builder has to “buy into” the architect’s vision in order to construct the house to specification. There is more than one way to build a house, and more than one way to teach. Without proper communication and a shared vision, the builder and the architect will be terribly unhappy.

As is evident from the commentary we received, two notions about the architectural metaphor were simultaneously alive – that of theorist (e.g., architect/curricular or policy leader) and practitioner (e.g., builder/teacher or principal) as occupying inherently separate roles, and that of theory and practice as interrelated phenomena that inform one another and, presumably, the work of teachers. As one teacher

concluded, “Each theory builds upon the last practice in order to make a stronger, more usable theory.”



Student-Generated Metaphors

For the development of their own images, students agreed that “taking the time in our groups to create our own metaphor causes us to analyze the very way in which we think of theory and practice. Theory and practice are more directly connected than I once believed and mutually influencing.” The two metaphors selected for commentary here – the clothes closet and ocean-beach – had definite appeal within the group as a whole. Because the clothes closet was a particular favorite and also raises some provocative, unresolved issues, we more closely scrutinize its nuances.

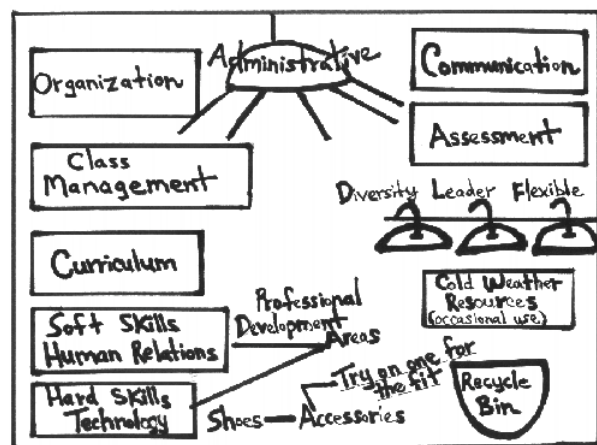
Clothes Closet Metaphor

The class gravitated toward the clothes closet metaphor (see Figure 4), largely for its value as an everyday worldview and for the premium it placed, in their minds, on organization, functionality, and storage. Metaphorically speaking, the students envisioned various parts of the closet as important for storing items with various functions. Favorite clothes and objects are pulled out often, they elaborated, and other belongings have seasonal or sentimental value. The light in the closet was uniformly interpreted as “administration,” and without self-interrogation. They talked about how this had to be a “good” light and that lighting (i.e., administrative styles) fluctuates in both favorably and unfavorably. All in all, it was agreed that the light needed to be “pure,” a choice of diction that hints at goodness and morality and associates light not only with administration but also with its ubiquitous power.

For a few others, the light represented research and, once again, the illumination it provides and the guidance afforded them as practitioners. One teacher speculated that she did not “think about how theory drives my instruction, my practice. The closet metaphor made me think about how, as a reading specialist, I am

always saying what good readers do. This metaphor made me think of the light in the closet as the reading research supporting what good readers should do." In another instance that ties together reflection and morality, someone shared:

When everything is going well, I don't need to go to the closet. However, when a new student arrives in my class, or a new situation arises and things are not going smoothly, that is when I return to the instructional closet in my head and look for other strategies to try. At these times I turn on the "closet light" to reflect on what I *am* doing and what I *should be* doing.



The students believed they were experiencing a personal transformation in understanding. Some commentaries to this effect used the analogies of "cleaning" and "recycling" to represent fuller meanings of teacher decision-making, abandoned practices, and well-worn practices. Lucid examples include: "I've begun looking back on some of my practices and my attention has been on the ones we abandon but still hang on to, like those clothes that used to fit us and may again one day." Additionally, someone else commented: "I have many abandoned practices that I keep in the recycled box. I just don't want to throw them away, and of course, they might just be "in style" again. I also have practices that I pull out on an as-needed basis."

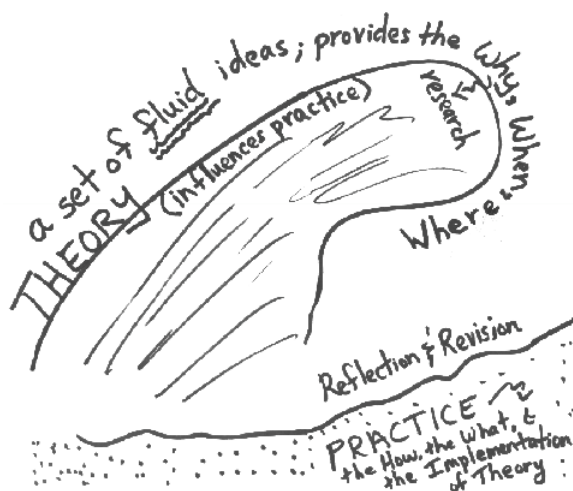
Visualizing the closet in theory-practice terms, the practitioner for whom a repertoire of knowledge, theories, and practices can be imagined as separate, ready-made compartments. Integral to the design of the closet, educational theories (e.g., of organization, classroom management, curriculum, soft skills/human relations, and hard skills/technology) are also stowed inside the space.

The closet metaphor, however, while meaningful, is problematic for the epistemological simplicity

(technical rationality) it represents. It seems to illustrate theory as an organized "filing" or classification system with "neat little cubby holes" – a modernist concept underlining the socialization of teachers. The students identified this process as potentially mind numbing. On the other hand, the closet metaphor also raises the possibility that every theory is connected to others, as evidenced when a teacher's theory (borrowed or created) of classroom management folds into her theory of curriculum. Students identified dynamics that make theories changeable and amorphous.

Ocean-Beach Metaphor

The creators of this drawing described it as ocean waves crashing onto a beach and returning to sea, simulating circular motion (see Figure 5). Theory, a set of fluid ideas that frame "the why, when, where," influences practice, "the how, what, and implementation of theory." This group was the only one that created a drawing to "define" theory and practice – the others generated definitions in text only. (Little direction had been given other than to define *theory* and *practice*.) And this is the only group that defined theory and practice in relationship to each other – "theory influences practice"; "practice ... the implementation of theory. The other groups defined the concepts as separate entities. When describing theory as a wave that strikes the beach (practice), the group used the terms *reflection* and *revision*, words that had not yet surfaced in class. When asked by us if theory erodes practice, similar to the waves on a beach, the members responded that the waves on the beach work cyclically, building and eroding, and that shifts in sand result from the action of waves.



The concepts of theory and practice in the ocean-beach image and their manifold forms can be treated as linear or fluid processes. Its depiction and

description hint at postmodernism, which in metaphoric form provokes and encourages discoveries in the unexpected, multifocused, sensual, ambiguous, and indirect aspects of experience (Jipson & Paley, 1997). Because, as Eisner (1993) says, we as humans do not simply have an experience but rather “have a hand in its creation” (p. 5) – the quality of one’s creation depends upon how the mind has been engaged.

Views of the theory–practice relationship that were subjective, evocative, and fluid, then, stood out against those metaphoric displays in which theory and practice were cast as rational, standardized, and transparent notions. As can be expected, the students who seemed to naturally classify their ideas in ways commensurate with technical rationality oversimplified the concepts of theory and practice. The “taken-for-granted” world of teaching and leadership took shape in a host of images of power, authority, and hierarchy that formed a “hidden curriculum” within the students’ productions.

Discussion

Metaphor and Theory–Practice Concepts

Educational leadership programs struggle to present a balance between theory and practice to their students (see Mullen, 2003). Theory-laden programs are frequently criticized by practitioners for the perceived lack of practical application to issues facing today’s school leaders. On the other hand, as Louis Pasteur said, “Without theory, practice is but routine born of habit” (in Reik, 1948, p. ix).

The EDL students grappled with the concept of metaphor and the theory and practice relationship. Metaphor processing, a means by which learners indicate commonalities, understand the relational structure, and recognize the schema in new situations (Gentner & Gentner, 1983), was used to help students visualize and verbalize understandings of the theory–practice relationship. According to Petrie and Oshlag (1993), “The very possibility of learning something new can only be understood by presupposing the operation of something very much like metaphor. ... This [centers on] the epistemic claim that metaphor ... is what renders possible and intelligible the acquisition of new knowledge” (p. 582).

Many of the teachers examined the theory–practice relationship as a hierarchical relationship. A speech/language pathologist in the class shared:

If I felt forced to join the ranks of either theorist or practitioner, I’d have to view this a hierarchical

model and would choose to hold theory as foremost in importance. Besides, I believe that a theorist is always a practitioner by default due to the need to prove theory.

But as participants engaged in self-reflection, they were thinking differently about and changing their practice. A third-grade team leader declared, “I know now that theory and practice share a symbiotic relationship. A competent teacher might implement someone else’s theories, but a master teacher will develop and modify his or her own theories, implement the theories, and then reflect on them.”

When teachers begin thinking more deeply about the theory–practice relationship, they reflect on the purpose of school, what they want their students to learn and know for the future, and the relationship between their pedagogy and these aims. One high school teacher reflected about her first year and personal change over time: “What I was doing at the time was testing out my style of teaching without referencing any theory. My efforts didn’t always work. Today I feel successful, and with many different types of students, because I’ve been willing to accept research and theory as valid references.”

Effects of the Pedagogical Intervention

Overall, our thematic analysis of the data in its entirety suggests that the extended activities promoted three areas of development: individual, team/collaborative, and organizational. According to the most recent literature review on teacher leadership, teachers aspiring to become school leaders must have intensive focus in these very areas (York-Barr & Duke, 2004).

Furthermore, our analysis reveals that tensions and contradictions overshadow these crucial areas of transformation. The dialectics we encountered within the EDL group are briefly presented as unresolved tensions that capture the evolving thinking and new growth of leadership aspirants. By *dialectics* we mean a concept that exposes and conceals the “seam” between opposites, that is, “any complex process of conceptual conflict or dialogue in which the generation, interpretation and clash of opposition leads to a fuller mode of thought” (Honzik, as cited in Bothamley, 2002, p. 146).

Dialectic 1: Individual Development. Tensions were revealed in the students’ development as individuals, notably, when responding reflectively to preset questions through their fastwrites. Some critiqued those mindless forms of training that teachers feel forced to undergo and went beyond questioning the typical training experience, grappling with best practices. A self-interrogatory comment to this effect

was: “Teachers keep adding to their ‘bag of tricks,’ but that seems to be more about survival. Look at what we are doing in the profession: We have picked up the messages, discerned what is truly valued, and then shaped our behavior accordingly.”

Contradicting this message, when individuals wrote about the metaphoric drawings they created collaboratively, particularly the clothes closet, critique was not employed. For example, the notion of technical rationality (e.g., epistemological reductionism or simplicity) was bypassed; in fact, it quickly reached a favored status within the group for illustrating the theory–practice model in its simplest form. This metaphorical view sees theory as a modernist force that shapes teacher thought and practice. However, the students did question some of the practices of socialization, training, and assessment that define their teacher worlds.

Dialectic 2: Collaborative/Team Development. This pedagogical study supports the use of learning communities beyond their perfunctory functions, envisioning what Michaelson, Knight, and Fink (2002) call a “team-based transformational model.” As in our workshop, this emphasis makes group work the primary method of support, creativity, and performance. Illustrating a dialectic witnessed in schools, teachers must be able to “fully exercise the decision authority they have as a team,” while also having their “individual autonomy” respected and protected (Conley, Fauske, & Pounder, 2004, p. 667). An unresolved issue in our class similarly concerned the perceived value of teachers in exercising the parameters of one’s vision relative to administrative authorities. This is an organizational development issue and is further illustrated under the next dialectic.

Dialectic 3: Organizational Development. Organizational development relative to power, authority, and control is a salient issue in EDL master’s classes (e.g., Horn, 2002). On one hand, the teacher participants believed that administrators should exclusively “hold the binoculars” in their schools; presumably the holder of the binoculars would possess positional and visionary influence and consequently direct others. This way of thinking leaves little room for teachers to be creators of vision themselves and to negotiate with administrative authorities. As Ivie (2003) asserts, “Inappropriate metaphors can lead to false conclusions about teaching and learning,” especially when metaphors are seen not as symbolic tools for thinking but as “synonymous with reality itself” (p. 5).

On the other hand, tension was introduced when the vision of organizational development was imagined not as a function of top-down hierarchy but rather shared communication between school practitioners and leaders. Although fewer students expressed this democratic notion, they did say that vision would have

greater potency when practitioners (e.g., teachers) and theorists (e.g., central district decision-makers) work together, and, conversely, “the further apart they are the more tension and friction might occur.” By changing their viewing angle, supervisory personnel can approach the schools for which they have responsibility with a commitment to empower teachers and principals as partners, advisors, or consultants. A liberal view of teacher leadership suggests that “teachers rightly and importantly hold a central position in the ways schools operate and in the core functions of teaching and learning” (York-Barr & Duke, 2004, p. 255).

Reasoning, Reflection, and Action

As the students reflected on theory and practice in the online discussions, many described their own experiences and elaborated on concepts using metaphorical language. The metaphorical content in the online discussion narratives reflects perspectives of teacher practice. One teacher’s image represented teacher practice as warlike: “I am indeed in the trenches but am obligated to jump into and out of a variety of foxholes.” Another teacher stated that “practice that lacks reflection is akin to a hamster on an exercise wheel – running like crazy and getting nowhere.”

One student created a unique image of the theory and practice gap, characterizing the antitheoretical, “make-and-take” training preferred by many teachers: “My children always want a Happy Meal at McDonalds, and not for the nutritional value. Happy Meals are about the toy. It makes my kids happy for a little while, but then it becomes something I clean out of the car. Teaching should be about more than all the neat stuff (toys) we want.” The dominance of pressures for easily implemented strategies on school practice is aptly associated with the fast food industry’s speedy, cheap, and standardized influence on the American palate. Schlosser (2001) charged that the “McDonaldization” of America has triggered standardization and uniformity. This metaphor conveys the reality of schooling in America, with its emphasis on one-size-fits-all models of school reform.

As these teachers struggled to make sense of the theory–practice relationship, their reflective capacity triggered a questioning process. One of them asked, “If your practice of the theory is poor, is it valuable at all?” Another considered the merit of a theory orientation, “When we subscribe to a theory, it tells people about our values. What if we are basing our theories on outdated research or illogical paradigms?” The class searched for answers and absolutes while several students grappled with the ambiguities of theory and practice:

What I find puzzling is that with the ever-changing education system and educational theories, is there any one right way? Will we ever come to the point when educators agree on the best way to educate? Are we moving toward a true goal to find the perfect theory? Or, are we merely jumping from one bandwagon to another trying to appease the public or satiate our own egos – that we somehow make the difference for kids?

Not only are these teachers struggling conceptually, they are also in the process of developing plans for future action as school leaders. As one student declared, “The theories that I learn today will be my practices of tomorrow.” The teachers revealed a hopeful model of themselves as a school leader: “I know others will ask about my leadership theories, but I hope that they show through my practice.”

Chastising an online discussant for referring to theory as a “great place to start, but I don’t think we can live there,” one teacher provided an intriguing metaphor of theory as street: “It’s my gut reaction that although you may not think you are living on “theory street,” I’ll bet that you visit it as needed. I travel back to that street every time a parent or teacher asks me a question requiring my expertise. Theory pops up as we travel along our practice path.”

In sum, the teachers used metaphors in their e-postings to share how they see the reality of schooling and their role in it, and possibilities that extend beyond their current situations. Their metaphors generated original models for the theory–practice relationship and the use of reflection for future action.

Concluding Note

Education students studying in administrative leadership preparation programs are unusual – each is typically an experienced teacher, leader, and hybrid of student and professional. As developing inquirers, the identity and life of the scholar practitioner is newly forming, influenced by the graduate culture and entrenched in the mores of K–12 schools. This challenging process of identity development helps to explain why modernist metaphoric representations of the theory–practice relationship (e.g., clothes closet metaphor) emerged from our participants’ creations, while postmodernist metaphors (e.g., ocean–beach metaphor) showed only budding promise.

While some of the thinking about the theory–practice relationship appeared to be modernist reductions, at the same time this group’s immersion process generated holistic images of integration. The members built on and related to one another’s definitions, at times questioning, other times searching for the “right” answer or way. They did not have the luxury of pulling their thoughts out of a textbook or

training session, even though they expressed appreciation for being given “something concrete to manipulate my ideas and construct my own theories.” Instead, exploiting the usefulness of props and manipulatives in addition to team work and extended conversations, they created metaphors from their own experiences and reflections, and without any formulaic approach. It was as though whenever they attempted to pull apart theory and practice, they would succumb to simplification, and when they allowed these constructs to coexist, they could produce insight.

Finally, as these teachers learned, there is no one correct way of seeing the theory–practice relationship. Complex, intangible experiences that give meaning to the human experience, such as love, hope, and learning, are often expressed as metaphors, images, and analogies. As reflective inquirers, our participants shifted from seeing theory and practice as tangible, antithetical forces to powerful, interrelated constructs. As concisely captured by one of our participants,

While planning my lessons and activities for my classes, I often find myself wondering, is theory driving my practice or is practice driving my theory? I now understand that while I may not be able to verbalize succinctly the theory behind my practice, it is helpful to me to be able to at least reflect on the theory behind my practices.

While this transformation may have only been only partial for those participating in our intervention, the classroom activity nonetheless tapped the imaginative and generative capacity of teachers.

Author Note

Two reviewers provided very helpful suggestions for improvement on the draft version of this article for which we are grateful.

We thank William A. Kealy, Associate Professor of the University of South Florida in instructional technology, who produced the digital renderings of the images exhibited herein. We also appreciate Michael Greenlee’s help with transcribing our audiotapes.

In accordance with the University of South Florida’s rule 6C4-10.109.B-6, we are confirming that the opinions stated in this article are our own, and not those of the university.

References

- Barber, E., Chandler, S., & Collins, E. C. (2001). Using Monet to teach leadership: Integrating the arts into educational administration preparation. *Journal of Curriculum Theorizing*, 17(2), 27-38.

- Berg, B. L. (2004). *Qualitative research methods for the social sciences* (5th ed). New York: Pearson.
- Bothamley, J. (2002). *Dictionary of theories*. Canton, MI: Visible Ink Press.
- Conley, S., Fauske, J., & Pounder, D. G. (2004). Teacher work group effectiveness. *Educational Administration Quarterly*, 40(5), 663-703.
- Gibbs, R. W., Jr. (1987). What does it mean to say that a metaphor has been understood? In R. E. Haskell (Ed.), *Cognition and symbolic structures: The psychology of metaphoric transformation* (pp. 31-48). Norwood, NJ: Ablex.
- Eisner, E. W. (1993). Forms of understanding and the future of educational research. *Educational Researcher*, 22(7), 5-11.
- Eisner, E. W. (1996). Is 'the art of teaching' a metaphor? In M. Kompf, W. R. Bond, D. Dworet, & R. T. Boak (Eds.), *Changing research and practice: Teachers' professionalism, identities, and knowledge* (pp. 9-19). London: Falmer.
- English, F. W. (2003). *The postmodern challenge to the theory and practice of educational administration*. Springfield, IL: Charles C. Thomas Publisher.
- Gall, J., Gall, M., & Borg, W. (2005). *Applying educational research: A practice guide* (5th ed.). Boston, MA: Pearson Education.
- Gentner, D., Bowdle, B. F., Wolff, P., & Boronat, C. (2001). Metaphor is like analogy. In D. Gentner, K. J. Holyoak, & B. N. Kokinov (Eds.), *The analogical mind: Perspectives from cognitive science* (pp. 199-253). Cambridge, MA: The MIT Press.
- Gentner, D., & Gentner, D. R. (1983). Flowing waters or teeming crowds: Mental models of electricity. In D. Gentner & A. L. Stevens (Eds.), *Mental models* (pp. 101-129). Hillsdale, NJ: Lawrence Erlbaum.
- Groeling, T. (1999). Virtual discussion: Web-based discussion forums in political science. *UCLA Department of Communication Studies/Speech*. [Online]. Retrieved from <http://repositories.cdlib.org>.
- Horn, R. A. (2002). Differing perspectives on the magic of dialogue: Implications for a scholar-practitioner leader. *Scholar-Practitioner Quarterly*, 1(2), 83-102.
- Ivie, S. D. (2003). *On the wings of metaphor*. San Francisco, CA: Caddo Gap Press.
- Jeffrey, B., & Craft, A. (2004). Teaching creatively and teaching for creativity: Distinctions and relationships. *Educational Studies*, 30(1), 77-87.
- Jenlink, P. M. (2002). The scholar practitioner as bricoleur. *Scholar Practitioner Quarterly*, 1(2), 3-6.
- Jipson, J., & Paley, N. (Eds.). (1997). *Daredevil research: Re-creating analytic practice*. New York: Peter Lang.
- Kincheloe, J. L. (2004). The knowledges of teacher education: Developing a critical complex epistemology. *Teacher Education Quarterly*, 31(1), 49-66.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Lakoff, G., & Johnson, M. (1987). The metaphorical logic of rape. *Metaphor and Symbolic Activity*, 2(1), 73-79.
- Lortie, D. C. (1998, Summer). Teaching educational administration: Reflections on our craft. *Journal of Cases in Educational Leadership*, 1(1), 1-12. Retrieved October 25, 2005 from <http://www.ucea.org/cases>
- Michaelsen, L. K., Knight, A. B., & Fink, L. D. (Eds.). (2002). *Team-based learning: A transformative use of small groups*. Westport, CT: Praeger Publishers.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.
- Mullen, C. A. (2003). What is a scholar-practitioner? – K–12 teachers and administrators respond. *Scholar-Practitioner Quarterly*, 1(4), 9-26.
- Mullen, C. A. (2004). *Climbing the Himalayas of school leadership: The socialization of early career administrators*. Lanham, MA: Scarecrow.
- Mullen, C. A., & Fauske, J. R. (in press). The academy's zeitgeist – standards of scientific investigation: Exploring the impact on scholarly work. (Theme issue: National Issues Facing School Leaders.) *NCPEA Education Leadership Review*.
- Murphy, J., & Forsyth, P. B. (1999). A decade of change: An overview. In J. Murphy & P. B. Forsyth (Eds.), *Educational administration: A decade of reform* (pp. 3-38). Thousand Oaks, CA: Corwin.
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85-109.
- Schlosser, E. (2001). *Fast food nation: The dark side of the all-American meal*. New York: Perennial/Harper-Collins.
- Schön, D. A. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Schwab, J. J. (1969/2004). The practical: A language for curriculum. In D. J. Flinders, & S. J. Thornton (Eds.), *The curriculum studies reader* (2nd ed.) (pp. 103-117). New York: RoutledgeFalmer.
- Slattery, P. (2003). Troubling the contours of arts-based educational research. *Qualitative Inquiry*, 9(2), 192-197.
- York-Barr, J., & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Educational Research*, 74(3), 255-316.

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Self-Regulation in Academic Writing Tasks

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This study investigated writing beliefs, self-regulatory behaviors, and epistemology beliefs of preservice teachers in academic writing tasks. Students completed self-report measures of self-regulation, epistemology, and beliefs about writing. Both knowledge and regulation of cognition were positively related to writing enjoyment, and knowledge of cognition was negatively related to beliefs of ability as a fixed entity. Enjoyment of writing was related to learnability and self-assessment. It may be that students who are more self-regulated during writing also believe they can *learn* to improve their writing skills. It may be, however, that students who believe writing is learnable will exert the effort to self-regulate during writing. Student beliefs and feelings about learning and writing play an important and complex role in their self-regulation behaviors. Suggestions for instruction are included, and continued research of students' beliefs and self-regulation in naturalistic contexts is recommended.

"Why do we need to write another paper?" "I hate writing!" "I'm a terrible writer!" Remarks such as these may often be heard from the same students who plan careers that require a high degree of writing skills, such as education, science, or business. For many students, this transition between functioning as student writers and future writers in a discipline can be an awkward one (Herrington, 1985). Students may be unsure about the shift from "being receivers of teaching knowledge to being constructors of such knowledge" (Meyer, Flores-Duenas, & Rossi, 2000, p. 18).

This shift is especially problematic when the students involved are pre-service teachers. These learners are the future teachers who will be responsible for writing instruction in their classrooms, as well as constructing and integrating writing activities in multiple subjects to support their students' learning (Bandura, 1993; Bruning & Horn, 2000; Johannessen, 2001; Wade, 1995). Sitko (1998) has observed that "Writing is a complex activity. Learning how to write is even more complex" (p. 112). Educators might add that teaching pre-service teachers how to teach writing could be the most complex of all.

Review of the Literature

Writing is an essential part of thinking and learning in school contexts, particularly in light of 21st Century demands (e.g., Johannessen, 2001), and writing tasks are a "critical tool for intellectual and social development" (Bruning & Horn, 2000, p. 30). Academic writing may be assigned for a variety of educational goals: assessing knowledge, promoting critical thinking, stimulating creativity, encouraging discourse as part of a professional community, and supporting cognition (e.g., Bandura, 1993; Herrington, 1985; Johannessen, 2001; Langer, 1984, 2001; Raphael, Kirschner, & Englert, 1988). Therefore, students' ability to present

information and ideas through their writing has "an integral role in academic and professional success" (Applebee, Langer, Mullis, Latham, & Gentile, 1994, p. 25).

Furthermore, writing is a way for students in all content areas to make meaning for themselves (Bereiter & Scardamalia, 1987) as well as to learn how to think and communicate in their particular domains (Herrington, 1985). For example, writing is an important means through which students begin to think more like teachers, mathematicians, or scientists, and less like students learning course concepts primarily for assessment purposes. However, the ongoing concern about deficiencies of the writing quality of American students remains a focal topic of instruction and research.

Research Themes

Concern about the quality of students' writing performance has stimulated many research studies, along with encouraging a variety of instructional interventions and suggestions (e.g., Bereiter & Scardamalia, 1987; Langer, 2001; Zimmerman & Bandura, 1994). Many instructional recommendations for improving writing have included teaching writing strategies, such as explicit procedures for writing in various genres (e.g., Bereiter & Scardamalia, 1987; Crowhurst, 1991; Graham & Harris, 1997; Langer, 2001). For example, students who are taught explicit strategies for text organization produce higher quality essays than do students without strategy instruction (Crowhurst, 1991; Raphael & Englert, 1990).

Other instructional recommendations include developing students' motivation to write (Bruning & Horn, 2000; Zimmerman & Bandura, 1994). Specific examples of motivational recommendations include instructors modeling writing enjoyment (Draper,

Barkesdale-Ladd, & Radencich, 2000), strategy use, and writing success attributions to strategies (Zimmerman & Bandura, 1994). Other effective instructor practices include assigning writing tasks that require students' active engagement and higher-order thinking; these tasks are associated with less student boredom and higher degrees of intrinsic motivation (Miller, Adkins, & Hooper, 1993; Perry, 1998).

Also important when teaching writing is knowledge of one's students. This knowledge includes students' beliefs and behaviors such as their perceived self-efficacy for writing and self-regulation, as well as awareness of their learning beliefs and behaviors (Charney, Newman, & Palmquist, 1995; Palmquist & Young, 1992; Schraw & Dennison, 1994; Zimmerman & Bandura, 1994). For example, higher levels of perceived self-efficacy in writing are related to higher levels of strategy use and attribution to strategies (Zimmerman & Kitsantas, 1999). Students' writing self-efficacy is also related to their increased effort and mastery goals (Perry, 1998). Moreover, mastery goals in writing may be inversely correlated with students' apprehension about writing tasks (Pajares, Britner, & Valiante, 2000). In other words, students who want to learn and master writing report being less apprehensive about it.

The belief of writing as learnable is particularly important for pre-service teachers, especially since their own beliefs have the potential to affect the learning of many of their future students. It may be that if students believe that writing is a fixed ability, they may not see the value in academic writing tasks, writing-intensive courses, or in providing writing instruction to future students. Furthermore, instructors who understand their students have the potential to plan more effective instruction to include writing strategy knowledge and use, as well as self-motivation strategies (e.g., Pintrich, 2000; Zimmerman & Kitsantas, 1999). Therefore, it is important for instructors of pre-service teachers to know what their students believe about writing themselves and the writing tasks they are expected to master and ultimately teach.

Writing Beliefs and the Teacher's Role

In the writing research, the importance of classroom contexts in writing tasks is a recurrent theme (e.g., Graham & Harris, 1997; Langer, 2001; Palmquist & Young, 1992; Perry, 1998). Therefore, the teacher's role is critical, because the teachers are responsible for classroom learning activities, including writing tasks such as essay exams, reports, and journals. A clearer understanding of these classroom contexts is essential since teacher practices have the potential to influence students' beliefs about writing—both positively and

negatively (e.g., Draper et al., 2000; Palmquist & Young, 1992; Perry, 1998).

Research studies indicate that across a range of grades, teachers' practices can encourage or discourage students' self-regulated behaviors in writing tasks, including sustained effort and mastery orientation (Draper et al., 1998; Langer, 2000; Pajares et al., 2000; Perry, 1998). For example, students of varying ages report higher writing enjoyment when teachers encourage student selection of genre and topic (Daisey, 2003; Hammann, 2003). Also effective is explicitly teaching students to plan and organize in various genres. Students who have received this instruction have displayed a better understanding of the importance of planning in their writing (Bereiter & Scardamalia, 1987; Meyer, 1982) as well as being aware of choices as they weighed effort and outcomes in their writing tasks (Gordon, 1990a, 1990b). It seems important for educators to know when (and if) students are aware of these choices as they plan their writing tasks, and are able to make them.

Students' also report higher writing self-efficacy when teachers focus on mastery learning (Perry, 1998). In contrast, teachers who rely on drill and rote approaches to writing are described negatively by their students (Draper et al., 2000; Miller et al., 1993). In addition, activities of the "skill and drill" type were associated with higher levels of student boredom as well as lower levels of cognitive processing (Miller et al., 1993).

It would seem, then, that instructor awareness is crucial for planning effective learning opportunities with writing-related tasks. Therefore, this understanding of the teacher's role and classroom practices should begin with the education of pre-service teachers (Young, Grant, Montbrian, & Theriault, 2001). These individuals will be responsible for the writing practices in the 21st Century classroom with students from diverse cultural and linguistic backgrounds, as well as diverse ability levels (Fillmore & Snow, 2000; Johannesen, 2001).

Epistemology beliefs. Individuals' epistemological beliefs are important because the "explicit or implicit assumption...is that personal epistemological theories are precursors to various academic outcomes" (Pintrich, 2002, p. 406). Epistemology beliefs include beliefs about human knowledge and the process of knowing (Hofer, 2000; Schommer, 1990, 1998) as well as domain beliefs (Pintrich, 2002). An illustration would be students who believe that learning occurs quickly may not persist in a task if they do not master it immediately (Schommer, 1990).

Students' beliefs in the nature of learning may also differ across different content areas (e.g., Charney et al., 1994; Hofer, 2000; Schommer, 1993). For example, first-year college students majoring in psychology were

more likely to report "personal knowledge and firsthand experience as justification for knowing" (Hofer, 2000, p. 394) than were first-year science majors. These beliefs may hinder students' understanding of the importance of theories and research in a domain. Students' epistemological beliefs may have negative influences as well. For example, college-age students may be more resistant to learning to learn than younger students, even when faced with evidence that their previous strategies have been unsuccessful (Hofer, Yu, & Pintrich, 1998).

In the writing process, students' epistemological styles have been correlated with their enjoyment of writing as well as their beliefs about it (Charney et al., 1995). These researchers found that college students who believed that that writing was learnable also had positive feelings about writing, as well as high scores on epistemology evaluativism (beliefs that truth-seeking is an evaluative process). Perhaps students who have higher evaluativism beliefs appreciate the opportunities that writing can provide for them to discover and evaluate their own truths.

Writing beliefs. Academic writing is an area where students' beliefs have a particularly strong influence (Charney et al., 1995; Nelson, 1990; Palmquist & Young, 1992; Perry, 1998; Young et al., 2001; Zimmerman & Bandura, 1994). For example, in an introductory college composition course, students who reported believing that writing ability was a "gift" also reported high levels of writing apprehension and low levels of writing self-assessment (Palmquist & Young, 1992). In contrast, primary students in classrooms that promoted writing self-regulation, along with meaningful writing activities, reported more positive attitudes about writing and more reliance on writing strategies (Perry, 1998).

As with epistemology beliefs, differences in students' writing beliefs have also been reported across various content areas (e.g., Bridgeman & Carlson, 1984; Charney et al., 1995; Pajares et al., 2000). For example, Charney et al. found that students in upper-level courses reported liking writing better than did students taking freshmen composition courses, with humanities majors reporting the highest liking, followed by social sciences and business, with technical writing last. Interestingly, faculty from different content areas disagreed about the importance of writing (Bridgeman and Carlson, 1984). For example, in the areas of civil and electrical engineering, writing was rated as more important for professional success than for graduate work success. In studies of pre-service teachers, researchers have found students' writing beliefs range from viewing writing as an important part of their future classrooms (Draper et al., 2000) to stating that writing is the hardest language arts area to teach and will receive minimal instruction in their

future classrooms (Lickteig, Johnson, & Johnson's study as cited in Young et al., 2001).

Therefore, consideration of learners' perceptions about writing is particularly important for the instruction of pre-service teachers. However, the recommended focus on writing and writing instruction is not limited to language arts or composition classrooms but includes multiple domains where writing is used to support learning and cognitive development, assess knowledge acquisition, and stimulate creativity.

Writing and Self-Regulation

Self-regulation integrates learning behaviors or strategies, motivation, and metacognition (e.g., Pintrich, 2000; Schunk & Ertmer, 2000; Winne, 1995). In writing tasks, students' self-efficacy perceptions can be powerful predictors of their academic success (Zimmerman & Bandura, 1994), as well as influencing their effort and intrinsic motivation (Perry, 1998). In addition, writing tasks that require high levels of cognitive engagement are related to higher levels of intrinsic motivation and self-monitoring activities (Miller et al., 1993; Perry, 1998).

Students' knowledge of writing strategies may affect how they plan their writing, including content generation, use of library sources, and even choosing to plan at all (e.g., Bereiter & Scardamalia, 1987; Gordon, 1990b; Perry, 1998). For example, second- and third-graders have reported searching for more effective strategies on their own before asking for help (Perry, 1998). In addition, even the students identified as possessing low-ability ones were positive about the improvement in their writing and displayed a mastery focus.

It is not surprise, then, that instruction in self-regulatory strategies for academic writing is a recurring recommendation from research (e.g., Harris & Graham, 1996; Langer, 2001; Zimmerman & Risemberg, 1997). It may be that students' who are *taught* effective writing strategies will be able to attribute their writing difficulties to inappropriate strategy use rather than the lack of the "gift" of writing ability. On the other hand, it may be that students who believe that they are "poor writers," or that writing ability is a "gift," may not put forth the effort to learn and apply writing strategies, even when provided with appropriate instruction and support. An important goal is to better understand how writing self-regulatory processes develop (Zimmerman & Risemberg, 1997). Of equal concern is a clearer understanding of why students *do not* use self-regulation in writing activities (Graham & Harris, 1997; Zimmerman & Risemberg, 1997), even after explicit instruction.

The above recommendations have guided this study. This study was designed to provide information about the self-regulatory behaviors and beliefs of preservice teachers in academic writing tasks to guide future instruction and research. This study had three research questions: (a) What is the relationship between preservice teachers' epistemology beliefs and their writing beliefs? (b) What is the relationship between preservice teachers' writing beliefs and their self-regulation behaviors? (c) What is the relationship between preservice teachers' self-regulation behaviors and their epistemology beliefs?

Methods

Procedures

Data were collected as part of regular course requirements, but only students who gave consent had their measures used in the data analysis ($n = 82$). Measures were collected early in four semesters, except for rubrics for five field observation papers, which were completed as papers were due. Only field observation papers received grades (course requirement); other measures were recorded as completed/uncompleted.

Participants

Participants were preservice teachers (69 females, 13 males) at a large midwestern university. They met admission requirements to the College of Education, including completion of 30 credits and a grade of A or B in a required Composition I class. (Students whose grade was a C or below were required to pass the Praxis I Writing exam.) Sixty-five students identified themselves as "traditional," while the remaining 17 students identified themselves as non-traditional. However, this university is primarily a commuter campus, and many students take five or more years to complete their programs. These students were in their first series of education courses: Characteristics of Learners, and Teaching and Learning Strategies (educational psychology). The participants included students distributed across four course sections, two sections of Early Childhood, one each of Middle Childhood and Secondary. This class was blocked with a methods class, taught by another instructor.

Course writing requirements included five field observation papers, a comprehensive project, exam essays, and several short written assignments. Course requirements were standardized across all sections in compliance with department policy.

Measures

Self-report measures were chosen to collect quantitative and qualitative data, and students were instructed to answer in the context of the class. Quantitative measures included the following: (a) The Metacognitive Awareness Inventory (MAI; Schraw & Dennison, 1994); (b) the Epistemological Questionnaire (Schommer, 1998); (c) the Writing Attitudes Survey (Charney et al., 1995). These instruments were scored in accordance with previous researchers' procedures (Charney et al., 1995; Schommer-Aikins, personal communication, June 19, 2002; Schraw & Dennison, 1994). In addition, series of one-way ANOVAs for each measure was calculated to determine if there were statistically significant differences among the different sections on the three measures; no statistically significant differences were found, so data were combined across semesters.

The Metacognitive Awareness Inventory. The Metacognitive Awareness Inventory (MAI; Schraw & Dennison, 1994) was used to measure self-regulation. The MAI is a 52-item self-report instrument of adolescent and adult metacognitive awareness. The items are based on the Brown (1987) two-component model of metacognition, Knowledge of Cognition and Regulation of Cognition. Items load on two scales: Knowledge of Cognition and Regulation of Cognition. The Knowledge of Cognition scale is designed to reflect what students are aware of about their individual thinking processes. A typical item is "I am a good judge of how well I understand something." The Regulation of Cognition scale indicates learners' awareness of control of their learning processes, with items such as "I think of several ways to solve a problem and choose the best one." Students responded to these items by indicating degrees of agreement with each statement on a Likert-type scale, ranging from a score of one (Never True) to a score of five (Always True). Students' scores for each factor were determined by the loading scores from Schraw & Dennison (1994). Knowledge of Cognition scores ranged from 73-120, and Regulation of Cognition Scores ranged from 54-134.

The MAI has been demonstrated to have high internal consistency of the two factors, which are highly correlated and is a "reliable initial test of metacognitive awareness" (Schraw & Dennison, 1994, p. 472). Internal consistency statistics range from $r = .90-.95$ (Dennison, 1997). Furthermore, the researchers found the MAI to have strong predictive validity for test performance and self-monitoring in academic tasks. Subsequent studies with the MAI have supported these findings, including a test-retest reliability of about .85 (Sperling, 1997). However, further information about convergent, divergent, and construct validity was not available.

The Epistemological Questionnaire. The Epistemological Questionnaire (Schommer, 1998) is a self-report measure of students' beliefs about the nature of knowledge and knowing. It is made of up 63 items loading on four factors representing a range of personal epistemological beliefs: Fixed Ability, Simple Knowledge, Quick Learning, and Certain Knowledge. For example, the Fixed Ability factor indicates agreement with items such as "The ability to learn is innate" and disagreement with items such as "Students have a lot of control over how much they can get out of a textbook." An example of Simple Knowledge would be "Educators should know by now which is the best method, lectures or small group discussions." For the Quick Learning factor, a representative item is "Successful students understand things quickly." For Certain Knowledge, a typical item is "Truth is unchanging."

Schommer (1990; 1993) has reported reliability and validity testing for the Epistemological Questionnaire; the instrument reliably measures adolescents' and adults' epistemological beliefs and yields a four-factor model of epistemology. Schommer (1993) has reported test-retest reliability of .74, as well as interitem reliability of .63-.85. However, she (2002) has also pointed out that other instruments exist which yield different factor results. For example, disagreement exists about the nature of epistemological beliefs being independent of domains (e.g., Schommer-Aikens, 2002) or specific to them (e.g., Hofer, 2000). Therefore, Schommer-Aikens (2002) has recommended further research in measuring epistemological beliefs and development, including further studies with reliability and validity. Schommer (1993) has also reported that the EQ has predictive validity for academic performance. For example, individuals' high scores on Quick Learning were related to their academic performance: under-comprehension of a text task and over-confidence in that task.

Students responded to the items on the EQ by indicating degrees of agreement with each statement on a Likert-type scale, ranging from a score of one (Strongly Disagree) to a score of five (Strongly Agree). Factor analysis was not used because of the number of subjects, so the recommended method (M. Schommer, personal communication, June, 2002) included grouping students' scores according to factor loading typical of college students consistent with her previous research. This approach was followed, and the instrument is scored so that high scores indicate naïve perspectives, for example, Strongly Agree with "You can believe almost everything you read."

The Writing Attitudes Survey. This instrument, also self-report, measures students' beliefs about

writing, including the beliefs about writing as a learnable skill and/or a "gift" (Charney et al., 1994). This measure was constructed and tested by Palmquist and Young (1992) for college students to indicate their beliefs about writing, including indicating their beliefs that writing is a "gift" or a learnable skill, and the researchers reported that the measure has high internal validity for its factors (giftedness, apprehension, self-assessment). In both of the above studies, internal validity was determined by factor loadings from factor analysis (Palmquist & Young, 1992; Charney et al., 1995), with the second study's scores consistent with the first. For both studies, Cronbach's alpha was reported: Learnability (.67), Writing Apprehension (.82), and Writing Self-Assessment (.77) (Charney et al., 1995). The second group of researchers also renamed the "Apprehension" factor to "Enjoyment," explaining that they believed the items reflected enjoyment, rather than apprehension. However, they cautioned that "enjoyment and apprehension are not mutually exclusive emotional states" (p. 308). This more recent version of the instrument was the recommended version used in this research (M. Palmquist, personal communication, July, 2001).

The Writing Attitudes Survey consists of 12 items loading on three subscales, indicating students' beliefs relating to the components of learnability, enjoyment, and writing self-assessment. A typical item from the Writing is Learnable subscale is "Good teachers can help me become a better writer." Writing Enjoyment subscale items include "I enjoy writing" and "Writing is a lot of fun." A typical item from Writing Self-Assessment subscale is "I am a good writer." Students responded to these items by indicating degrees of agreement with each statement on a Likert-type scale, ranging from a score of one (Strongly Disagree) to a score of seven (Strongly Agree). Scores for each item are totaled for the three subscales, with individual student factor scores ranging from 4-28.

Design

This study was constructed as a descriptive study to examine beginning education majors' beliefs about writing and epistemology, as well as their reported self-regulatory behaviors. The study was initiated for gaining better understanding about students' attitudes about writing and learning, and as well as determining if these beliefs were related to self-regulated behaviors in writing tasks. It was hoped that the results from this study would provide the College of Education with knowledge for course instructors to better support students in writing tasks, as well as to lead to continued research in this area.

Results

Means and standard deviations were calculated for all subscales of the three instruments across all participants (see Table 1). Results of students' scores reported on each of the three measures are within typical ranges reported for comparable students in previous research with those measures: Writing Attitudes Survey (cf. Charney et al., 1995); Epistemological Questionnaire (cf. Schommer, 1998); The Metacognitive Awareness Inventory (cf. Schaw & Dennison, 1994).

TABLE 1
Means and Standard Deviations for the
Metacognitive Awareness Inventory,
Epistemological Questionnaire, and
Writing Attitudes Survey

	M	SD
Metacognitive Awareness Inventory		
Knowledge of Cognition	98.34	10.26
Regulation of Cognition	93.59	14.94
Epistemological Questionnaire		
Fixed Ability	8.59	2.20
Simple Knowledge	9.22	1.11
Quick Learning	4.10	0.89
Certain Knowledge	2.90	0.51
Writing Attitudes Survey		
Learnability	21.48	4.07
Writing Enjoyment	17.46	5.05
Writing Self-Assessment	16.74	3.95

Beliefs about Writing and Epistemology

The first research question addressed students' epistemology beliefs and their beliefs about writing. Research addressing learners' personal epistemological beliefs has a substantial history (Hofer & Pintrich, 2002). However, Pintrich (2002) has pointed out that research that examines possible relationships between personal epistemological beliefs and domain beliefs, and thinking and learning processes is still in its early stages. He has cautioned against trying "to specify the causal relationships between personal epistemologies and other academic outcomes, such as cognition, motivation, and learning" (p. 406). Therefore, zero-order correlations (Pearson) were first calculated to determine if relationships among students' reported personal epistemological beliefs, writing-related beliefs, and self-regulatory behaviors existed.

Writing beliefs. Several statistically significant relationships were found among subscales of the Writing Attitudes Survey. For example, Writing Enjoyment was positively correlated with Writing Learnability ($r = .33, p = .04$) and Writing Self-Assessment ($r = .60, p = .00$) (See Table 2). In other

words, students who reported enjoying writing also reported beliefs that writing is a learnable skill, as opposed to a "gift." Furthermore, students who enjoyed writing also reported higher self-perceptions of themselves as writers than students who did not consider writing to be an enjoyable task. These results are in accord with existing research and underscore the importance of motivational factors in the writing process (e.g., Bandura, 1993; Bruning & Horn, 2000; Hammann, 2003; Pajares & Johnson, 1994; Zimmerman & Kitsantas, 1999).

Because Writing Enjoyment had a strong statistically significant relationship with Writing Learnability and Writing Self-Assessment (the other two subscales on the Writing Attitudes Survey), it seemed important to try to tease out the influence of students' perceptions of Writing Enjoyment on other aspects of their writing behaviors and beliefs. Therefore, using Writing Enjoyment scores, I grouped the students into High and Low Enjoyment groups, divided at the median score (cf. Charney et al., 1995). A ANOVA was done, using High and Low Enjoyment groups as the independent variable and Learnability as the dependent variable. However, there was no statistically significant difference between high and low Enjoyment groups on the Learnability of writing ($F(1, 80) = 3.09, p = .08$) (See Table 3). In other words, students in the High Enjoyment group did not report statistically significant different beliefs about Learnability from students in the Low Enjoyment group.

Next, another ANOVA was done, using Writing Self-Assessment as the dependent variable. However, on Writing Self-Assessment, there was a statistically significant difference between the High and Low Enjoyability groups. Students in the High Enjoyment group had higher positive self-assessments as writers than did those in the Low Enjoyment group: $F(1, 80) = 19.47, p = .00$ (See Table 3). Perhaps students who enjoy writing do so because they believe that they are "good" writers. On the other hand, perhaps students who believe they are good writers enjoy writing and even exert more effort in writing tasks. The directionality of this relationship is a topic for future research.

Epistemological beliefs. Zero-order correlations were calculated between the four factors on the Epistemological Questionnaire and Writing Attitudes Survey (see Table 2). It had been hypothesized that Fixed Ability (EQ) or Quick Learning (EQ) would relate negatively to students' beliefs that writing is a learnable skill, and the relationships were negative ones: Writing Learnability and Fixed Ability, $r = -.26, p = .43$; Writing Learnability and Quick Learning, $r = -.26, p = .35$. Contrary to expectations, students'

TABLE 2
Correlations Among Epistemological Questionnaire Factors and Writing Attitudes Survey Factors

	Epistemological Questionnaire				Writing Attitudes Survey		
	1	2	3	4	5	6	7
Epistemological Questionnaire							
1. Fixed Ability	—	.17	.72*	-.02	-.26	-.30	-.01
2. Simple Knowledge		—	.20	.13	-.20	-.20	-.02
3. Quick Learning			—	-.08	-.26	-.15	.04
4. Certain Knowledge				—	.18	-.03	.13
Writing Attitudes Survey							
5. Learnability					—	.33*	.12
6. Enjoyability						—	.60*
7. Self-Assessment							—

* $p < .05$

responses did not show statistically significant relationships between their epistemology beliefs and their attitudes toward writing. Possibly the writing-intensive courses which most students had already taken may have influenced their responses. However, two scales from the EQ were significantly related: Fixed Ability and Quick Learning ($r = .72, p = .00$).

Because these results were contrary to hypothesized ones, a clearer picture of the relationship of students' beliefs with Writing Learnability seemed necessary. Therefore, the next step was determining whether or not students with high Learnability scores reported statistically different beliefs about epistemology factors from students with low Learnability scores. It was decided to divide students into groups, at the median, by their Learnability of Writing scores (WAS) (cf. Charney et al., 1995). Then series of ANOVAs was run, using High and Low Learnability groups the independent variables and the four Epistemological Questionnaire factors as dependent variables. As seen in Table 3, students in the High Learnability group had significantly lower scores on beliefs of Fixed Ability, $F(1, 80) = 5.87, p = .02$; and also in Quick Learning, $F(1, 80) = 5.37, p = .02$. In other words, students who did not think that writing was learnable, also believed that ability is fixed and that learning happens quickly (see Table 3).

Writing Beliefs and Self-Regulatory Behaviors

The focus of the second research question was the relationship between preservice teachers' beliefs about writing as a gift or learnable skill and their learning behaviors. In accordance with previous research, Knowledge and Regulation of Cognition (MAI) factors were strongly correlated ($r = .79, p = .00$) (see Table 4). In other words, students reporting high levels of awareness of their own thinking and learning processes also indicated high regulation of it. In a series of zero-order correlations (Pearson's r) Learnability and Writing Self-Assessment Subscales were non-significant with Knowledge or Regulation of Cognition but were significantly related to Writing Enjoyment ($r = .33, p = .00$; $r = .60, p = .00$, respectively) (see Table 4). Again, groups were split at the median in High and Low Enjoyment of writing. However, the only Writing Attitudes subscale significantly correlated with either MAI factor was the Writing Enjoyment Subscale: Knowledge of Cognition (KOC): $r = .38, p = .00$; Regulation of Cognition (ROC): $r = .40, p = .00$, respectively. Students who reported that they enjoyed writing also reported higher levels of self-regulatory behaviors: both knowing about, and regulating their own thinking processes (see Table 4).

TABLE 3
Mean Scores of High and Low Learnability Groups on Epistemological Questionnaire Measures

Epistemological Questionnaire Measure	Learnability			
	Low		High	
	(n = 42)		(n = 40)	
	M	SE	M	SE
Fixed Ability *	9.15	.33	8.00	.34
Simple Knowledge	9.44	.17	9.00	.17
Quick Learning *	4.31	.13	3.87	.14
Certain Knowledge	2.83	.08	2.97	.08

* $p < .05$

Note. High Scores in EQ Factors indicate more naïve perspectives.

TABLE 4
Correlations Among The Metacognitive Awareness Inventory Scales and the Writing Attitudes Survey

	Metacognitive Awareness		Writing Attitudes Survey		
	1	2	3	4	5
Metacognitive Awareness					
1. Knowledge of Cognition	—	.79*	.25	.38*	.15
2. Regulation of Cognition		—	.21	.40*	.09
Writing Attitudes Survey					
3. Learnability			—	.33*	.12*
4. Enjoyability				—	.60*
5. Self-Assessment					—

* $p < .05$

Writing Enjoyment was a statistically significant factor in Writing Self-Assessment ($r = .60, p = .00$). However, it was thought useful to determine if students who reported enjoying writing also reported engaging in more self-regulatory behaviors than students who did not enjoy writing. Therefore, using the existing High and Low Enjoyability groups as independent variables, a set of ANOVAs was run with Knowledge or Cognition, and Regulation of Cognition as dependent variables. There was a statistically significant difference for both Knowledge and Regulation of Cognition between High and Low Enjoyment of writing groups: Knowledge, $F(1, 80) = 7.50, p = .01$; Regulation $F(1, 80) = 8.70, p = .00$ (see Table 5). Clearly, students in the High Enjoyment group also reported significantly higher levels of self-regulated behaviors (Knowledge and Regulation of Cognition). Perhaps affective aspects of writing (such as enjoyment, fun) function as mediating forces for learning processes and self-regulatory behaviors (see Table 5).

Self-Regulatory Behaviors and Epistemological Beliefs

The third research question investigated preservice teachers' epistemology beliefs and learning behaviors.

As reported previously, the relationship between students' epistemological beliefs for Quick Learning and Fixed Ability (the EQ) were statistically significant ($r = .72, p = .00$) (see Table 6) 5). Perhaps these students believe that if they do not learn something immediately, then their ability in that area must be low. These individuals may even doubt their own capacities for mastering a topic (e. g. , Garner & Alexander, 1989). In addition, a statistically significant negative correlation was found between students' Knowledge of Cognition (MAI) and Fixed Ability (EQ): $r = -.37, p = .01$) (see Table 6). In other words, students believing ability is innate also reported low levels of Knowledge of Cognition (MAI).

Discussion and Recommendations

The main goal of this study was to gain a clearer understanding of the relationships among students' writing and epistemology beliefs, and their self-reported self-regulatory behaviors. It was also hoped that clearer knowledge of these relationships, and the importance of them, could serve to inform instructors of pre-service teachers in planning course writing tasks and instruction. Therefore, this study integrated

TABLE 5
Mean Scores of High and Low Writing Enjoyment Groups on Writing Learnability and Self-Regulation

	Enjoyment			
	Low (n = 42)		High (n = 40)	
	M	SE	M	SE
Writing Attitudes Survey				
Learnability	20.71	.62	122.28	.64
Writing Self-Assessment*	15.05	.56	118.53	.56
Metacognitive Awareness Inventory				
Knowledge of Cognition*	95.43	1.52	101.40	1.56
Regulation of Cognition*	89.05	2.20	198.38	2.26

* $p < .05$

TABLE 6
Correlations Among The Metacognitive Awareness Inventory Scales and Epistemological Questionnaire Factors

	Metacognitive Awareness			Epistemological Questionnaire		
	1	2	3	4	5	6
Metacognitive Awareness						
1. Knowledge of Cognition	—	.79*	-.37*	-.08	-.26	.23
2. Regulation of Cognition		—	-.28	-.14	-.16	.14
Epistemological Questionnaire						
3. Fixed Ability			—	-.17	.72*	-.02
4. Simple Knowledge				—	.20	.13
5. Quick Learning					—	-.08
6. Certain Knowledge						—

* $p < .05$

several key research strands: (a) preservice teachers' beliefs about writing (e.g., Draper et al. 2000; Palmquist & Young, 1992); (b) epistemology beliefs (e.g., Charney et al., 1994; Hofer, 2000; Pintrich, 2002; Schommer, 1990, 1998); (c) self-regulatory behaviors (e.g., Graham & Harris, 1997; Zimmerman & Risemberg, 1997); and (d) investigation in a naturalistic setting (e.g., Graham & Harris, 1997).

There were three research questions: (a) What is the relationship between preservice teachers' epistemology beliefs and their writing beliefs? (b) What is the relationship between preservice teachers' writing beliefs and their self-regulation behaviors? (c) What is the relationship between preservice teachers' self-regulation behaviors and their epistemology beliefs?

The first research question addressed relationships between preservice teachers' beliefs about writing and epistemology. Writing Enjoyment emerged as an important factor in the writing process. Writing Enjoyment was related to both Learnability of Writing and Writing Self-Assessment (WAS subscales). It may be that students who believe writing is a learnable skill enjoy the learning processes that writing evokes. It may also be that students who enjoy writing do so because they believe they are "good" writers. Interestingly, however, correlations among students' epistemology beliefs and writing attitudes were nonsignificant. It had been hypothesized that students who believed in ability as a fixed entity would also have correspondingly low scores on writing as learnable (e.g., Palmquist & Young, 1992). However, when students were divided into groups by High and Low beliefs of Writing Learnability, there was a statistically significant difference between group means on for both Fixed Ability and Quick Learning (EQ). Students in the low Writing Learnability group reported high beliefs in Fixed Ability and Quick Learning. It may be that students who believe ability is "fixed" or that learning must occur quickly may also believe that writing ability is a "gift" (cf. Palmquist & Young, 1992), not a learnable skill. The statistically significant correlation between Fixed Ability and Quick Learning

(Epistemological Questionnaire) also supports this finding.

For the second research question, addressing the relationship between preservice teachers' writing beliefs and self-regulatory behaviors (MAI), several points emerged. The relationship between both Knowledge of Cognition and Regulation of cognition were statistically significant, in accord with previous research (e.g., Schraw & Dennison, 1994). Also, students' high scores on both Knowledge and Regulation of Cognition were significantly related to their Writing Enjoyment scores. It may be that students who are self-regulated also enjoy writing more than students who are not. Because writing is a demanding and complex task, requiring high degrees of self-regulatory behaviors (Kellogg, 1987), students' perceptions of Writing Enjoyment may sustain them in necessary self-regulatory behaviors during the writing process.

The third research question addressed possible relationships between students' epistemological beliefs and their self-regulatory behaviors (MAI). Students' Knowledge of Cognition scores and their beliefs in Fixed Ability were found to be negatively related. It may be that students believe ability is a fixed entity because they are not aware of their own thinking processes. Perhaps if students do not believe that they can *learn to learn*, they may not try to become aware of their own cognition. Further research could help to determine if students are not aware of their own thinking processes, or if they even realize that this awareness is within their control.

This study had some limitations. A larger number of students could provide further support for the relationships seen in this study, particularly with regard to writing tasks. Also, the current study was focused on beginning education majors. However, further research could examine these writing-related factors across content areas and course levels.

Two key points emerged from this study. The first point underscores the necessity for instructors' awareness about the influence of students' writing beliefs and the relationship with writing self-

regulatory behaviors (e.g., Schraw & Dennison, 1994; Zimmerman & Bandura, 1994). The second point reinforces the importance of motivational factors in the writing process. Teachers are responsible for creating motivational conditions for writing in a classroom; and instructors' "own conceptions of writing are seen as crucial..." (Bruning & Horn, 2000, p. 1).

The findings from the current study provide support for several recommendations for instructors in planning writing activities, taking into account students' individual characteristics, including personal goals (Lin & Zabucky, 1998), writing self-assessments (Palmquist & Young, 1992), and self-efficacy (Zimmerman & Bandura, 1994). First, instructors should elicit information about students' writing experiences, learning behaviors, and beliefs. Although few instruments are available to assess writing beliefs, other research-validated measures exist that can provide instructors and their students with valuable information about self-regulation behaviors, for example, The Motivated Strategies for Learning Questionnaire (MSLQ), and The Learning and Study Strategies Inventory (LASSI) (cited in Winne & Perry, 2000); The Metacognitive Awareness Questionnaire (MAQ) (as cited in Sperling, 1997). For epistemology beliefs in addition to the Epistemological Questionnaire used in this study, measures include the Epistemic Belief Inventory (EBI) and the Reflective Judgment Interview (RJI) (cited in Hofer & Pintrich, 2002). In addition, instructors should encourage students to examine their beliefs about writing and learning, and the relationships of these beliefs with their behaviors (Mallette et al., 2000). Then this information should be used to plan course writing tasks and instruction. For example, instructors should present writing as a learnable skill, providing explicit instruction of writing strategies and procedures along with opportunities for mastery (e.g., Hammann, 2003; Harris & Graham, 1996; Palmquist & Young, 1994). Instructors also should guide students' self-reflections to encourage attribution to their own effort and appropriate strategy use (Alderman, 1995; Ames, 1992) instead of some elusive "giftedness."

Second, writing tasks should be within students' capabilities, and instructors should provide explicit writing strategy instruction to support students' self-regulation, include goal-setting and scaffolding (e.g., Armbruster, Anderson, & Ostertag, 1987; Harris & Graham, 1996; Johannessen, 2001; Langer, 2001; Radmacher & Latosi-Sawin, 1995; Zimmerman & Kitsantas, 1999). Students who have knowledge of writing strategies have powerful cognitive and

metacognitive strategies to support them in their learning, strategies that support them in the challenge of "what to say" and "how to say it" (e.g., Bereiter & Scardamalia, 1987). For example, in summary writing, the instructor could begin by asking students what a summary is, why it is useful; then teach summary rules, and planning steps, even providing a summary planner, as they scaffold students to mastery in the writing task (Hammann & Stevens, 2003).

Third, instructors must be aware of the powerful role of motivational factors, such as students' perceptions of themselves as writers and the role of self-efficacy in writing tasks (Zimmerman & Bandura, 1994). For example, the pre-service teachers in this study who enjoyed writing also had higher self-assessments of themselves as writers than did those students who did not find writing enjoyable. Their enjoyability of writing was also significantly related to their beliefs that writing is learnable. For example, students who have been taught text organization strategies have shown increased awareness of writing to communicate with someone, including heightened awareness that reading and writing are connected processes (Raphael & Englert, 1990; Gordon, 1990a). Perhaps students who are more aware of own their thinking as they write also value writing as a means of communication, self-expression, and constructing knowledge.

Fourth, engaging writing tasks can support students in making their own meaning of course concepts and providing them with the opportunity to think like future teachers (or historians or scientists) themselves (Bereiter & Scardamalia, 1987; Draper et al., 2000; Mallette et al., 2000; Penrose & Geisler, 1994). Results from the study indicated that student with high levels of writing enjoyment also reported high levels of cognitive involvement. For example, in an educational psychology course, pre-service teachers can be asked to compare and contrast the theories of Piaget and Vygotsky and apply these concepts to their future learners in a content area and grade level. These practices may support students in the challenging transition between being student writers and being part of a community of other professionals.

Instructors who have a clear understanding of their own and their students' beliefs about writing, learning, and self-regulation have the potential to produce new teachers or scientists or historians with strong writing skills who write and communicate effectively in their learning communities. The task we face is challenging, but essential and attainable.

References

- Alderman, M. K. (1999). *Motivation for achievement: Possibilities for teaching and learning*. Mahwah, N.J.: Erlbaum.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261-271.
- Applebee, A. N., Langer, J. A., Mullis, I. V. S., Latham, A. S., & Gentile, C. A. (1994). *NAEP Writing 1992 Writing Report Card*. (Report 23-W01). Princeton, NJ: National Assessment of Educational Progress.
- Armbruster, B. B., Anderson, T. H., & Ostertag, J. (1987). Does text structure/ summarization instruction facilitate learning from expository text? *Reading Research Quarterly*, 22, 331-346.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28, 117-148.
- Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition*. Hillsdale, NJ: Erlbaum.
- Bridgeman, B., & Carlson, S. B. (1984). Survey of academic writing tasks. *Written Communication*, 1, 247-280.
- Bruning, R., & Horn, C. (2000). Developing motivation to write. *Educational Psychologist*, 35, 25-37.
- Charney, D., Newman, J. H., & Palmquist, M. (1995). "I'm just no good at writing": Epistemological style and attitudes toward writing. *Written Communication*, 12, 298-329.
- Crowhurst, M. (1991). Interrelationships between reading and writing persuasive discourse. *Research in the Teaching of English*, 25, 314-338.
- Daisey, P. (2003). *The reading and writing habits and attitudes of secondary preservice teachers: Implications for content area literacy course pedagogy*. Paper presented at 2003 College Reading Association Conference, Corpus Christi, TX.
- Dennison, R. S. (1997). *Relationships among measures of metacognitive monitoring*. Paper presented at the annual meeting of the American Educational Association, Chicago, IL.
- Draper, M. C., Barksdale-Ladd, M. A., & Radencich, M. C. (2000). Reading and writing habits of preservice teachers. *Reading Horizons*, 40, 185-203.
- Fillmore, L. W., & Snow, C. E. (2000). *What teachers need to know about language* (Center for Applied Linguistics Report ED-39-CO-008). Washington, D. C.: Office of Educational Research and Improvement.
- Garner, R., & Alexander, P. A. (1989). Metacognition: Answered and unanswered questions. *Educational Psychologist*, 24, 143-158.
- Gordon, C. (1990a). Contexts for expository text structure use. *Reading Research and Instruction*, 29, 55-72.
- Gordon, C. (1990b). Changes in readers' and writers' metacognitive knowledge: Some observations. *Reading Research and Instruction*, 30, 1-14.
- Graham, S., & Harris, K. R. (1997). Self-regulation and writing: Where do we go from here? *Contemporary Educational Psychology*, 22, 102-114.
- Halpern, D. F. (1998). Teaching critical thinking for transfer across domains: Dispositions, skills, structure training, and metacognitive monitoring. *American Psychologist*, 53, 449-455.
- Hamman, L. A. (2003). *Untangling attribution, self-efficacy, and writing beliefs: Writing instruction for pre-Service teachers*. Paper presented at the 2003 College Reading Association Conference, Corpus Christi, TX.
- Hamman, L. A., & Stevens, R. J. (2003). An investigation of instruction in summarizing and text structure for compare-contrast writing. *The Journal of Literacy Research*, 35, 731-754.
- Harris, K., R., & Graham, S. (1996). *Making the writing process work: Strategies for composition and self-regulation*. Cambridge, MA: Brookline.
- Herrington, A. J. (1985). Writing in academic settings: A study of the contexts for writing in two college chemical engineering courses. *Research in the Teaching of English*, 19, 331-361.
- Hofer, B. K. (2000). Dimensionality and disciplinary differences in personal epistemology. *Contemporary Educational Psychology*, 25, 378-405.
- Hofer, B. K., & Pintrich, P. (2003). *Personal epistemology: The psychology of beliefs about knowledge and knowing*. New Jersey: Erlbaum.
- Hofer, B. K., Yu, S. L., & Pintrich, P. R. (1998). Teaching college students to be self-regulated learners. In D. H. Schunk & B. J. Zimmerman (Eds.) *Self-regulated learning: From teaching to reflective practice* (pp. 57-85). New York: The Guilford Press.
- Johannessen, L. R. (2001). Teaching thinking and writing for a new century. *English Journal*, 90, 38-46.
- Kellogg, R. T. (1987). Writing performance: Effects of cognitive strategies. *Written Communication*, 4, 269-298.
- Langer, J. A. (1984). The effects of available information on responses to school writing tasks. *Research in the Teaching of English*, 18, 27-44.
- Langer, J. A. (2001). Beating the odds: Teaching middle and high school students to read and write well. *American Educational Research Journal*, 38, 837-880.

- Lin, L-M, & Zabrocky, K. M. (1998). Calibration of comprehension: Research and implications for education and instruction. *Contemporary Educational Psychology*, 23, 354-391.
- Mallette, M. H., Kile, R. S., Smith, M. M., McKinney, M., & Readence, J. E. (2000). Constructing meaning about literacy difficulties: preservice teachers beginning to think about pedagogy. *Teaching and Teacher Education*, 16, 593-612.
- Meyer, B. J. F. (1982). Reading research and the composition teacher: The importance of plans. *College Composition and Communication*, 33, 37-49.
- Meyer, R. J., Flores-Duenas, & Rossi, P. (2000). *Methods courses, so what? Preliminary findings of a longitudinal study*. Paper presented at the annual meeting of the National Reading Conference, Phoenix, AZ.
- Miller, S. D., Adkins, T., & Hooper, M. L. (1993). Why teachers select specific literacy assignments and students' reactions to them. *Journal of Reading Behavior*, 25, 69-95.
- Nelson, J. (1990). This was an easy assignment: Examining how students interpret academic writing tasks. *Research in the Teaching of English*, 24, 372-396.
- Pajares, F., Britner, S. L., & Valiante, G. (2000). Relation between achievement goals and self-beliefs of middle school students in writing and science. *Contemporary Educational Psychology*, 25, 406-422.
- Pajares, F., & Johnson, M. J. (1994). Confidence and competence in writing: The role of self-efficacy, outcome expectancy, and apprehension. *Research in the Teaching of English*, 28, 313-331.
- Palmquist, M., & Young, R. (1992). The notion of giftedness and student expectations about writing. *Written Communication*, 9, 137-169.
- Penrose, A. M., & Geisler, C. (1994). Reading and writing without authority. *College Composition and Communication*, 45, 505-520.
- Perry, N. E. (1998). Young children's self-regulated learning and contexts that support it. *Journal of Educational Psychology*, 90, 715-729.
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 452-502). New York: Academic Press.
- Pintrich, P. R. (2002). Future challenges and directions for theory and research on personal epistemology. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 389-414). New Jersey: Lawrence Erlbaum.
- Radmacher, S. A., & Latosi-Sawin, E. (1995). Summary writing: A tool to improve student comprehension and writing in psychology. *Teaching of Psychology*, 22, 113-115.
- Raphael, T.E., & Englert, C.S. (1990). Writing and reading: Partners in constructing meaning. *The Reading Teacher*, 43, 388-400.
- Raphael, T. E., Kirschner, B. W., & Englert, C. S. (1988). Expository writing program: Making connections between reading and writing. *The Reading Teacher*, 41, 790-795.
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology*, 82, 498-504.
- Schommer, M. (1993). Epistemological development and academic performance among secondary students. *Journal of Educational Psychology*, 85, 406-411.
- Schommer, M. (1998). The influence of age and schooling on epistemological beliefs. *The British Journal of Educational Psychology*, 68, 551-562.
- Schommer-Aikens, M. (2002). An evolving theoretical framework for an epistemological belief system. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 103-118). Hillsdale, NJ: Erlbaum.
- Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19, 460-475.
- Schunk, D. H., & Ertmer, P. A. (2000). Self-regulation and academic learning: Self-efficacy enhancing interventions. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 631-650). New York: Academic Press.
- Sitko, B. M. (1998). Knowing how to write: Metacognition and writing instruction. In Hacker, D. J., Dunlosky, J., & Graesser, A. C. (Eds.), *Metacognition in educational theory and practice* (pp. 93-116). Hillsdale, NJ: Erlbaum.
- Wade, C. (1995). Using writing to develop and assess critical thinking. *Teaching of Psychology*, 22, 24-28.
- Winne, P. H. (1995). Inherent details in self-regulated learning. *Educational Psychologist*, 30, 173-188.
- Winne, P. H., and Perry, N. E. (2000). Measuring self-regulated learning. In M. Boekaerts, P. R. Pintrich, and M. Zeidner (Eds.) *Handbook of self-regulation* (pp. 532-566). New York: Academic Press.
- Young, E. E., Grant, P. A., Montbriand, C., & Therriault, D. J. (2001). *Educating preservice teachers: The state of affairs*. Naperville, IL: North Central Regional Educational Laboratory.
- Zimmerman, B. J. & Bandura, A. (1994). Impact of self-regulatory influences of writing course

attainment. *American Educational Research Journal*, 31, 845-862.

Zimmerman, B. J., & Kitsantas, A. (1999). Acquiring writing revision skill: Shifting from process to outcome self-regulatory goals. *Journal of Educational Psychology*, 91, 241-250.

Zimmerman, B. J., & Risemberg, R. (1997). Caveats and recommendations about self-regulation of writing: A social cognitive rejoinder. *Contemporary Educational Psychology*, 22, 115-122.

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College Students' Goal Orientations and Achievement

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Theorists in the area of academic motivation have distinguished between mastery goals (develop understanding) and performance goals (demonstrate ability). Numerous research studies have empirically examined the implications these "constructs" have for understanding students' performance in the classroom. Traditionally, mastery goals have been associated with adaptive learning outcomes while performance goals have been associated with maladaptive learning outcomes. Recently, however, theorists have suggested that students might hold both mastery and performance goals and that both goals can be beneficial. This study compared the achievement patterns of students who held both goals simultaneously to students who held either mastery or performance goals only. Data was collected within a foundational teacher education course from 143 students, a portion of whom were found to hold high mastery goals (mastery oriented), high performance-approach goals (performance-approach oriented), and high mastery and high performance goals (multiple goal orientation). Using course grades as an indicator of achievement, a one-way ANOVA showed no significant difference between the multiple goal group and the single goal groups. However, a significant difference was found between the high mastery group and the high performance group.

As college educators, we may wonder why some students seem to work harder in their studies than others. For instance, we may ask ourselves, why do some of the students do the required readings while others never open the textbook? Why do some students use superficial learning strategies, such as rote memorization, while others use more sophisticated strategies, such as elaboration? Why do some students ask for help while others do not? The answers to these questions have a great deal to do with students' motivation and have consequences for their current and future academic achievement. For example, students who want to understand course material will most likely read the assigned readings, use sophisticated learning strategies, and ask for help when they are confused which will lead to higher academic achievement.

One of the most applicable and predominant theories used to understand students' academic motivation is achievement goal theory (Pintrich & Schunk, 1996). Achievement goal theory posits that individuals engage in academic activities to fulfill different goals. Some students are motivated to do well because they want to earn an "A" in the course, thus demonstrating to themselves, their peers, professors, and even parents that they are smart (performance-approach goal). Some students may strive to avoid exposing to others their inability to do something (performance-avoidance goal). Still other students are less concerned with demonstrating their ability and more concerned with understanding the course material and developing their ability in a given domain (mastery goal). In the early conception of achievement goal theory the distinction between performance-approach and performance-avoidance goals was not made and therefore researchers viewed performance goals in general as being associated with avoiding challenges,

not asking for help, and the use of superficial learning strategies. However, recently researchers in the area of motivation have found that performance-approach goals are associated with higher grades (Church, Elliot, & Gable, 2001; Harackiewicz, Barron, Elliot, Carter, & Thrash, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000) and are not associated with use of superficial learning strategies (Archer, 1994; Pintrich & Garcia, 1991) and therefore should not be considered as maladaptive to student learning. The argument in this paper, as in others (Midgely, Kaplan, & Middleton, 2001), is that more studies should be done to determine if these performance-approach goals are actually beneficial to all students in all situations. Are performance-approach goals a better predictor of achieving high grades than mastery goals, trying to develop understanding and ability over time? Furthermore, if performance-approach goals predict achievement and mastery goals predict interest, is it more beneficial for college students to hold mastery and performance-approach goals (multiple goal orientation) rather than just mastery goals (single goal orientation) or just performance-approach goals (single goal orientation)? The purpose of this study was to determine whether having a multiple goal orientation or a single goal orientation is more beneficial to college students' achievement.

Review of the Literature

From a cognitive perspective, "motivation is the process whereby goal-directed activity is instigated and sustained" (Pintrich & Schunk, 1996, p. 4). To know what motivates students, researchers and educators must observe their behavior and make inferences about their motivation. One type of inference that can be

made about students' motivation is the goals they adopt. Goals provide students with direction and a purpose to engage in an activity (Pintrich & Schunk, 1996). Some educational psychologists think that motivation to achieve in school can be understood in terms of the different goals students bring to the situation (Ames, 1992; Dweck & Legget, 1988; Elliot & Dweck, 1988). The theory posits that students can have either *performance* goals or *mastery* goals. The two goals are seen as generating two distinct frameworks for processing information. Mastery goals allow individuals to seek opportunities to increase their competence and master new challenges (Dweck, 2000). Students who pursue mastery goals are concerned with developing their ability over time and acquiring the skills needed to master a particular task. When individuals with mastery goals experience failure they interpret the event as providing information regarding their effort in that particular situation and attribute failure to a lack of effort or ineffective strategy use (Dweck, 2000; Elliot & Dweck, 1988).

Previous research has shown that those who pursue mastery goals tend to seek more challenges, have higher reported use of effective learning strategies, including metacognitive strategies, report more positive attitudes towards school, and have a higher level of self-efficacy (belief in one's ability to succeed in a given situation) than those individuals who pursue performance goals (Ames, 1992; Ames & Archer, 1988; Elliot & Dweck, 1988; Middletown & Midgley, 1997; Pintrich, 2000; Wolters, 2004).

Performance goals encourage individuals to seek and maintain a positive image of their ability. Students achieve this end by pursuing one of two types of performance goals. Initially performance goals (as a whole) were seen as being maladaptive for learning. However, recent researchers have posited that the outcomes related to performance goals categorized as being approach (demonstrating ability) are different than outcomes related to performance goals categorized as being avoidance (avoidance demonstrating lack of ability) (Church, Elliot, & Gable, 2001; Elliot & Harackiewicz, 1996). For example, performance-approach goals are related to more positive outcomes, such as use of cognitive strategies (Pintrich, 2000; Wolters, Yu, & Pintrich, 1996), and course achievement (Church, et al., 2001; Elliot & Church, 1997; Harackiewicz, et al., 2000) while performance-avoidance goals are related to negative outcomes (superficial learning strategies, lower performance, self-handicapping behavior, undermined intrinsic motivation).

If performance-approach goals actually help students obtain high achievement then perhaps pursuing both mastery and performance-approach goals simultaneously (a multiple goal orientation) is the most

adaptive goal orientation for students to adopt (Barron & Harackiewicz, 2001). Research has shown that a multiple goal orientation can promote positive learning outcomes for students (Harackiewicz, et al., 2000; Harackiewicz, Barron, Tauer, & Elliot, 2002; Pintrich 2000). While mastery goals help promote interest, performance-approach goals work to promote higher levels of performance. When mastery goals are coupled with performance-approach goals students not only have a desire to increase their competence, but also to demonstrate their ability and thus perform well in evaluative situations (Barron & Harackiewicz, 2001). Pintrich (2000) found that students who reported having both high mastery and high performance-approach goals were not more anxious, did not experience more negative affect, and did not engage in more self-handicapping behavior than the students with predominately-high mastery/low performance-approach goals. However, the positive outcomes associated with performance-approach goals were found only when paired with mastery goals; therefore, mastery goals are a necessary part of the equation (Pintrich, 2000).

Midgley et al. (2001) suggested that more studies need to be done to explore the effects of adopting performance-approach goals before confirming that they are related to positive learning behaviors and beliefs, and thus achievement. Research on the positive effects of performance-approach goals is mixed. These goals seem to be beneficial for certain types of individuals (e.g., boys, older students), under certain types of conditions (e.g., competitive environments, situations where mastery goals are also present), and come at some cost (e.g., cheating, reluctance to cooperate with others, use of avoidance strategies) (Midgley, et al., 2001).

Given that the context of some college classrooms can be competitive with students feeling the need to earn high GPAs while other college instructors stress the importance of understanding the material, the college classroom seemed like a relevant context in which to test the multiple goal orientation. Indeed, the competitive nature of the college classroom along with the population of older (i.e., traditional college aged compared to elementary and middle school children) students provided a context in which performance-approach goals have been purported to be associated with high level of achievement (Harackiewicz, et al., 2000; Harackiewicz, et al., 2002). The purpose of this study was to determine whether students who identified themselves as having a multiple goal orientation (those who endorsed both mastery and performance-approach goals) outperformed their peers who identified themselves as having a single goal approach (i.e. those who endorsed only mastery goals or only performance-approach goals).

Method

Participants

The participants were 143 undergraduate students, 134 females and 9 males, enrolled in a Human Development course at a public university. Data were collected in the Human Development course taught in the Spring and Fall semester by the same professor. All of the participants identified themselves as either Elementary Education majors or majors in the College of Human Services Education and Public Policy. Of the 143 participants there were 108 freshman, 24 sophomores, 9 juniors, and 2 seniors.

Setting

The Human Development course was a required course for education majors. The course has approximately 80-90 students enrolled each semester and consists mostly of lectures with about seven opportunities for students to engage in cooperative learning. Students were also individually required to complete seven tutoring sessions in the local elementary schools and write a report on their experience towards the end of the semester. Achievement in the course was based on a point system with students having the opportunity to earn a total of 200 points. One hundred and thirty-five of those points came from three multiple choice, non-cumulative 45-point exams. The tutoring report consisted of 50 points while group work contributed 15 points towards the total.

Measures

The Motivation Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1991) is a two-part questionnaire designed to assess college students' motivational orientations and learning strategies for a particular college course (Pintrich, et al., 1991). The MSLQ was chosen in part because it was a well-established measure for mastery and performance goals and because it was a short measure that would not take students long to complete and therefore did not take time away from the instructor's teaching. For the purposes of this study, students completed the 8-item section of the MSLQ that assessed motivational orientations. Four of the items assessed the degree to which the students endorsed mastery goals and four items assessed the degree to which the students endorsed performance-approach goals. The MSLQ only measures performance-approach goals and because these were the type of performance-goals in question, students' performance-avoidance goals were not measured. Participants rated how much

they agreed or disagreed with each statement on a 7-point likert scale. Their responses to the four mastery and the four performance-approach statements were summed individually to form a total mastery and a total performance-approach goal score. From these scores, median splits were used to categorize participants into achievement goal groups. The maximum score on both the mastery and performance goal orientation was 28. The internal consistency reliabilities, based on Cronbach's alpha, were .77 for the mastery items and .66 for the performance-approach items.

Students who scored at or above 20 on mastery were classified as having high-mastery goals and those who scored below 20 were classified as low-mastery goals. Students who scored at or above 22 on performance-approach were classified as high-performance goals while students who scored below 22 were classified as low-performance-approach goals. This procedure resulted in approximately 28% ($n = 40$) of the students being classified as being high mastery/high performance-approach (multiple goal orientation), 27% ($n = 39$) as being high mastery/low performance-approach (mastery orientation), 24% ($n = 35$) as being low mastery/high performance-approach (performance-approach orientation), and 20% ($n = 29$) as being low mastery/low performance-approach.

Procedure

Students enrolled in the course were asked to read and sign a consent form if they agreed to participate in the study. After giving their informed consent, students completed a portion of the MSLQ during one of their regular class sessions at approximately three weeks into the semester. The 8-item questionnaire took students approximately 10 minutes to complete. At the end of the semester, students' final course grades were collected. A final course grade of an A was coded as 4.0, A- as 3.76, B+ as 3.33, B as 3.0, B- as 2.76, C+ as 2.33, C as 2.0, C- as 1.76, D+ as 1.33, D as 1.0 and D- as .76.

Results

Table 1 shows that all achievement goal groups did quite well in the course. The high mastery/low performance-approach group (mastery goal orientation) performed the best, followed by the high mastery/ high performance-approach group (mastery/performance-approach group), and the low mastery/low performance-approach group, with low mastery/high performance-approach group (performance-approach group) performing the worst. A one-way analysis of variance was performed on the data to determine which achievement goal group attained higher academic achievement. Results revealed a main effect for

achievement group ($F(3,139) = 3.28, p < 0.05$). A Tukey post-hoc analysis revealed that the mastery goal group achieved higher course grades than the performance-approach goal group. There was no statistically significant difference between the mastery/performance-approach goal orientation and the mastery goal orientation with respect to course grades.

TABLE 1
Mean Course Grade by Achievement Goal Group¹

Mastery Goal	Performance-Approach Goal	
	Low	High
Low	3.2 (0.71)	3.0 (0.75)
High	3.5 (0.54)	3.3 (0.65)

Note. The higher the score, the higher the course grade.

¹ Standard deviations are in parentheses.

Discussion

The purpose of this study was to determine if students who had both mastery and performance-approach goals (multiple goal orientation) outperformed their peers who had only performance-approach goals (single goal orientation) or only mastery goals (single goal orientation). The results suggest that college students with multiple goals (high mastery and high performance-approach) did not perform significantly better than students with only high mastery or high performance-approach goals. However, students who adopted a mastery single goal orientation (high mastery/low performance-approach goals) demonstrated higher levels of academic achievement than students with a performance-approach single goal orientation (low mastery/high performance goals).

In explaining the difference in the mastery goal group from the performance-approach goal group with respect to academic achievement it must first be pointed out that the findings of this study are contrary to numerous studies that have found college students' endorsement of mastery goals to be unrelated to their grades (Barron & Harackiewicz, 2001; Elliot & Church, 1997; Elliot, McGregor, & Gable, 1999; Harackiewicz, et al., 2000). Furthermore, similar studies have found college students' endorsement of performance-approach goals to be positively related to their course grades (Church, et al., 2001; Elliot & Church, 1997; Harackiewicz, et al., 2000).

The results of this study did not find performance-approach goals to be significantly related to course grades. Without knowing what other variables (e.g. test anxiety, learning strategies, self-efficacy) may have played a role in the lower performance of the performance-approach group, one can only speculate as to why this relationship failed to exist.

Limitations and Future Directions

Further studies should be done to determine whether the results of this study are representative. In the current study, surveys were used to measure students' achievement goals. Surveys may not be the best way to determine what goals college students actually hold. Students may have answered the questions on the survey with socially desirable responses. Perhaps interviews with students would have allowed for more contextual and thus more honest responses. For example, students could be probed to think about certain academic situations (i.e., studying for the last exam they took) and asked about their reason(s) for engaging in that particular task. It is also important to recognize that an 8-item questionnaire might not provide a sufficiently robust measure of goal orientations. Perhaps a different questionnaire with more questions could increase the reliability and validity of such a measure.

Lastly, it should be noted that no prior measure of student achievement was taken before the MSLQ was administered. It is conceivable to think that students who held high mastery goals had a higher ability level than students holding other types of goals; therefore, their grades would be higher regardless of their achievement goals. However, because of the lack of variability in grades, one could assume that the students in this sample were fairly similar with respect to ability. Future studies should include a measure of achievement, such as GPA, to control for the possible effects of prior achievement.

Conclusion

To understand the academic behaviors of college students that consequently affect their achievement researchers and educators must begin by understanding what motivates college students to engage in such behaviors in the first place. Many students are motivated in courses by mastery goals, performance-approach goals, or a combination of both. For college educators, the important question is what goals are related to developing an understanding of course material, as well as good grades. The findings of this study suggest that mastery goals are related to the attainment of good grades. The findings of this study coupled with the large body of research that has found mastery goals to be related to understanding, interest, and the use of sophisticated learning strategies provides evidence that mastery goals are more beneficial to students than performance-approach goals. Thus, college educators should first, and foremost, encourage the endorsement of such goals.

References

- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80*, 260-267.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261-271.
- Archer, J. (1994). Achievement goals as a measure of motivation in university students. *Contemporary Educational Psychology, 19*, 430-446.
- Barron, K.E., & Harackiewicz, J.M. (2001). Achievement goals and optimal motivation: Testing multiple goal models. *Journal of Educational Psychology, 80*, 706-722.
- Church, M.A., Elliot, A.J., & Gable, S.L. (2001). Perceptions of classroom environment, achievement goals, and achievement outcomes. *Journal of Educational Psychology, 93*, 43-54.
- Dweck, C.S. (2000). *Self-theories: Their role in motivation, personality, and development*. Lillington, NC: Taylor & Francis.
- Dweck, C.S., & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273.
- Elliot, E.S., & Church, M.A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72*, 218-232.
- Elliot, E.S., & Dweck, C.S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology, 54*, 5-12.
- Elliot, E.S., & Harackiewicz, J.M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 70*, 461-475.
- Elliot, E.S., McGregor, H.A., Gable, S.L. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology, 91*, 549-563.
- Epstein, J.L. (1987). *TARGET: An examination of parallel school and family structures that promote student motivation and achievement*. (Tech. Rep.No.6). Baltimore, MD: Johns Hopkins University, Center for Research on Elementary and Middle Schools.
- Harackiewicz, J.M., Barron, K.E., Elliot, A.J., Carter, S.M., & Lehto, A. (1997). Predictors and consequences of achievement goals in the college classroom: Maintaining interest in making the grade. *Journal of Personality and Social Psychology, 73*, 1284-1295.
- Harackiewicz, J.M., Barron, K.E., Tauer, J.M., Carter, S.M., & Elliot, A.J. (2000). Short-term and long-term consequences of achievement goals: Predicting interest and performance over time. *Journal of Educational Psychology, 92*, 316-330.
- Harackiewicz, J.M., Barron, K.E., Tauer, J.M., & Elliot, A.J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*, 562-575.
- Middleton, M.J., & Midgely, C. (1997). Avoiding the demonstration of lack of ability: An underexplored aspect of goal theory. *Journal of Educational Psychology, 89*, 710-718.
- Midgley, C., Kaplan, A., & Middleton, M. (2001). Performance-approach goals: Good for what, for whom, under what circumstances, and at what cost? *Journal of Educational Psychology, 93*, 77-86.
- Pintrich, P.R. (2000). Multiple goals, multiple pathways: The role of goal orientations in learning and achievement. *Journal of Educational Psychology, 92*, 544-555.
- Pintrich, P.R., & DeGroot, E.V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.
- Pintrich, P.R., & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M.L. Maehr, & P.R. Pintrich (Eds.), *Advances in motivation and achievement: Goals and self-regulatory processes*, (Vol.7, pp. 371-402). Greenwich, CT: JAI Press.
- Pintrich, P.R., & Schunk, D.H. (1996). *Motivation in education*. Englewood Cliffs, NJ: Prentice Hall.
- Pintrich, P.R., Smith, D.A.F., Garcia, T., McKeachie, W.J. (1991). *Motivated Strategies for Learning Questionnaire*. Ann Arbor, MI: The University of Michigan -590.
- Wolters, C.A. (2004). Advancing achievement goals theory: Using goal structures and goal orientations to predict students' motivation, cognition, and achievement. *Journal of Educational Psychology, 96*, 236-250.
- Wolters, C.A., Yu, S., Pintrich, P.R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences, 11*, 281-299.

Acknowledgements

Gratitude is extended to Dr. James Rath and Dr. Nancy Lavigne for their ongoing support of this project and assistance with manuscript preparation.

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Valuing Individual Differences Within Learning: From Face-to-Face to Online Experience

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The Internet has the potential to connect global communities of learners who share a common interest and yet who have diverse cultural backgrounds and experiences, which shape their current understandings. This paper describes and reflects upon the ways these individual differences in experience and understandings are valued and placed at the centre of the student learning experience in an online module of a Professional Doctorate in Teacher Education program. It explores how the online learning experience has been developed to leverage from successful face-to-face implementation and identifies differences between the two modes, in particular the added value of working online. Issues related to the nature of the support mechanisms necessary for successful online learning are discussed. This development was part of collaboration between the University of Melbourne, Australia where the online technology was developed and the University of Nottingham, United Kingdom, where the course is offered. Parallels between the online collaborative work experiences of the international partner developers and students are highlighted.

This paper provides a reflective account of the conversion of a one week residential summer school module, 'Contexts for Teacher Education,' part of a Professional Doctorate (EdD) in Teacher Education, to a collaborative online learning experience which builds upon the individual differences – cultures, understandings and experiences – of the learners. The online learning environment design draws on the past experience of the successful face-to-face course, underpinned by a common set of pedagogical principles for active adult learning. The challenge is to capture in online form some of the nuances of the face-to-face setting, but also to explore and exploit new possibilities offered by the online format. In order to sensitively meet these needs, a flexible online development environment was used to augment standard functions available in the WebCT Learning Management System (LMS). The following sets out the background to the online module, the pedagogic rationale and the activities that support online knowledge sharing and generation. The benefits over face-to-face delivery are also explored.

Background

The EdD in Teacher Education is a research degree course for full and part-time students run since 1998 by a team of lecturers in the School of Education, University of Nottingham. The program consists of taught and research stages centered around comparative studies of teacher education programs. Four core taught modules are studied over a period of two years part-time, broadly providing opportunities to develop student understanding of the main principles and issues underlying teacher education and the global and local research agendas that accompany these. Students are

not only introduced to the research skills and methodologies required to complete their research, but are provided with opportunities to further develop and articulate their own research agenda in preparation for the following two year part time research phase, during which they produce a major thesis.

The course was originally offered as a mixture of online and summer school residential modules, but in 2003, it was run fully online to widen its accessibility. Students are mainly in mid-career with a wide range of professional and family responsibilities; they are quite capable of organizing their lives to work at this level if the cost and the requirement for visits to the UK were removed. As the final research phase of their course would require fieldwork in their own countries, ways of supporting this at a distance made more sense than requiring visits to the UK. There are currently 14 students studying online, in Hong Kong, Canada, China, Cyprus, Greece, Cayman Islands, Jamaica, Poland, and the UK.

The Challenges for Course Design

Professional doctorates set a particular context for learning contrasting with regular undergraduate education. They generally attract participants who view their own personal development and academic ambition as fully integrated with their professional development and have a commitment to furthering their profession (Bourner, Bowden, & Laing, 2001).

[It is] important that higher education accepts the responsibility for producing the critical thinking and critical thinkers that will seek to surpass and transform current conceptions and practice in [their] professions. (Bourner et al, 2001 p.81)

TABLE 1
Course Design Challenges in Terms of Student Starting Position and Course Expectation

Course Expectations	Student Starting Position
The need for constructivist pedagogies that support engagement with critical thinking and understanding.	A possible pedagogic preference for a transmission mode of learning, but this will vary.
The need to work in a variety of online modes, for example, individual research and collaborative problem solving.	Varying expertise in learning online.
The need for the doctoral research to be informed by and inform the global agenda in teacher education.	A familiarity with local issues and an interest in pursuing research around a local problem in order to improve local practice.
The need to develop analytic and theoretical interpretations of data.	A tendency towards description rather than analysis, but this will vary.
The need for constructivist pedagogies that support engagement with critical thinking and understanding.	A possible pedagogic preference for a transmission mode of learning, but this will vary.

There are, however, important differences in the starting points of individual EdD students and such expectations. The ways these have been interpreted for the course is summarized in Table 1.

This gap presents a challenge to be able to accommodate variation between students' backgrounds, needs and expectations, while harnessing the opportunities provided by such real-life differences as the foundations for an engaging, multi-perspective learning experience involving adult learners.

Requirements for a Rich Environment for Active Learning (REAL) for Adults

Notions of adult learning (Knowles, 1990) and Grabinger and Dunlap's (2000) Rich Environments for Active Learning (REAL) have informed the design of both face-to-face and online learning modes. Table 2 outlines REAL pedagogic principles and the ways these have been incorporated into the Contexts for Teacher Education module in the EdD in Teacher Education course. A key feature of a REAL is that not only are there opportunities for knowledge creation, but that these are situated within authentic interactions. This authenticity is shaped within the module described in this paper by using an activity that generates 'new' knowledge that is directly relevant to the students' individual studies/interests and utilizes appropriate higher order and research relevant thinking skills. These learners genuinely hold expert knowledge that will be new to the others studying the module. It is the deliberate use of this situation that aims to establish a notion of the need to belong to and participate within the group, and to ensure students feel part of a professional community (Wenger, 1998).

From Mixed-Mode to Online Delivery

The Contexts for Teacher Education module, originally piloted as a one-week summer school class, required students to develop, apply and revise a

framework for the analysis of any given Teacher Education programme. Figure 1 outlines the module activities and their alignment with the pedagogic principles of Table 2. In the face-to-face setting, various forms of interactive group activity and classroom discussion provided rich opportunities for social construction of knowledge, generative learning and sharing of diverse real life experiences. Students reacted very positively to this part of the module. The notion was to 'celebrate' their diverse perspectives, to encourage them to consider some different perspectives through wider reading, and then through small group work, peer review and a classroom negotiation process carefully nurtured by the tutors, arrive at a consensus on a workable framework for analysis, which could be used on case studies and further revised. The challenge was to move this particular learning experience to the online mode.

Requirements for an Online Learning Environment

In re-developing the course into fully online mode, the role of technology should be to support, rather than dictate, an underlying pedagogic design.

Most of the claimed strengths of networked (online) learning have their roots in both the technology and the ways in which the technology is used. The technology alone won't deliver the desired benefit - except by lucky accident. (Goodyear, 2000, p. 18)

High level Learning Management Systems (LMS), such as WebCT or TopClass, certainly bring a range of functions, such as discussion boards, email, quizzes and collaborative learning spaces, that offer the promise of enriched student learning. Despite their widespread adoption, however, there is little research into their pedagogical impact (Coates, James, & Baldwin, 2005) and concerns have been raised are that these systems have been largely based on training-type models, with

TABLE 2
Pedagogic Principles Underlying a Rich Environment for Active Learning (REAL) for Adults

Pedagogic Principles	Design Features of the Learning Experience
1. Social construction of knowledge – that learning is enhanced through the process of communication of ideas, which involves interaction and reflection (Vygotsky, 1962).	Opportunities are structured for students to reflect upon and organize their ideas, communicate and discuss them, and then further reflect upon them.
2. Transparency of action – learners need to know why they need to learn something before undertaking to learn it (Knowles, 1990).	The pedagogy underlying the module is studied as part of the module and rationales for the roles of both tutors and students are related to this.
3. Experience is valued – experience is a ‘subjective’ resource that can be applied to learning (Knowles, 1990).	Experience is used as a starting point and is returned to. For example, students develop a case study based on key issues related to their own practice.
4. Authentic activities – learning is oriented to the application of knowledge and problem-solving that relates to the learners’ real life contexts (Grabinger & Dunlap, 2000).	A key outcome of the module is a draft set of research questions for each student. The activities used ensure these are informed by theory and global issues and involve the development of key research skills such as critical thinking.
5. Generative learning – organizing knowledge into a structure that reveals relationships between ideas, conflicts, and gaps in knowledge (Dunlap & Grabinger, 1996).	A framework for analyzing teacher education programs is developed collaboratively and is used to critically analyze case studies of teacher education programs in order to highlight a research agenda for Teacher Education.
6. Diversity of ‘voices’ – voices of key writers, policy makers, practitioners, and students are included to ground theory to practice.	Key readings, expert presenters, student case studies, discussions between teacher educators about practice are used.
7. Assessment encourages higher order learning and supports engagement in all the learning activities.	The assignment involves a reflection of the learning process and on the development of the critical thinking that led to the research questions developed by the student.

an “overly simplistic understanding of the relationship between teachers, knowledge and student learning” (Coates et al., 2005, p. 26-27). The need for more sophisticated and creative functionalities capable of addressing the specialised needs of different institutions and discipline areas is also reflected in proposals for more extensible architectures for learning technology, for example, the Open Knowledge Initiative (Collier & Robson, 2002). From our own experience, the application of an LMS to a carefully structured collaborative and reflective learning environment, blending individual and group work, has proved more difficult than anticipated (Fritze, 2003; Kemm, Williams, Kavnoudias, Fritze, & Stone, 2001). In this case, the additional load of bringing students up to speed with the multiple tools and task steps, and staff intensive monitoring of individual and group work across the different tools ultimately made this learning design unsustainable with standard tools.

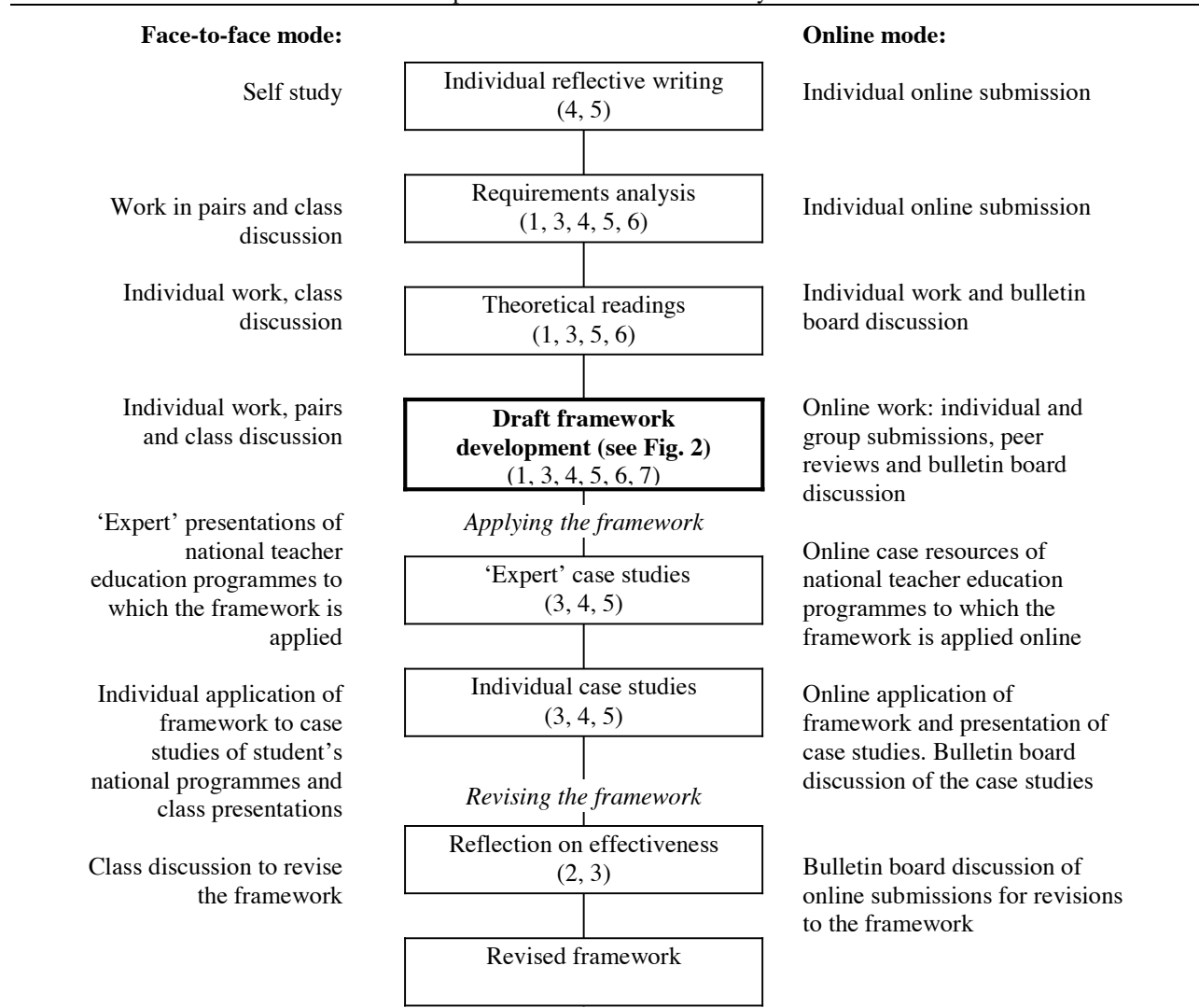
Our approach to implementing the online version of the Contexts for Teacher Education module was to use WebCT functions where possible, but where more carefully structured discourse was required, to explore the use of an alternative technology that would more readily blend in with, rather than dictate, the pedagogical model.

The Online Courseware Component Architecture (OCCA) Web server/database was developed at the

University of Melbourne to support the creation of highly flexible learning environments based on low-level learning and teaching ‘transactions’ (Fritze, 2003). An OCCA web site contains initially no predefined functions for either learning or teaching. Instead, all learning activities, course structures and administrative tools are defined by different web pages in which students, teachers or groups can (a) submit information to the database via standard html form elements, and/or (b) view specific information recalled from the database via specialized html ‘tags.’ As a simple example, a single student page might display a previous attempt at a question; feedback entered from a tutor’s page; a form to enter their refined response; and another for reflection on what they have learned. With even simple additional program coding, highly optimised pages can thus be created by the course designers to structure the online exchange of information between students, groups or teachers in a manner reflecting the pedagogic requirements of the course. A number of curriculum projects developed using OCCA have demonstrated its capacity to support innovative learning environments that incorporate reflection, group work, peer review, learning portfolios and customized tools for teachers, primarily supporting on-campus activities (Fritze, 2003). The Contexts for Teacher Education module was to extend this to wholly online form while maintaining the educational qualities of the previous mixed-mode

FIGURE 1

Module Activities that Led to the Development of a Framework of Analysis for Face-to-Face and Online Modes.¹



¹ Numbers in boxes refer to pedagogic principles in Table 2

course model and a sustainable administrative load.

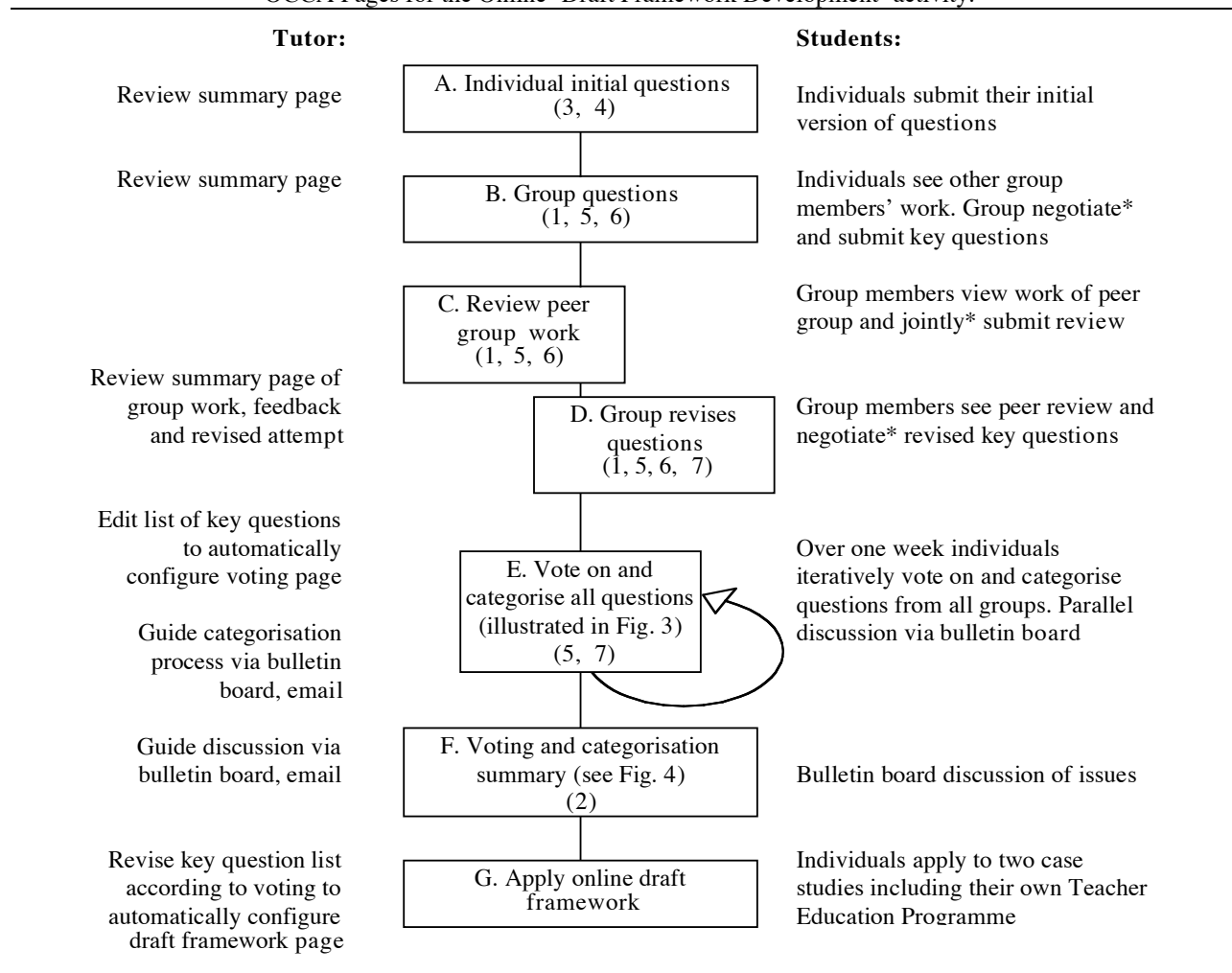
The Draft Framework Development Activity – A Generative Learning Process

The Draft Framework Development activity (see Figure 1) represents a key learning component of the module, indicated by its support of many of the pedagogic principles. This activity, through which individual understandings and experience are shared and reconciled, provides a particular test of an online environment to facilitate a learning experience that would compare with class discussion. Figure 2 indicates the revised structure of the activity, which occurs over a period of weeks, rather than days within the classroom setting. Each box represents a specially crafted Web

page through which each task is undertaken. The OCCA environment makes it possible for the work within each task to be automatically incorporated into later ones, and for unique collaborative activities to be constructed, such as the voting and categorization tasks. In addition, students have access to an online 'portfolio' progressively summarizing their work, and tutors have optimized pages to view students' work, submit individual, group and global comments, and configure exercises.

In the face-to-face mode the module tutor necessarily had to (a) mediate the experience for the students ensuring each was engaged and supported, and (b) keep the work aligned to the timetable that was necessary for the collaborative work to occur. This role was equally important for the online module.

FIGURE 2
OCCA Pages for the Online 'Draft Framework Development' activity.¹



¹ Numbers in boxes refer to pedagogic principles in Table 2.

* Group negotiation occurred using email, phone, or text messaging.

Here it was primarily facilitated through an OCCA page overview of activities containing the latest tutor instructions and feedback, supported by tools for monitoring student online submissions and setting global and individual feedback messages. These OCCA-based functions were complemented at different stages by the use of email and bulletin board discussions in WebCT, which also provided a front end for online delivery of the course.

The Draft Framework Development activity starts with students individually submitting their initial thoughts about questions necessary for the framework for analysis (see Figure 2, Box A). In the group questions page, these are shared within online groups of two or three, who in turn jointly develop and submit a revised version of these questions (see Figure 2, Box

B). Negotiation within the groups takes place via email, phone, or text messaging as best suits the individuals.

Such opportunities for the students to work within individual and small group perspectives mean that there can be a strong tendency for ideas to diverge (Hewitt & Teplov, 1999), yet there was a need to move to a negotiated convergence. While this tends to occur naturally within the classroom setting, for the online course, such a process needs to be specifically facilitated at different levels. In the peer review pages (see Figure 2, Box C), for example, students are given the opportunity to review the ideas of another group and to collaboratively revise their own effort in the light of such feedback (see Figure 2, Box D). 'Scavenging' for good ideas/questions is also part of consensus building within the peer review process.

FIGURE 3
Categorization of Proposed Students' Questions: Adding A New Category

#	Question	Score	Category	Add new category
1	What is the underlying philosophy and rationale behind the teacher education programme?	3		Conceptual_basis
2	To what degree does the curriculum prepare students to work in multicultural settings and for their work in schools?	4	Curriculum_Design	
3	How far, can we as teacher educators rely on the strategies, which are suggested for the development (and improvement) of the programme?	3	Quality_assurance	

Of particular interest was evidence from the student portfolios that wider reading tended to provide opportunities for divergence and the inclusion of new ideas/questions in the framework, which was not the case for the face-to-face delivery mode. Though this meant the convergence process was more complex, the quality of the framework for analysis was clearly being enhanced.

Convergence of ideas was most graphically illustrated in the 'Voting and Categorisation' page (see Figure 2, Box E), where students individually categorise and assess the collated list of key questions for assessing the quality of a teaching strategy generated by all groups. The online activity page is illustrated in Figure 3. The challenge was to provide some structure to the creation of categories as well as an efficient means of reducing the number of questions. In the face-to-face, as well as the online approach, groups decided upon the questions and ascribed categories to them. In the face-to-face approach questions devised by the groups were digitally displayed to the whole class and discussed one at a time and decisions were made in relation to the category that should be applied as well as the value of the question. This process, which took several hours, allowed for a sharing of professional knowledge and experience and required careful facilitation to move the diversity of ideas to an agreed consensus in which questions were accepted, discarded or merged with others or modified in some other way. This synchronous activity could not be repeated online with the large number of questions

and categories generated due to the different time zones and the personal and professional commitments of the students. The voting and categorization approach was used in the online version as a first step in reducing the number of questions and of sharing ideas about the range of suitable categories. The outcome was then more amenable to an online discussion to further refine the framework.

Initially no options are provided in the 'Category' popup menus and it was up to the early student pioneers to propose some within the 'Add new category' boxes (see Figure 3). When a page is submitted, these new categories then become available to all students in the popup menus. Thus students have the opportunity to view the emerging categories, select ones they feel are appropriate or add new ones themselves. Categories no longer referred by any student disappear.

Through the medium of these web pages a dynamic online discourse occurred over a number of days. Some categories converged while others remained contentious and these differences were resolved in the subsequent bulletin board discussion.

This voting and classification process generated an artifact illustrating the shared understandings and conflicts. That is, the framework that emerged after voting showed all the questions grouped under the main categories together with their mean score and was displayed to students (and tutors) as a summary page developed by the tutor from the summary that OCCA provided (see Figure 4).

This tutor modified summary in turn became the

FIGURE 4
Progress Summary on Categorization Process

N	The question	Total	n	Av	Categories
1	What is the underlying philosophy and rationale behind the teacher education programme?	47	12	3.9	Approach_to_TE Programme_Design Curriculum_Design Conceptual_basis(7) Approach_to_teacher_education Teacher_Education_Policies
2	To what degree does the curriculum prepare students to work in multicultural settings and for their work in schools?	47	12	3.9	Programme_objectives Curriculum_Design(7) Lifelong_learning curriculum*_relevance_(3)
3	How far, can we as teacher educators rely on the strategies, which are suggested for the development (and improvement) of the programme?	34	12	2.8	Role_of_teacher_educators Stakeholder_Collaboration Evaluation reflective_practices Strategies_used_for_developmen(4) Programme_support Quality_assurance(2) Teacher_Assessment

basis of discussion (see Figure 2, Box F) to move to a consensus on which questions to finally select, how they might be adapted, merged, or regrouped. Terms were also clarified.

Individual perspectives were also then allowed to continue to develop through application of the framework to the case studies as a means of further refining the framework and of developing individual/group understanding (see Figure 2, Box G). All up, the six groups produced 121 questions in total with over 40 different categories, each question attracting between one and ten categories. After voting, 33 questions remained and these were grouped under 12 categories to be further refined through a bulletin board discussion into the final revised framework.

A number of interesting outcomes of the online activity emerged. Due to the anonymous nature of the submission of the framework for analysis questions, there appeared to be a tendency for individual ideas to remain within the voting process, working to some extent against consensus building, as evidenced by the wide range of categories for each question. This situation contrasted with that in the face-to-face sessions where despite the efforts of the tutor, perceived power relations influenced proceedings – these were to some extent as a result of the different levels of competence in English within the group. Another advantage of the online approach was that it enabled

individuals the time to explore a wider literature base that related to their cultural perspectives and to share these articles with others via the bulletin board while constructing the framework. It was noted that active use of the bulletin board varied, although all students read the contributions. The process was more reflective than in the face-to-face mode due to its extended nature and the ways individual perspectives were encouraged. This was supported by the fact that the students' developing contributions in OCCA and their peer feedback were stored in their private portfolios and could be viewed at anytime for them to consider their current understandings and perspectives in relation to the developing group perspective. Tutors also had access to student portfolio views and other summaries of student submissions at different stages.

Support Mechanisms Necessary for Successful Online Collaborative Activities

A key skills framework (Bennett, Dunne, & Carre, 1999) was used to support the students in developing and reflecting on their abilities to work collaboratively in order to complete the activities. Students reported in the bulletin board that they valued this; however, the experience of running the module indicates that this framework needed to include higher order information and communication technology (ICT) literacy skills. As

the module drew on multiple online tools, involved significant new pedagogical functionality in OCCA and the local situation of students varied widely, some technical problems were inevitable. For example, some institutions do not allow installation of non-standard software, such as an alternative browser, which meant we could not assume any particular computer configuration. Testing for all eventualities will always be limited.

Students handled technological problems in different ways. Some accepted the inevitable frustrations and explored solutions readily, while others viewed these interruptions as problematic and became anxious. Lewis and Atzert (2000) suggest that computer-related anxiety and frustration can be defused by encouraging students to critically reflect on various aspects of the new communications technologies and to promote self-learning rather than dependency. Interestingly, the groups that were established for the work provided a peer support mechanism for some and the tutor became aware of this where problems persisted through subsequent emails (Joyes, 1999). This aspect of ICT literacy, the need to flexibly work around problems, is clearly something that the course needed to signal alongside the other higher order key skills.

Parallels Between the Student and Developers' Experiences

Asynchronous online working is well documented as being useful in developing reflective and high quality outcomes (Goodyear, 2000) and OCCA supports this through a structured sequence of activities that encourage the articulation and sharing of perspectives. However, there are times when students deem synchronous working essential. Despite time zone differences, students tended to work both asynchronously (e.g., email and bulletin boards) and synchronously (e.g., phone, text chat or audio linkup) within their groups, depending on their technological capacities and preferences. This also reflected the developers' preferred mode of collaborative working, using synchronous audio. Despite the difficulty of arranging a suitable common time between the UK and Australia with an 11 hour time difference, we found the immediacy of communication not only allows rapid progress to be made, but also provides a sense of knowing your e-community that asynchronous working (through emails) does not reveal. Allowing for mixed modes to suit student preferences is perhaps the ideal.

Conclusions and Future Developments

This paper has described how a structured online activity format can provide a practical alternative and even some pedagogical advantages over face-to-face

classes, which are less accessible. This is particularly important if diversity in professional background and knowledge is considered a valued aspect of the learning. Activities, such as the collaborative voting and categorization mechanism, can be conceived within suitably flexible online learning environments that while not attempting to mimic the exact face-to-face interaction process, can provide structured tasks and discourse opportunities that address key principles for an active learning experience. The students case studies of their teacher education programs (see Figure 2, Box G), based on the collaborative framework, provided clear evidence of the ways individual perspectives were valued and developed within this environment. These case studies were critical, reflective and revealed a deep understanding of the key issues – more difficult to achieve during the intense one week residential experience than the online module.

A supportive environment for tutors is an essential aspect of a sustainable online learning approach, requiring both efficient administrative tools and effective lenses on the student learning progress appropriate to the subtlety of the student activity. Support for online students is a critical issue and requires flexible choice in multiple modes of both synchronous and asynchronous communication. This reflects the nature of modern work practice, as experienced also by the authors during the development process.

Work is ongoing in order to refine and automate question grouping in the 'voting and categorization' process in OCCA, but some tutor intervention at this stage is necessary, as complex decisions need to be made. We are planning to extend the use of OCCA further in supporting group decision making in the 'revising the framework' activity currently carried out in the bulletin board. This process may use a voting system similar to the one proposed by Stahl (2002) in which consensus is gained once a certain proportion has voted for a change within a set time limit.

The developed online activity can be re-used within other OCCA-supported courses – it has been incorporated into an online workshop for the recent ePortfolios Australia Conference; alternatively the pedagogical model could be replicated within other flexible learning environments and is influencing developments of other online collaborative tools for learning (Joyes, 2005).

References

- Bennett, N., Dunne, E., & Carre, C. (1999). Patterns of core and generic skill provision in higher education. *Higher Education*, 37(1), 71-93

- Bourner, T., Bowden, R., & Laing, S. (2001). Professional doctorates in England. *Studies in Higher Education*, 26(1), 65-83.
- Coates, H., James, R., & Baldwin, G. (2005). A critical examination of the effects of Learning Management Systems on university teaching and learning. *Tertiary Education and Management*, 11(1), 19-36.
- Collier, G., & Robson, R. (2002). What is the Open Knowledge Initiative? Eduworks Corporation. Retrieved May 7, 2005 from <http://web.mit.edu/oki/learn/papers.html>
- Dunlap, J. C., & Grabinger, R. S. (1996). Rich environments for active learning in the higher education classroom. In B. G. Wilson (Ed.), *Constructivist learning environments: Case studies in instructional design*. (pp. 65-81). Englewood Cliffs, NJ: Educational Technology Publications.
- Fritze, P. (2003). *Innovation in university computer-facilitated learning systems: product, workplace experience and the organization*. Unpublished thesis, RMIT, Melbourne. Retrieved January 28, 2005 from <http://eprints.unimelb.edu.au/archive/00000311/>
- Goodyear, P. (2000). *Effective network learning in higher education: notes and guidelines*. Networked Learning in Higher Education Project (JISC/CALT). Retrieved December 14, 2004 from <http://csalt.lancs.ac.uk/jisc/advice.htm>
- Grabinger, R. S., & Dunlap, J. C. (2000). Rich environments for active learning: A definition. In D. Squires, G. Conole & G. Jacobs G (Eds.) *The changing face of learning technology*. University of Wales Press, Cardiff
- Hewitt, J. and Teplovs, C. (1999). An analysis of growth patterns in computer conferencing threads. *Proceedings of the Computer Supported Collaborative Learning Conference, CSCL'99*, 232-241.
- Joyes, G. (2005). *When pedagogy leads technology*. Paper presented at the International Conference on Technology, Knowledge and Society, University of California, CA.
- Joyes, G. (1999). Evaluating the integration of new learning technologies into a traditional course. In M. Oliver (Ed.) *Proceedings of the Evaluation of Learning Technology Conference*. London: University of New London Press.
- Kemm, R. E., Williams, N., Kavnoudias H., Fritze, P. A., & Stone, N. (2001). Learning of key scientific concepts in a web-based on-campus collaborative learning environment In C. Montgomerie & J. Viteli (Eds.) *EdMedia 2001: Proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications* (914-919). Tampere, Finland: Association for the Advancement of Computing in Education.
- Knowles, M. S. (1990). *The Adult Learner: a neglected species* Houston, TX: Gulf Publishing.
- Lewis, A., & Atzert, S. (2000). Dealing with Computer-Related Anxiety in the Project-Oriented CALL Classroom *Computer Assisted Language Learning*, 13(4/5), 377-395.
- Stahl, G. (2002). Understanding educational computational artifacts across community boundaries. Paper presented at ISCRAT 200. Retrieved June 20, 2004 from <http://www.cis.drexel.edu/faculty/gerry/publication/s/conferences/2002/>
- Vygotsky, L. S. (1962). *Thought and language*. Cambridge: M.I.T. Press.
- Wenger, E. (1998). *Communities of practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.

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Idea Generation, Networking, and Seed Money

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An experiential program was performed in an undergraduate class of entrepreneurship during spring and fall 2004 consisting of three elements: *Bugs*, to generate ideas; (b) *Networking*, to connect with the local business community; and (c) *Seed Money*, to create a real-life startup exercise. The objective of this program was transferring the “load” of teaching from a conventional lecturing method to a series of practical assignments in which students had to generate business ideas, begin contacts with the local entrepreneurs, and actually start a business. These activities at the start appeared as detached and unrelated efforts. However, as the class progressed, these activities proved to be interconnected. Major results of this program were, (a) after three rounds of sieving and refining, students compiled an extended list of business ideas; (b) some of the local entrepreneurs, among whom many expressed their willingness to be guest speakers, established links with the students and the University; and (c) many students who had never experienced how a small proprietary business operates realized mechanics of starting and managing an enterprise.

Learning from experience is a fundamental philosophical and theoretical idea in adult learning (Crosby, 1988). For Dewey (1938) and other progressive educators, experience was to be used deliberately to develop distinctive qualities from an otherwise imprecise and felt impression. Experience was to help us learn about and function more effectively in our world. David Kolb (1984) describes learning as a four-step process: (a) watching, (b) thinking, (c) feeling, and (d) doing. He delineates primarily on the works of Dewey, who emphasized experience, Kurt Lewin, who stressed the importance of a people being active in learning, and Jean Piaget, who described intelligence as the result of the interaction of the person and the environment. Although modern-day theorists of adult learning (Knowles, 1990, and Mezirow, 1991) differ regarding several important issues related to adult learning, they all place considerable emphasis on the importance of the learner’s experiences in the learning process.

To be effective learners we must (a) perceive information, (b) reflect on how information affects some aspect of our life, (c) compare how information fits into our own experiences, and (d) think about how this information offers new ways for us to act. Learning requires more than seeing, hearing, moving, or touching. We integrate what we sense and think with what we feel and how we behave. Without that integration, we are just passive participants and passive learning alone does not engage higher brain functions or stimulate our senses to the point where we integrate our lessons into our existing schemes. “Learning by doing” is actually a conversion of the explicit knowledge (theory) that is transmittable in formal, systematic language into tacit knowledge (practice) that is personal, and context-specific. As stated by Nonaka and Takeuchi (1995), when we internalize experiences as technical knowledge, they become valuable assets.

Education can be fun, but Pine and Gilmore (1999) express that there is a significant distinction between education and entertainment. In education, students absorb the information while they are “actively” engaged in the process of learning. A student inside a lab during a physics experiment is immersed more than when he just listens to a lecture. Here, the student absorbs the events unfolding before him. To inform a person and increase his knowledge and/or skills, educational events must actively engage the mind and/or body. In entertainment processes, however, absorption through the senses is accompanied by “passive” participation of the students. This type of experience occurs when we view a performance, listen to music, or read for pleasure.

Description of the Program

The “Integrated Program” engages students in learning and turns theories into practices. The three components of this experiment are as follows: an idea generation track, or *bugs*; a networking track, or *networking*; and a real business operation, or *seed money*. In composing this program, three ideas merged. Specifically, finding bugs came from the work of Marcie Sonneborn (2005), Syracuse University; the networking idea flowed from David Newton (2003), Westmont College; and the start-up exercise originated with Robert Peterson (2004), University of Portland.

The author is unaware if a colleague has put the first two works into practice, but the seed money project has been carried out before. These activities were totally separate and unrelated works developed by different persons. Integration and expansion, however, came later.

In this article, specifics of the program are illustrated. Any reproduction of the experiment, though, has to be customized to echo the local conditions and

preferred goals. For instance, universities have different calendars and the length of terms vary. Some schools, particularly those located in large urban areas, may have access to more resources as well as a larger pool of entrepreneurs. These situations permit different approaches. For example, the instructor may desire to invite entrepreneurs as guest speakers to her or his class, and the class size may influence the arrangement of groups.

Components of the "Troika"

The following section gives details of the three elements of the program—the bugs, networking, and the seed money.

Bugs. The bugs are the first component of the troika. The bugs' function is to produce ideas with the potential of becoming new products and services. Innovation begins with identifying the outcomes customers want to achieve; it ends in the creation of items they buy. The most successful products are responses to problems or needs that someone has. Many entrepreneurs get ideas for new products from needs that they have themselves, or they identify when speaking with someone. Leo Gerstenzang invented the cotton swab in the 1920s. His wife had used a toothpick with cotton stuck on the end to clean their baby's ears, and Leo invented cotton swabs to replace her "invention." George de Mestral, a Swiss engineer, invented Velcro in 1948. While hiking, he had noticed that burdock seeds stuck extraordinarily well to his clothing. The seeds had extensions that attached themselves firmly to clothing. Mestral used this same model to develop Velcro.

It is often a long road from invention to commercialization. Chester Carlson developed the photocopier process and patented the process in 1942. Haloid Xerox introduced the invention to the market in 1960. Inventions follow a path that is not dissimilar to that of "natural selection." Some ideas may work well in a laboratory experiment but not in the marketplace. Many good ideas and inventions fail to succeed, even after being financed, because companies do not have the well-rounded business knowledge necessary to place all areas of their company on solid grounds. Only about 6 percent of inventions develop by independent inventors actually reach the marketplace (Astebro, 1998).

Networking. The second element of the program, networking, is the other side of the invention. While the invention is the tale of the "hero," the one who can solve problems, networking deemphasizes the power of one. Here, the hero acts within and with the help of a network of friends, associates, and acquaintances. There is more to success than having a good idea and

raising money. Entrepreneurs launch and build a network of partners who work with them to achieve the new venture's goals. This partnership will include suppliers, customers, complementors, and often competitors. The advocates of this line of reasoning propose that networks are the "most significant resource of the firm" (Johannisson, 1990, p. 41), and the contacts with the network are often a source of new venture ideas (Christensen & Peterson, 1990). Other research indicates that network entrepreneurs recognize greatly more opportunities than "solo" entrepreneurs (Hills, Lumpkin, & Singh, 1997).

Seed money. The third building block of the program, the seed money project, begins with the argument that people learn in different ways. That is, some people are visual learners, some are verbal learners, and others are tactile learners. Using only one teaching method may help some students, but may leave others neglected. Students need opportunities to show their talents and learn in ways that work for them. This hands-on activity, starting up a business with a nominal amount of capital, provides a conduit for practical students and acts as an extra tool of learning.

Semester Activities

Bugs. For the bugs project students need to assemble a list of 50 or more things that really aggravate them. In the bug exercise students must reflect on their own lives, their personal needs, activities in which they are involved, things they like to do, relationships that they have, and things that they observe in their everyday world. Students are reminded that when they record the bugs, it is important for them to notice whether a certain solution solves the problem or makes an improvement. They should contemplate possible advantages of their solutions over those that are presently available. Moreover, they should be aware what it takes to realize a particular solution, for example, is the time right to propose the idea and is the market ready for it.

Table 1 demonstrates a sample of irritating things that students presented as bugs. In the same table, we also observe suggested solutions, potential products. As the items in Table 1 exhibit, some of the proposed solutions are directed at immediate and local concerns. Yet, a number of others look at broader problems.

This bugs project consists four phases. In the first phase students assemble a list of 50 bugs. In the second phase, students organize their bugs into various categories such as social, personal, environmental, and legal. The purpose of this classification is to organize

TABLE 1
A Sample of Bugs and Suggested Solutions

Bugs Suggested	Solutions
<ul style="list-style-type: none"> • Dogs bark incessantly • Forget what side the gas tank is on when pulling up to a gas station • A light bulb burns out without warning and there is no light in the room • Alarm clock needs to be set every night • Golf-balls that are lost after they are hit into the woods • Headlights shine in from side mirrors • Leaving blinkers on when not turning 	<ul style="list-style-type: none"> • Make a collar that lets out a very high pitch tone to stop the dog, similar to a dog whistle • Develop a device that lights up with an arrow that points which side the gas tank is on • Create a sensor that senses the life of the light bulb and beeps when it is about replace the bulb • Make an alarm clock that can be programmed for different days of the week • Install RFIDs on the balls • Create a translucent film to cover the side mirrors that reflects light outwards • Develop a device that turns the blinkers off after a certain time

bugs into clusters that may have similar solutions, and thus redundancy of the same resolution is avoided. Here, they know that their main purpose is to find reasonable solutions that may lead to creating certain products or services. In the third phase, students need to filter their bugs and select the 10 most promising concepts for future business enterprises. The project ends after appending some additional information related to marketing issues. Here, we have a list of the 10 most promising bugs and their solutions that echo market deficiencies suggesting various business opportunities.

In these two phases the following questions are to be answered:

- What is the problem (write one problem on each line)
- What solution are you suggesting to resolve the problem?
- How are you going to implement the solution? You need to suggest a very specific service/product that would solve the problem
- Do you need to protect the idea (intellectual property issues)?
- What is the name of the product/service?
- Who will be the potential buyer of this product? Explain the target market: What is the profile of your typical customer
- Why do these buyers buy your product?
- How much does your typical customer would pay for this product?
- How are you going to promote your product?
- Where are you going to sell your product?

Networking. The networking project requires a group of students to progressively fill a binder with particular information. The entries include business cards, clipped articles about exciting entrepreneurs, telephone numbers for referrals, web URLs or email

addresses for related products or services, brochures picked up at trade fairs or exhibitions, firm owners cited in various publications in the state, and cold call referrals secured during the semester. Students have to keep adding value to their binders. In each round they must submit a progress report to the instructor and the class, and follow-up with the business card owners. This implies that during the semester, students will increase their professional contacts, and thereby augment their awareness. There are four rounds of this work. In the first round students collect business cards, brochures, newspaper clips, and handbills from a host of local businesses. In the second round, students interview ten local entrepreneurs. A sample of questions for these interviews is suggested in Table 2.

In the third round, teams provide detailed information drawn from the previous interviews. Finally, the previous round is finished with a self-analysis and finding possible fit between the group members and any of those entrepreneurs interviewed. The following questions facilitate this process of analysis and matching:

- Since you are working as a team, prepare a single résumé for the group and provide the following information:
 - What are your work experiences?
 - What are your skills and areas of your particular expertise?
 - What are your other interests and non-work-related activities?
- Is there a match between your capabilities and strengths and those of the persons you have interviewed?
- If you indeed liked one of the businesses you interviewed but felt you had some shortcomings (weaknesses), state how you may address the problem? (Outsourcing, hiring experts, and so forth)

TABLE 2
Potential Questions for Interviews with Local Business Owners

1. How did you come up with your idea for a business?	6. Is there a trade association related to your business? If yes, what are its name, contact number, and benefits?
2. Did you start a new business, buy an existing business or buy a franchise?	7. How did you obtain your startup capital?
3. Has your produce or service changed since you started? If so, why?	8. What have been your primary financial challenges?
4. Who is your target market? How did you identify your customers? Who is your typical customer?	9. If you started over today, what would you do differently?
5. Is this a growing industry locally? Nationally?	10. Would you be willing to speak to my class? If yes, what is your telephone number or email address?

- From the selected magazines/newspaper/web articles, tabulate three characteristics of the successful entrepreneurs. Indicate if you possess any of the said characteristics. Write in detail.

Seed Money. The seed money project begins after the course withdrawal date. This delay in starting up the project allows non-business students to catch-up with the unfamiliar subjects of the course. By the time of the withdrawal date students are versed with the fundamentals of doing business and concepts of idea generation and preparation of financial statements.

To initiate the business, the instructor furnishes each student with \$20. Students understand that as long as their businesses are legal and ethical, their types are of no great concern. At the time of distribution of the seed money, the instructor and each student sign a contract. Students are free to form a partnership if their project requires more money to start. If students decide to form partnerships, they need to prepare a contract that has the partners' signatures. This document becomes part of each venture's portfolio. In the two semesters that the project was implemented, some students acted alone, but in one case, the "company" had 5 partners.

The assessment of students is based on the quality of the reports only. There is a possibility that a certain

business loses its initial fund. This itself is an exercise in entrepreneurship and students' responsibility to face the risks of starting a business. The seed money collected at the end of the activity. In these experiences none of the ventures lost any money, although some of the students lost points because they had badly prepared their reports. The most noticeable mistakes were related to balance sheets and income statements. A rubric for the seed money project is suggested in Table 3.

Considering the life span of this exercise (less than two months), the ventures created by a group of students who had very little or no business experience at all, showed impressive levels of achievement. The initial investment of \$440.00 (Spring 2004) generated net revenue of \$ 826.00. Another round of activities, with an initial capital of \$280.00 (Fall 2004) generated \$760.00. Students paid a 10% "tax". This tax is levied on the net profit demonstrated on income statement of each business formed by students. Some students "donated" extra money. In aggregate so far \$168.70 has been collected through these taxes. These small funds are deposited in a special account for our campus Entrepreneurship Club. Table 4 exhibits some useful information about the two runs of the seed money project.

TABLE 3
A Rubric for Grading the Seed Money Project

Items	Points	% Multiplier	Your Points
1. A professional resume specifying skills/talents necessary to run a business.	5	100 75 50 25	
2. A list of marketing activities (10 points each) The type of product/service in the venture How the product was priced The way the business was promoted How the product/service was delivered	30	100 75 50 25	
3. The legal type of business (e.g., proprietorship, partnership, etc.). If a partnership, include a full contract with the partner names.	5	100 75 50 25	
4. A detailed financial report. Cash flow budget Balance sheet Income statement	30	100 75 50 25	
Total Points: 70		Your Points ->	

TABLE 4
Business Operations in Two Semesters of Conducting the Seed Money Activity

Semester	Initial Capital	Profits	Taxes	# of Students	# of Businesses	Types of Businesses
Spring 2004	\$440.00	\$826.07	\$88.90	22	11	Bakery, car detailing, t-shirts, haircutting, wood splitting, massage service, banner making, jewelry making, web page design
Fall 2004	\$280.00	\$760.71	\$79.80	14	10	Bakery, car detailing, home maintenance, concierge service, maid service, online e-bay® selling, gifts and goodies, construction, catering, landscaping

Weekly Activities

The first two weeks of the semester are allocated to a general discussion of entrepreneurial characteristics, as well as discussion of identifying opportunities and entry strategies. The assumption is that after covering these subjects, students are ready for the completion of the first round of the bugs and network reports. In addition, instructors can assign other exercises to their students.

From the third week through the sixth week, discussions revolve around business valuation and buying an existing business, management teams, legal forms of organization, and intellectual property. Again, additional homework activities that are related to these topics may be assigned. Here, students are prepared for the second round of both experiential exercises. The third exercise, the seed money project is to be introduced during this timeframe.

Weeks seven through ten is the period in which such topics as contracts and leases, how to protect business interests, government regulations, and analyzing the market are discussed. After these discussions, students should turn in their third round of bugs and network reports as well as the first report of the seed money project.

In the last four weeks of the semester students prepare themselves for the fourth and last report of the bugs and network projects. By this time they would have studied subjects such as pricing, market penetration, developing financial statements, and sources of capital. Since this is approximately the end of the semester, a final report of seed money project is also due at this time. Similar to the preceding phases, the instructor may require students to complete other exercises. These assignments are the type that will further assist students in gaining knowledge about the complex task of business management.

Conclusion

This integrated program achieved several goals, including the reviewing of the most important subjects of how to manage a business. In addition, the class was an exciting place of learning and playing. The students implemented a business concept and created opportunities to approach a network of experts, supporting group, and potential investors.

Buckingham and Coffman (1999) point out “through Gallup’s studies of great accountants, we have discovered that one of their most important talents is an innate love of precision” (p. 84). As this program progressed, a fact started to show itself to both students and teacher. We discovered that certain students, while completing various phases of activities, were demonstrating very clear signs of having such entrepreneurial talents as courage, determination, and tolerance for ambiguity, and accepting risks without much stress. The three exercises demonstrated to students that when the subject of entrepreneurship is taken seriously, it is not a course for everybody. All participants in the class learned skills necessary to manage a business. They also acquired awareness of rules of the game. As we moved on, we discovered the less talented students. Some were missing the deadlines. Some were shy in interviewing the local entrepreneurs. Still, others could not identify bugs, demonstrating their lack of recognizing opportunities. Almost the same individuals expressed an inability to start a business and were begging others to accept them as partners.

A direct result of this type of experiential exercise is “discovering” talents. While it is much easier to teach skills (how-tos) and knowledge (awareness), it is far more crucial and difficult to find hidden talents conducive to successful future business path. These exercises have the power of digging into the potential pool of human talents and expose the ones that are important in carrying out a business venture.

References

- Astebro, T. (1998, Winter). Basic statistics on the success rate and profits for independent inventors. *Entrepreneurship Theory and Practice*, 41-48.
- Buckingham, M. & Coffman, C. (1999). *First, break all the rules*. New York: Simon and Schuster.
- Buskirk, R. H., David, R. M., & Price, C. (2001). *Planning and growing a business venture: Venture planning field guide*. Kansas City, MO: Kauffman Center for Entrepreneurial Leadership.
- Christensen, P. S., & Peterson, R. (1990). *Opportunity identification: Mapping the sources of new venture ideas*. Paper presented at Annual Babson Entrepreneurship Research Conference, Aarhus, Denmark.
- Crosby, A. (1988). A critical look: The philosophical foundations of experiential education. In R. Kraft & M. Sakofs (Eds.), *The theory of experiential education* (2nd ed. pp. 3-13). Boulder, CO: Association for Experiential Education.
- Dewey, J. (1938). *Experience and Education*. New York: Collier Books.
- Dorf, R. C., & Byers, T. H. (2005). *Technology ventures*. New York: McGraw-Hill.
- Hill, G. E., Lumpkin, G. T., & Singh, R. (1997). Opportunity recognition: Perceptions and behaviors of entrepreneurs. *Frontiers of Entrepreneurship Research*, 17, 168-182.
- Johannisson, B. (1990). Economics of overview-guiding external growth of small firms. *International Small Business Journal*, 9, 32-44.
- Knowles, M. (1990). *The adult learner: A neglected species* (4th ed.). Houston, TX: Gulf Publishing.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.
- Newton, D. (2003). Networking referral stories: Undergraduate forging of strategic alliances in just 15 weeks. Retrieved March 10, 2005, from <http://www.usasbe.org/knowledge/innovation/index.asp>
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company*. New York: Oxford University Press.
- Peterson, R. M. (2004). *What would you do for \$20? Qualitative and quantitative outcomes*. Paper presented at USASBE Annual Conference, Dallas, TX.
- Pine II, B. J., & Gilmore, J. H. (1999). *The experience economy*. Boston: Harvard University Business Press.
- Sonneborn, M. (2005). *The bug report*. Retrieved March 10, 2005, from <http://www.usasbe.org/knowledge/innovation/index.asp>.

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Survey of 12 Strategies to Measure Teaching Effectiveness

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Twelve potential sources of evidence to measure teaching effectiveness are critically reviewed: (a) student ratings, (b) peer ratings, (c) self-evaluation, (d) videos, (e) student interviews, (f) alumni ratings, (g) employer ratings, (h) administrator ratings, (i) teaching scholarship, (j) teaching awards, (k) learning outcome measures, and (l) teaching portfolios. National standards are presented to guide the definition and measurement of effective teaching. A unified conceptualization of teaching effectiveness is proposed to use multiple sources of evidence, such as student ratings, peer ratings, and self-evaluation, to provide an accurate and reliable base for formative and summative decisions. Multiple sources build on the strengths of all sources, while compensating for the weaknesses in any single source. This triangulation of sources is recommended in view of the complexity of measuring the act of teaching and the variety of direct and indirect sources and tools used to produce the evidence.

Yup, that's what I typed: 12. A virtual smorgasbord of data sources awaits you. How many can you name other than student ratings? How many are currently being used in your department? That's what I thought. This is your lucky page. By the time you finish this article, your toughest decision will be (Are you ready? Isn't this exciting?): Should I slog through the other *IJTLHE* articles? WROOONG! It's: Which sources should I use?

Teaching Effectiveness: Defining the Construct

Why is measuring *teaching effectiveness* so important? Because the evidence produced is used for major decisions about our future in academe. There are two types of decisions: *formative*, which uses the evidence to improve and shape the quality of our teaching, and *summative*, which uses the evidence to "sum up" our overall performance or status to decide about our annual merit pay, promotion, and tenure. The former involves decisions to improve teaching; the latter consists of personnel decisions. As faculty, we make formative decisions to plan and revise our teaching semester after semester. Summative decisions are final and they are rendered by administrators or colleagues at different points in time to determine whether we have a future. These decisions have an impact on the quality of our professional life. The various sources of evidence for teaching effectiveness may be employed for either formative or summative decisions or both.

National Standards

There are national standards for how teaching effectiveness or performance should be measured—the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME Joint Committee on Standards, 1999). They can guide the development of

the measurement tools, the technical analysis of the results, and the reporting and interpretation of the evidence for decision making.

The *Standards* address WHAT is measured and then HOW to measure it: WHAT – The content of any tool, such as a student or peer rating scale, requires a thorough and explicit definition of the knowledge, skills, and abilities (KSAs), and other characteristics and behaviors that describe the job of "effective teaching" (see Standards 14.8–14.10). HOW – The data from a rating scale or other tool that is based on the systematic collection of opinions or decisions by raters, observers, or judges hinge on their expertise, qualifications, and experience (see Standard 1.7).

Student and peer direct observations of WHAT they see in the classroom furnish the foundation for their ratings. However, other sources, such as student outcome data and publications on innovative teaching strategies, are indirect, from which teaching effectiveness is inferred. These different data sources vary considerably in how they measure the WHAT. We need to be able to carefully discriminate among all available sources.

Beyond Student Ratings

Historically, student ratings have dominated as the primary measure of teaching effectiveness for the past 30 years (Seldin, 1999a). However, over the past decade there has been a trend toward augmenting those ratings with other data sources of teaching performance. Such sources can serve to broaden and deepen the evidence base used to evaluate courses and assess the quality of teaching (Arreola, 2000; Braskamp & Ory, 1994; Knapper & Cranton, 2001; Seldin & Associates, 1999).

Several *comprehensive* models of faculty evaluation have been proposed (Arreola, 2000; Braskamp & Ory, 1994; Centra, 1999; Keig &

Waggoner, 1994; Romberg, 1985; Soderberg, 1986). They include multiple sources of evidence with greater weight attached to student and peer input and less weight attached to self-evaluation, alumni, administrators, and others. All of these models are used to arrive at formative and summative decisions.

A Unified Conceptualization

I propose a *unified conceptualization* of teaching effectiveness, whereby evidence is collected from a variety of sources to define the construct and to make decisions about its attainment. Much has been written about the merits and shortcomings of the various sources of evidence currently being employed. Each source can supply unique information, but also is fallible, usually in a way different from the other sources. For example, the unreliability or biases of peer ratings are not the same as those of student ratings; student ratings have other weaknesses. By drawing on three or more different sources of evidence, the strengths of each source can compensate for weaknesses of the other sources, thereby converging on a decision about teaching effectiveness that is more accurate than one based on any single source (Appling, Naumann, & Berk, 2001). This notion of *triangulation* is derived from a compensatory model of decision making. Given the complexity of measuring the act of teaching, it is reasonable to expect that multiple sources can provide a more accurate, reliable, and comprehensive picture of teaching effectiveness than just one source. However, the decision maker should integrate the information from only those sources for which validity evidence is available (see Standard 14.13).

According to Scriven (1991), evaluation is “the process, whose duty is the systematic and objective determination of merit, worth, or value. Without such a process, there is no way to distinguish the worthwhile from the worthless.” (p. 4) This process involves two

dimensions: (a) gathering data and (b) using that data for judgment and decision making with respect to agreed-upon standards. Measurement tools are needed to collect that data, such as tests, scales, and questionnaires. The criteria for teaching effectiveness are embedded in the content of these measures. The most common measures used for collecting the data for faculty evaluation are rating scales.

12 Sources of Evidence

There are 12 potential sources of evidence of teaching effectiveness: (a) student ratings, (b) peer ratings, (c) self-evaluation, (d) videos, (e) student interviews, (f) alumni ratings, (g) employer ratings, (h) administrator ratings, (i) teaching scholarship, (j) teaching awards, (k) learning outcome measures, and (l) teaching portfolio. An outline of these sources is shown in Table 1 along with several salient characteristics: type of measure needed to gather the evidence, the person(s) responsible for providing the evidence (students, peers, instructor, or administrator), the person or committee who uses the evidence, and the decision(s) typically rendered based on that data (F = formative/ S = summative/ P = program). The purpose of this article is to critically examine the value of these 12 sources reported in the literature on faculty evaluation and to deduce a “bottom line” recommendation for each source based on the current state of research and practice.

Student Ratings

The mere mention of *faculty evaluation* to many college professors conjures up mental images of the “shower scene” from *Psycho*. They’re thinking: “Why not just whack me now, rather than wait to see those student ratings again.” Student ratings have become synonymous with faculty evaluation in the United States (Seldin, 1999a).

TABLE 1
Salient Characteristics of 12 Sources of Evidence of Teaching Effectiveness

Source of Evidence	Type of Measure(s)	Who Provides Evidence	Who Uses Evidence	Type of Decision ¹
Student Ratings	Rating Scale	Students	Instructors/Administrators	F/S/P
Peer Ratings	Rating Scale	Peers	Instructors	F/S
Self-Evaluation	Rating Scale	Instructors	Instructors/Administrators	F/S
Videos	Rating Scale	Instructors/Peers	Instructors/Peers	F/S
Student Interviews	Questionnaires	Students	Instructors/Administrators	F/S
Alumni Ratings	Rating Scale	Graduates	Instructors/Administrators	F/S/P
Employer Ratings	Rating Scale	Graduates' Employers	Instructors/Administrators	P
Administrator Ratings	Rating Scale	Administrators	Administrators	S
Teaching Scholarship	Judgmental Review	Instructors	Administrators	S
Teaching Awards	Judgmental Review	Instructors	Faculty Committees/Administrators	S
Learning Outcomes	Tests, Projects, Simulations	Students	Instructors/Curriculum Committees	F/P
Teaching Portfolio	Most of the above	Instructors, Students, Peers	Promotions Committees	S

¹F = formative, S = summative, P = program

It is the most influential measure of performance used in promotion and tenure decisions at institutions that emphasize teaching effectiveness (Emery, Kramer, & Tian, 2003). Recent estimates indicate 88% of all liberal arts colleges use student ratings for summative decisions (Seldin, 1999a). A survey of 40,000 department chairs (US Department of Education, 1991) indicated that 97% used “student evaluations” to assess teaching performance.

This popularity notwithstanding, there have also been signs of faculty hostility and cynicism toward student ratings (Franklin & Theall, 1989; Nasser & Fresko, 2002; Schmelkin-Pedhazur, Spencer, & Gellman, 1997). Faculty have lodged numerous complaints about student ratings and their uses. The veracity of these complaints was scrutinized by Braskamp and Ory (1994) and Aleamoni (1999) based on accumulated research evidence. Both reviews found barely a smidgen of research to substantiate any of the common allegations by faculty. Aleamoni’s analysis produced a list of 15 “myths” about student ratings. However, there are still dissenters who point to individual studies to support their objections, despite the corpus of evidence to the contrary. At present, a large percentage of faculty in all disciplines exhibit moderately positive attitudes toward the validity of student ratings and their usefulness for improving instruction; however, there’s no consensus (Nasser & Fresko, 2002).

There is more research on student ratings than any other topic in higher education (Theall & Franklin, 1990). More than 2000 articles have been cited over the past 60 years (Cashin, 1999; McKeachie & Kaplan, 1996). Although there is still a wide range of opinions on their value, McKeachie (1997) noted that “student ratings are the single most valid source of data on teaching effectiveness” (p. 1219). In fact, there is little evidence of the validity of any other sources of data (Marsh & Roche, 1997). There seems to be agreement among the experts on faculty evaluation that student ratings provides an excellent source of evidence for both formative and summative decisions, with the qualification that other sources also be used for the latter (Arreola, 2000; Braskamp & Ory, 1994; Cashin, 1989, 1990; Centra, 1999; Seldin, 1999a). *[Digression Alert: If you’re itching to be provoked, there are several references on the student ratings debate that may incite you to riot (see Aleamoni, 1999; Cashin, 1999; d’Apollonia & Abrami, 1997; Eiszler, 2002; Emery et al., 2003; Greenwald, 1997; Greenwald & Gilmore, 1997; Greimel-Fuhrmann & Geyer, 2003; Havelka, Neal, & Beasley, 2003; Lewis, 2001; Millea & Grimes, 2002; Read, Rama, & Raghunandan, 2001; Shevlin, Banyard, Davies, & Griffiths, 2000; Sojka, Gupta, & Deeter-Schmelz, 2002; Sproule, 2002; Theall, Abrami, & Mets, 2001; Trinkaus, 2002; Wachtel, 1998).*

However, before you grab your riot gear, you might want to consider 11 other sources of evidence. *End of Digression].*

BOTTOM LINE: Student ratings is a necessary source of evidence of teaching effectiveness for both formative and summative decisions, but not a sufficient source for the latter. Considering all of the polemics over its value, it is still an essential component of any faculty evaluation system.

Peer Ratings

In the early 1990s, Boyer (1990) and Rice (1991) redefined scholarship to include teaching. After all, it is the means by which discovered, integrated, and applied knowledge is transmitted to the next generation of scholars. Teaching is a scholarly activity. In order to prepare and teach a course, faculty must complete the following:

- Conduct a comprehensive up-to-date review of the literature.
- Develop content outlines.
- Prepare a syllabus.
- Choose the most appropriate print and nonprint resources.
- Write and/or select handouts.
- Integrate instructional technology (IT) support (e.g., audiovisuals, Web site).
- Design learning activities.
- Construct and grade evaluation measures.

Webb and McEnerney (1995) argued that these products and activities can be as creative and scholarly as original research.

If teaching performance is to be recognized and rewarded as scholarship, it should be subjected to the same rigorous peer review process to which a research manuscript is subjected prior to being published in a referred journal. In other words, teaching should be judged by the same high standards applied to other forms of scholarship: *peer review*. Peer review as an alternative source of evidence seems to be climbing up the evaluation ladder, such that more than 40% of liberal arts colleges use peer observation for summative evaluation (Seldin, 1999a).

Peer review of teaching is composed of two activities: peer observation of in-class teaching performance and peer review of the written documents used in a course. *Peer observation of teaching performance* requires a rating scale that covers those aspects of teaching that peers are better qualified to evaluate than students. The scale items typically address the instructor’s content knowledge, delivery, teaching methods, learning activities, and the like (see Berk, Naumann, & Appling, 2004). The ratings may be recorded live with one or more peers on one or

multiple occasions or from videotaped classes.

Peer review of teaching materials requires a different type of scale to rate the quality of the course syllabus, instructional plans, texts, reading assignments, handouts, homework, and tests/projects. Sometimes teaching behaviors such as fairness, grading practices, ethics, and professionalism are included. This review is less subjective and more cost-effective, efficient, and reliable than peer observations. However, the observations are the more common choice because they provide direct evaluations of the act of teaching. Both forms of peer review should be included in a comprehensive system, where possible.

Despite the current state of the art of peer review, there is considerable resistance by faculty to its acceptance as a complement to student ratings. Its relative unpopularity stems from the following top 10 reasons:

1. Observations are biased because the ratings are personal and subjective (peer review of research is blind and subjective).
2. Observations are unreliable (peer review of research can also yield low inter-reviewer reliability).
3. One observer is unfair (peer review of research usually has two or three reviewers).
4. In-class observations take too much time (peer review of research can be time-consuming, but distributed at the discretion of the reviewers).
5. One or two class observations does not constitute a representative sample of teaching performance for an entire course.
6. Only students who observe an instructor for 40+ hours over an entire course can really evaluate teaching performance.
7. Available peer rating scales don't measure important characteristics of teaching effectiveness.
8. The results probably will not have any impact on teaching.
9. Teaching is not valued as much as research, especially at large, research-oriented universities; so why bother?
10. Observation data are inappropriate for summative decisions by administrators.

Most of these reasons or perceptions are legitimate based on how different institutions execute a peer review system. A few can be corrected to minimize bias and unfairness and improve the representativeness of observations.

However, there is consensus by experts on reason 10: Peer observation data should be used for formative rather than for summative decisions (Aleamoni, 1982; Arreola, 2000; Centra, 1999; Cohen & McKeachie, 1980; Keig & Waggoner, 1995; Millis & Kaplan, 1995). In fact, 60 years of experience with peer

assessment in the military and private industry led to the same conclusion (Muchinsky, 1995). Employees tend to accept peer observations when the results are used for constructive diagnostic feedback instead of as the basis for administrative decisions (Cederblom & Lounsbury, 1980; Love, 1981).

BOTTOM LINE: Peer ratings of teaching performance and materials is the most complementary source of evidence to student ratings. It covers those aspects of teaching that students are not in a position to evaluate. Student and peer ratings, viewed together, furnish a very comprehensive picture of teaching effectiveness for teaching improvement. Peer ratings should not be used for personnel decisions.

Self-Evaluation

How can we ask faculty to evaluate their own teaching? Is it possible for us to be impartial about our own performance? Probably not. It is natural to portray ourselves in the best light possible. Unfortunately, the research on this issue is skimpy and inconclusive. A few studies found that faculty rate themselves higher than (Centra, 1999), equal to (Bo-Linn, Gentry, Lowman, Pratt, and Zhu, 2004; Feldman, 1989), or lower than (Bo-Linn et al., 2004) their students rate them. Highly rated instructors give themselves higher ratings than less highly rated instructors (Doyle & Crichton, 1978; Marsh, Overall, & Kesler, 1979). Superior teachers provide more accurate self-ratings than mediocre or putrid teachers (Centra, 1973; Sorey, 1968).

Despite this possibly biased estimate of our own teaching effectiveness, this evidence can provide support for what we do in the classroom and can present a picture of our teaching unobtainable from any other source. Most administrators agree. Among liberal arts college academic deans, 59% always include self-evaluations for summative decisions (Seldin, 1999a). The Carnegie Foundation for the Advancement of Teaching (1994) found that 82% of four-year colleges and universities reported using self-evaluations to measure teaching performance. The American Association of University Professors (1974) concluded that self-evaluation would improve the faculty review process. Further, it seems reasonable that our assessment of our own teaching should count for something in the teaching effectiveness equation.

So what form should the self-evaluations take? The faculty activity report (a.k.a. "brag sheet") is the most common type of self-evaluation. It describes teaching, scholarship, service, and practice (for the professions) activities for the previous year. This information is used by academic administrators for merit pay decisions. This annual report, however,

is not a true self-evaluation of teaching effectiveness.

When self-evaluation evidence is to be used in conjunction with other sources for personnel decisions, Seldin (1999b) recommends a structured form to display an instructor's teaching objectives, activities, accomplishments, and failures. Guiding questions are suggested in the areas of classroom approach, instructor-student rapport, knowledge of discipline, course organization and planning, and questions about teaching. Wergin (1992) and Braskamp and Ory (1994) offer additional types of evidence that can be collected.

The instructor can also complete the student rating scale from two perspectives: as a direct measure of his or her teaching performance and then as the anticipated ratings the students should give. Discrepancies among the three sources in this triad—students' ratings, instructor's self-ratings, and instructor's perceptions of students' ratings—can provide valuable insights on teaching effectiveness. The results may be very helpful for targeting specific areas for improvement. Students' and self-ratings tend to yield low positive correlations (Braskamp, Caulley, & Costin, 1979; Feldman, 1989).

For formative decisions, the ratings triad may prove fruitful, but a video of one's own teaching performance can be even more informative as a source of self-evaluation evidence. It will be examined in the next section.

Overall, an instructor's self-evaluation demonstrates his or her knowledge about teaching and perceived effectiveness in the classroom (Cranton, 2001). This information should be critically reviewed and compared with the other sources of evidence for personnel decisions. The diagnostic profile should be used to guide teaching improvement.

BOTTOM LINE: Self-evaluation is an important source of evidence to consider in formative and summative decisions. Faculty input on their own teaching completes the triangulation of the three direct observation sources of teaching performance: students, peers, and self.

Videos

Everyone's doing videos. There are cable TV stations devoted exclusively to playing videos. If Britney, Beyoncé, and Snoop Dogg can make millions from videos, we should at least make the effort to produce a simple video and we don't have to sing or dance. We simply do what we do best: talk. I mean teach.

Find your resident videographer, audiovisual or IT expert, or a colleague who wants to be Steven Spielberg, Ron Howard, or Penny Marshall. Schedule a taping of one typical class or a best and worst class to sample a variety of teaching. Don't perform. Be

yourself to provide an authentic picture of how you really teach. The product is a tape or DVD. This is hard evidence of your teaching.

Who should evaluate the video?

1. Self, privately in office, but with access to medications.
2. Self completes peer observation scale of behaviors while viewing, then weeps.
3. One peer completes scale and provides feedback.
4. Two or three peers complete scale on same video and provide feedback.
5. MTV, VH-1, or BET.

These options are listed in order of increasing complexity, intrusiveness, and amount of information produced. All options can provide valuable insights into teaching to guide specific improvements. The choice of option may boil down to what an instructor is willing to do and how much information he or she can handle.

Braskamp and Ory (1994) and Seldin (1999b) argue the virtues of the video for teaching improvement. However, there's only a tad of evidence on its effectiveness. Don't blink or you'll miss it. If the purpose of the video is to diagnose strengths and weaknesses on one or more teaching occasions, faculty should be encouraged to systemically evaluate the behaviors observed using a rating scale or checklist (Seldin, 1998). Behavioral checklists have been developed by Brinko (1993) and Perlberg (1983). They can focus feedback on what needs to be changed. If a skilled peer, respected mentor, or consultant can provide feedback in confidence, that would be even more useful to the instructor (Braskamp & Ory, 1994).

Whatever option is selected, the result of the video should be a profile of positive and negative teaching behaviors followed by a list of specific objectives to address the deficiencies. This direct evidence of teaching effectiveness can be included in an instructor's self-evaluation and teaching portfolio. The video is a powerful documentary of teaching performance.

BOTTOM LINE: If faculty are really committed to improving their teaching, a video is one of the best sources of evidence for formative decisions, interpreted either alone or, preferably, with peer input. If the video is used in confidence for this purpose, faculty should decide whether it should be included in their self-evaluation or portfolio as a "work sample" for summative decisions.

Student Interviews

Group interviews with students furnish another source of evidence that faculty rate as more accurate, trustworthy, useful, comprehensive, and believable than

student ratings and written comments (Braskamp & Ory, 1994), although the information collected from all three sources is highly congruent (Braskamp, Ory, & Pieper, 1980). Faculty consider the interview results as most useful for teaching improvement, but can also be valuable in promotion decisions (Ory & Braskamp, 1981).

There are three types of interviews recommended by Braskamp and Ory (1994): (a) quality control circles, (b) classroom group interviews, and (c) graduate exit interviews. The first type of interview is derived from a management technique used in Japanese industry called *quality control circles* (Shariff, 1999; Weimer, 1990), where groups of employees are given opportunities to participate in company decision making. The instructional version of the “circle” involves assembling a group of volunteer students to meet regularly (bi-weekly) to critique teaching and testing strategies, pinpoint problem areas, and solicit suggestions for improvement. These instructor-led meetings foster accountability for everything that happens in the classroom. The students have significant input into the teaching-learning process and other hyphenated word combos. The instructor can also report the results of the meeting to the entire class to elicit their responses. This opens communication. The unstructured “circle” and class interviews with students on teaching activities can be extremely effective for making changes in instruction. However, faculty must be open to student comments and be willing to make necessary adjustments to improve. This formative evaluation technique permits student feedback and instructional change systematically throughout a course.

Classroom group interviews involves the entire class, but is conducted by someone other than the instructor, usually a colleague in the same department, a graduate TA, or a faculty development or student services professional. The interviewer uses a structured questionnaire to probe the strengths and weaknesses of the course and teaching activities. Some of the questions should allow enough latitude to elicit a wide range of student perspectives from the class. The information collected is shared with the instructor for teaching improvement, but may also be used as a source of evidence for summative decisions.

Graduate exit interviews can be executed either individually or in groups by faculty, administrators, or student services personnel. Given the time needed even for a group interview of undergraduate or graduate students, the questions should focus on information not gathered from the exit rating scale. For example, group interview items should concentrate on most useful courses, least useful courses, best instructors, content gaps, teaching quality, advising quality, and graduation plans. Student responses may be recorded from the interview or may be requested as anonymous written

comments on the program. The results should be forwarded to appropriate faculty, curriculum committees, and administrators. Depending on the specificity of the information collected, this evidence may be used for formative feedback and also summative decisions.

BOTTOM LINE: *The quality control circle is an excellent technique to provide constant student feedback for teaching improvement. The group interview as an independent evaluation can be very informative to supplement student ratings. Exit interviews may be impractical to conduct or redundant with exit ratings, described in the next section.*

Exit and Alumni Ratings

As graduates and alumni, what do students really remember about their instructors’ teaching and course experiences? The research indicates: a lot! A longitudinal study by Overall and Marsh (1980) compared “current-student” end-of-term-ratings with one-to-four year “alumni” after-course ratings in 100 courses. The correlation was .83 and median ratings were nearly identical. Feldman (1989) found an average correlation of .69 between current-student and alumni ratings across six cross-sectional studies. This similarity indicates alumni retain a high level of detail about their course taking experiences (Kulik, 2001).

In the field of management, workplace exit surveys and interviews are conducted regularly (Vinson, 1996). Subordinates provide valuable insights on the performance of supervisors. However, in school, exit and alumni ratings of the same faculty and courses will essentially corroborate the ratings given earlier as students. So what should alumni be asked?

E-mailing or snail-mailing a rating scale one, five, and ten years later can provide new information on the quality of teaching, usefulness of course requirements, attainment of program outcomes, effectiveness of admissions procedures, preparation for graduate work, preparation for the real world, and a variety of other topics not measured on the standard student ratings scale. This retrospective evaluation can elicit valuable feedback on teaching methods, course requirements, evaluation techniques, integration of technology, exposure to diversity, and other topics across courses or for the program as a whole. The unstructured responses may highlight specific strengths of faculty as well as furnish directions for improvement. Hamilton, Smith, Heady, and Carson (1995) reported the results of a study of open-ended questions on graduating senior exit surveys. The feedback proved useful to both faculty and administrators. Although this type of survey can tap information beyond “faculty evaluation,” such as the curriculum content and sequencing, scheduling of

classes, and facilities, it can be extremely useful as another source of evidence on the quality of teaching on a more generic level.

BOTTOM LINE: Although exit and alumni ratings are similar to original student ratings on the same scale, different scale items about the quality of teaching, courses, curriculum admissions, and other topics can provide new information. Alumni ratings should be considered as another important source of evidence on teaching effectiveness.

Employer Ratings

What “real world” approach to evaluating teaching effectiveness could tap employers’ evaluations of graduates? Did they really learn anything from their program of study? Are they successful? After time has passed, at least a year, an assessment (a.k.a. performance appraisal) of the graduate’s on-the-job performance can furnish feedback on overall teaching quality, curricular relevance, and program design. Depending on the specificity of the outcomes, inferences may be drawn about individual teaching effectiveness. However, this measure is limited because it is indirect and based on program outcomes.

The first step is to track down the graduates. The admissions office usually maintains records of employment for a few years after graduation. When graduates change jobs or escape to developing countries, PIs and bounty hunters will be needed to find them. Seppanen (1995) suggests using unemployment insurance databases to track graduates’ employment history, which can be linked directly to the institution’s information systems.

Next, decide what behaviors to measure. Program outcomes can be used when the school is preparing a graduate for a specific profession, such as teaching, nursing, accounting, engineering, football, or espionage. More generic outcomes would be given for the 8,273 other college majors.

These outcomes along with questions about satisfaction with employee performance can be assembled into a rating scale to determine the quality of his or her knowledge, skills, and abilities (KSAs) based on their performance. The ratings across graduates can pinpoint faculty, course, and program strengths and weaknesses in relation to job performance. This can yield mighty useful information.

BOTTOM LINE: Employer ratings provides an indirect source of evidence for program evaluation decisions about teaching effectiveness and attainment of program outcomes, especially for professional schools. Job performance data may be linked to

individual teaching performance, but on a very limited basis.

Administrator Ratings

Associate deans, program directors, or department heads can evaluate faculty for annual merit review according to criteria for teaching, scholarship, service, and/or practice (Diamond, 2004). After all, they were or still are faculty with expertise on teaching methods, classroom evaluation techniques, and content in the discipline. The administrator may observe teaching effectiveness and examine documentation in the three other areas, prepared by each faculty member.

Typically, a structured activity report is distributed to all faculty to furnish a comprehensive picture of achievement in all areas over the past year. The more explicit the categories requested in the report, the easier it is for faculty to complete and for administrators to evaluate. The administrators can then rate the overall quality of performance in each category. The total rating across categories can then be scaled to determine merit pay increases.

BOTTOM LINE: Administrator ratings is typically based on secondary sources, not direct observation of teaching or any other areas of performance. This source furnishes a perspective different from all other sources on merit pay and promotion decisions.

Teaching Scholarship

The scholarship of teaching and learning according to the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL), is “a public account of some or all of the full act of teaching—vision, design, enactment, outcomes, and analysis—in a manner susceptible to critical review by the teacher’s professional peers and amenable to productive employment in future work by members of the same community” (Shulman, 1998, p. 6). [*Translation:* Contribute to a growing body of knowledge about teaching and learning in higher education by presenting at teaching and learning conferences and publishing in teaching and learning journals.] This scholarship is analogous to scholarship in various disciplines.

Presentations and publications in teaching and learning on innovative teaching techniques and related issues are indicators of teaching expertise. Research on important questions in teaching and learning can not only improve a faculty member’s effectiveness in his or her own classroom, but also advance practice beyond it (Hutchings & Shulman, 1999). Evidence of teaching scholarship may consist of presentations on new teaching methods, such as research, workshops, and keynotes, at teaching institutes and conferences. There

are numerous state, regional, national, and international conferences. A few of the best interdisciplinary conferences include the Lilly Conference on College Teaching (plus regional conferences), International Conference on the Scholarship of Teaching and Learning, International Conference on College Teaching and Learning, International Society for Exploring Teaching and Learning Conference, Society for Teaching and Learning in Higher Education Conference (Canadian), and Improving University Teaching Conference. There are also discipline-specific conferences that focus exclusively on teaching and educational issues, such as the National League for Nursing (NLN) Education Summit Conference and Association for Medical Education in Europe (AMEE) Conference.

Publication-wise, there are opportunities to publish in peer-reviewed “teaching” journals. Examples are the *Journal on Excellence in College Teaching*, *College Teaching*, *Journal of Scholarship of Teaching and Learning*, *International Journal of Teaching and Learning in Higher Education*, *Research in Higher Education*, *Assessment and Evaluation in Higher Education*, and *Creative College Teaching Journal*. There are also more than 50 disciplinary journals (Weimer, 1993).

For faculty who are already conducting research and publishing in their own disciplines, this source of evidence for faculty evaluation provides an opportunity to shift gears and redirect research efforts into the teaching and learning domain. Contributions to scholarship in a discipline *AND* teaching and learning can appreciate a faculty’s net worth in two categories rather than in just one.

BOTTOM LINE: Teaching scholarship is an important source of evidence to supplement the three major direct observation sources. It can easily discriminate the “teacher scholar” and very creative faculty from all others for summative decisions.

Teaching Awards

What does this topic have to do with faculty evaluation? That’s what I’m here for. Well, the concept is somewhat narrower than the preceding sources of evidence. The link is the process by which the award is determined. A faculty nominee for any award must go through a grueling evaluation by a panel of judges according to criteria for exemplary teaching. The evidence of teaching effectiveness would be limited by the award criteria and review and the pool of nominees.

Estimates in the 1990s indicate that nearly 70% of two-year colleges and liberal arts institutions and 96% of research universities surveyed have awards or

programs honoring exemplary teaching (Jenrette & Hayes, 1996; Zahorski, 1996). The literature on the value of teaching awards as an incentive for teaching improvement is sparse (Carusetta, 2001), but runs the gamut from *yes* (Seldin & Associates, 1999; Wright & Associates, 1995) to *no* (McNaught & Anwyl, 1993; Ruedrich, Cavey, Katz, & Grush, 1992; Zahorski, 1996). There has been considerable criticism about the selection process, in particular, which tends to be erratic, vague, suspicious, and subjective (Knapper, 1997; Menges, 1996; Weimer, 1990).

BOTTOM LINE: As a source of evidence of teaching effectiveness, at best, teaching awards provide worthwhile information only on the nominees, and, at worst, they supply inaccurate and unreliable feedback on questionable nominees who may have appeared on Law and Order. The merits of teaching awards should be evaluated in the context of an institution’s network of incentives and rewards for teaching.

Learning Outcome Measures

Most of the preceding sources of evidence involve direct ratings of teaching behaviors. Learning outcome measures is a sticky source because it is indirect. Teaching performance is being inferred from students’ performance—what they learned in the course. Theall and Franklin (2001) noted consistently high correlations between student ratings of “amount learned” and overall ratings. Further, there are significant correlations between student ratings and performance on final exams (Cohen, 1981).

Despite these relationships, establishing student performance on learning outcomes as an independent, valid measure of teaching effectiveness is fraught with numerous difficulties. The crux of the problem is isolating teaching as the sole explanation for student learning. Performance throughout a course on tests, projects, reports, and other indicators may be influenced by the characteristics of the students, the institution, and the outcome measures themselves, over which faculty have no control (Berk, 1988, 1990).

Teaching effectiveness is assessed in terms of student productivity; that is, it is outcomes-based. After all, if a factory worker’s performance can be measured by the number of widgets he or she produces over a given period of time, why not evaluate faculty by his or her students’ productivity or success on outcome measures? The arguments for this factory worker–teacher productivity analogy are derived from the principles of a piece-rate compensation system (Murnane & Cohen, 1986). Piece-rate contracts is the most common form of “payment by results” (Pencavel, 1977). These contracts provide a strong incentive for workers to produce, because high productivity

results in immediate rewards.

When this system is applied to teaching it breaks down for two reasons. First, a factory worker uses the same materials (e.g., plywood and chewing gum) to make each product (e.g., widget). Faculty work with students whose characteristics vary considerably from class to class. Second, the characteristics of a factory worker's materials rarely influence his or her skills and rate of production; that is, the quality and quantity of widget production can be attributed solely to the worker. Key characteristics of students, such as ability, attitude, motivation, age, gender, and maturation, and of the institution, such as class size, classroom facilities, available technology and learning resources, and school climate, can affect student performance irrespective of what an instructor does in the classroom.

Fenwick (2001) recommends that the results of standard outcome measures, such as tests, problem-solving exercises, projects, and simulations, be aggregated across groups of students for program evaluation decisions about teaching methods and program improvement. Also, multiple measures can be combined to give meaningful feedback to faculty about patterns in outcomes.

BOTTOM LINE: Learning outcome measures should be employed with extreme caution as a source of evidence for faculty evaluation. It's safer to use in conjunction with the direct data sources described previously for program improvement.

Teaching Portfolio

The teaching portfolio is not a single source of evidence; rather, it is a shopping mall of most of the preceding 11 sources assembled systematically for the purpose of promotion and tenure decisions. In fact, portfolio is derived from two Latin root words, "port," meaning "carry," and "folio," meaning "wheelbarrel of best work to the appointments and promotions (A & P) committee with the hope of being promoted." Whew! What a derivation. The term "portfolio" has been associated with the visual arts, architecture, and modeling. It is actually a humongous, skinny, flat, zippered leather case containing photographs, sketches, drawings, securities, and Tyra Banks, which represent an artist's "best work." This package is presented to an editor with the hope of being hired. Huum. Are you noting the similarities? Good.

Teaching portfolio is "a coherent set of materials, including work samples and reflective commentary on them, compiled by a faculty member to represent his or her teaching practice as related to student learning and development" (Cerbin & Hutchings, 1993, p. 1). Ahhh. The plot thickens. Now we have two elements to consider: work samples and reflective commentary. If

you think this stuff is new and innovative, you're wrong. Work samples have been used in business and industry to measure the performance of employees for more than 50 years. The research on their effectiveness in performance appraisal has been conducted in the field of industrial/organizational psychology (Asher & Sciarrino, 1974; Siegel, 1986). Other definitions contain these basic elements, (Berk, 1999, 2002; Cox, 1995; Edgerton, Hutchings, & Quinlan, 1991; Knapper & Wright, 2001; Murray, 1995; Seldin, Annis, & Zubizarreta, 1995).

Knapper (1995) traced the most recent origins of the teaching portfolio to the work of a committee of the Canadian Association of University Teachers (CAUT). The chair, Shore (1975), argued that faculty should prepare their own evidence for teaching effectiveness – a "portfolio of evidence" (p. 8). What emerged was *The Teaching Dossier: A Guide to Its Preparation and Use* (Shore & Associates, 1980, 1986). In the 1980s, this *Guide* became the portfolio bible and the idea spread like the flu in Canada as the "dossier," in the United States as the "portfolio" (Seldin, 1980, 2004) (*Note*: "dossier" had sinister connotations near the end of Cold War), in Australia (Roe, 1987), and in the United Kingdom as the "profile" (Gibbs, 1988).

So what should we stick in the portfolio-dossier-profile to provide evidence of teaching effectiveness? The *Guide* recommends 49 categories grouped under three headings: (a) Products of good teaching, (b) Material from oneself, and (c) Information from others. Knapper and Wright (2001) offer a list of the 10 most frequently used items from a faculty survey of North American colleges and universities (O'Neil & Wright, 1995):

1. Student course and teaching evaluation data which suggest improvements or produce an overall rating of effectiveness or satisfaction
2. List of course titles and numbers, unit values or credits, enrollments with brief elaboration
3. List of course materials prepared for students
4. Participation in seminars, workshops, and professional meetings intended to improve teaching
5. Statements from colleagues who have observed teaching either as members of a teaching team or as independent observers of a particular course, or who teach other sections of the same course
6. Attempts at instructional innovations and evaluations of their effectiveness
7. Unstructured (and possibly unsolicited) written evaluations by students, including written comments on exams and letters received after a course has been completed
8. Participating in course or curriculum development

9. Evidence of effective supervision on Honors, Master's, or Ph.D. thesis
10. Student essays, creative work, and projects or field work reports (pp. 22–23)

They suggest three categories of items: (a) a statement of teaching responsibilities, (b) a statement of teaching approach or philosophy, and (c) data from students. This is considered a bare bones portfolio.

Before I present my synthesis and bottom line, there is one reaaally important underlying notion that is often overlooked: the portfolio headings and long list of sources of evidence of teaching effectiveness are designed to impress upon the most cynical, imperceptive, biased, and/or ignorant faculty on an A & P committee that *teaching is a scholarly activity* which is comparable to the list of publications, presentations, grants, and research honors presented as evidence of research scholarship. Teaching practice is not just a list of courses and student rating summaries.

Based on a synthesis of components appearing in teaching portfolios cited in the literature and used at several institutions, here is a fairly comprehensive list of elements sorted into three mutually exclusive categories:

1. Description of Teaching Responsibilities
 - a. Courses taught
 - b. Guest presentations
 - c. One-on-one teaching (e.g., scholarly projects, independent studies, thesis/dissertation committees)
 - d. Development of new programs or courses
 - e. Service on curriculum committees
 - f. Training grants
2. Reflective Analysis (5–10 pages)
 - a. Philosophy of teaching
 - b. Innovative and creative teaching techniques
 - c. Mentorship of students and faculty
 - d. Participation in faculty development activities
 - e. Scholarship of teaching
 - f. Recognition of effective teaching
3. Artifacts (Appendices – evidence to support above claims)
 - a. Syllabi
 - b. Handouts
 - c. Exams
 - d. Student work samples
 - e. Use of technology
 - f. Student ratings
 - g. Peer ratings
 - h. Alumni ratings
 - i. Videotapes/DVDs of teaching
 - j. Teaching scholarship
 - k. Consultations on teaching

Since this portfolio requires considerable time in preparation, its primary use is for career decisions – promotion and tenure (Diamond, 2004; Seldin, 2004). It is a monster self-evaluation compared to the one described previously. Faculty are required to take major responsibility for documenting their teaching accomplishments and practices. Preliminary estimates of the reliability of promotions committee judgments based on portfolios are encouraging (Anderson, 1993; Centra, 1999). The reflective component alone would benefit all faculty if they would take the time to prepare it.

BOTTOM LINE: As a collection of many of the previous sources and them some, the teaching portfolio should be reserved primarily for summative decisions to present a comprehensive picture of teaching effectiveness to complement the list of research publications.

Decision Time

So now that you've surveyed the field of sources, which ones are you going to pick? So many sources, so little time! Which sources already exist in your department? What is the quality of the measures used to provide evidence of teaching effectiveness? Are the faculty stakeholders involved in the current process?

You have some decisions to make. They may be tentative at this point. Use Table 1 and my bottom line recommendations as guides. Transforming the *unified conceptualization* into action means that you

- start with student ratings and one or more other sources that your faculty can embrace which reflect best practices in teaching;
- weigh the pluses and minuses of the different sources (don't bite off too much, but pick as many as possible);
- decide which combination of sources should be used for both formative and summative decisions and those that should be used for one type of decision but not the other, such as peer ratings.

Whatever combination of sources you choose to use, take the time and make the effort to design, execute, and report the results appropriately. The accuracy of faculty evaluation decisions hinges on the integrity of the process and the reliability and validity of the evidence you collect.

References

- AERA (American Educational Research Association), APA (American Psychological Association), & NCME (National Council on Measurement in Education) Joint Committee on Standards. (1999).

- Standards for educational and psychological testing*. Washington, DC: AERA.
- Aleamoni, L. M. (1982). Components of the instructional setting. *Instructional Evaluation*, 7, 11–16.
- Aleamoni, L. M. (1999). Student rating myths versus research facts from 1924 to 1998. *Journal of Personnel Evaluation in Education*, 13, 153–166.
- American Association of University Professors. (1974). Committee C. Statement on teaching evaluation. *AAUP Bulletin*, 60(2), 166–170.
- Anderson, E. (Ed.). (1993). *Campus use of the teaching portfolio: Twenty-five profiles*. Washington, DC: American Association for Higher Education.
- Appling, S. E., Naumann, P. L., & Berk, R. A. (2001). Using a faculty evaluation triad to achieve evidence-based teaching. *Nursing and Health Care Perspectives*, 22, 247–251.
- Arreola, R. A. (2000). *Developing a comprehensive faculty evaluation system: A handbook for college faculty and administrators on designing and operating a comprehensive faculty evaluation system* (2nd ed.). Bolton, MA: Anker.
- Asher, J. J., & Sciarrino, J. A. (1974). Realistic work sample tests: A review. *Personnel Psychology*, 27, 519–533.
- Berk, R. A. (1988). Fifty reasons why student achievement gain does not mean teacher effectiveness. *Journal of Personnel Evaluation in Education*, 1, 345–363.
- Berk, R. A. (1990). Limitations of using student achievement data for career ladder promotions and merit pay decisions. In J. V. Mitchell, Jr., S. L. Wise, & B. S. Plake (Eds.), *Assessment of teaching: Purposes, practices, and implications for the profession* (pp. 261–306). Hillsdale, NJ: Erlbaum.
- Berk, R. A. (1999). Assessment for measuring professional performance. In D. P. Ely., L. E. Odenthal, & T. J. Plomp (Eds.), *Educational science and technology: perspectives for the future* (pp. 29–48). Enschede, The Netherlands: Twente University Press.
- Berk, R. A. (2002). Teaching portfolios used for high-stakes decisions: You have technical issues! In National Evaluation Systems, *How to find and support tomorrow's teachers* (pp. 45–56). Amherst, MA: Author.
- Berk, R. A., Naumann, P. L., & Appling, S. E. (2004). Beyond student ratings: Peer observation of classroom and clinical teaching. *International Journal of Nursing Education Scholarship*, 1(1), 1–26.
- Bo-Linn, C., Gentry, J., Lowman, J., Pratt, R. W., & Zhu, R. (2004, November). *Learning from exemplary teachers*. Paper presented at the annual Lilly Conference on College Teaching, Miami University, Oxford, OH.
- Boyer, E. (1990). *Scholarship reconsidered: New priorities for the professoriate*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.
- Braskamp, L. A., Caulley, D. N., & Costin, F. (1979). Student ratings and instructor self-ratings and their relationship to student achievement. *American Educational Research Journal*, 16, 295–306.
- Braskamp, L. A., & Ory, J. C. (1994). *Assessing faculty work*. San Francisco: Jossey-Bass.
- Braskamp, L. A., Ory, J. C., & Pieper, D. M. (1981). Student written comments: Dimensions of instructional quality. *Journal of Educational Psychology*, 73, 65–70.
- Brinko, K. T. (1993). The practice of giving feedback to improve teaching: What is effective? *Journal of Higher Education*, 64(5), 54–68.
- Carnegie Foundation for the Advancement of Teaching. (1994). *National survey on the reexamination of faculty roles and rewards*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- Carusetta, E. (2001). Evaluating teaching through teaching awards. In C. Knapper & P. Cranton (Eds.), *Fresh approaches to the evaluation of teaching* (New Directions for Teaching and Learning, No. 88) (pp. 31–46). San Francisco: Jossey-Bass.
- Cashin, W. E. (1989). *Defining and evaluating college teaching* (IDEA Paper No. 21). Manhattan, KS: Center for Faculty Evaluation and Development, Kansas State University.
- Cashin, W. E. (1990). *Student ratings of teaching: Recommendations for use* (IDEA Paper No. 22). Manhattan, KS: Center for Faculty Evaluation and Development, Kansas State University.
- Cashin, W. E. (1999). Student ratings of teaching: Uses and misuses. In P. Seldin & Associates (Eds.), *Changing practices in evaluating teaching: A practical guide to improved faculty performance and promotion/tenure decisions* (pp. 25–44). Bolton, MA: Anker.
- Cederblom, D., & Lounsbury, J. W. (1980). An investigation of user acceptance of peer evaluations. *Personnel Psychology*, 33, 567–580.
- Centra, J. A. (1973). Self-ratings of college teachers: A comparison with student ratings. *Journal of Educational Measurement*, 10, 287–295.
- Centra, J. A. (1999). *Reflective faculty evaluation: Enhancing teaching and determining faculty effectiveness*. San Francisco: Jossey-Bass.
- Cerbin, W., & Hutchings, P. (1993, June). *The teaching portfolio*. Paper presented at the Bush Summer Institute, Minneapolis, MN.

- Cohen, P. A. (1981). Student ratings of instruction and student achievement: A meta-analysis of multisection validity studies. *Review of Educational Research*, 51, 281–309.
- Cohen P. A., & McKeachie, W. J. (1980). The role of colleagues in the evaluation of teaching. *Improving College and University Teaching*, 28, 147–154.
- Cox, M. D. (1995). A department-based approach to developing teaching portfolios: Perspectives for faculty and development chairs. *Journal on Excellence in College Teaching*, 6(1), 117–143.
- Cranton, P. (2001). Interpretive and critical evaluation. In C. Knapper & P. Cranton (Eds.), *Fresh approaches to the evaluation of teaching* (New Directions for Teaching and Learning, No. 88) (pp. 11–18). San Francisco: Jossey-Bass.
- d'Apollonia, S., & Abrami, P. C. (1997). Navigating student ratings of instruction. *American Psychologist*, 52, 1198–1208.
- Diamond, R. M. (2004). *Preparing for promotion, tenure, and annual review: A faculty guide* (2nd ed.). Bolton, MA: Anker.
- Doyle, K. O., & Crichton, L. I. (1978). Student, peer, and self-evaluation of college instruction. *Journal of Educational Psychology*, 70, 815–826.
- Edgerton, R., Hutchings, P., & Quinlan, K. (1991). *The teaching portfolio: Capturing the scholarship in teaching*. Washington, DC: American Association for Higher Education.
- Eiszler, C. F. (2002). College students' evaluations of teaching and grade inflation. *Research in Higher Education*, 43(4), 483–502.
- Emery, C. R., Kramer, T. R., & Tian, R. G. (2003). Return to academic standards: A critique of students' evaluations of teaching effectiveness. *Quality Assurance in Education: An International Perspective*, 11(1), 37–47.
- Feldman, K. A. (1989). Instructional effectiveness of college teachers as judged by teachers themselves, current and former students, colleagues, administrators, and external (neutral) observers. *Research in Higher Education*, 30, 137–189.
- Fenwick, T. J. (2001). Using student outcomes to evaluate teaching: A cautious exploration. In C. Knapper & P. Cranton (Eds.), *Fresh approaches to the evaluation of teaching* (New Directions for Teaching and Learning, No. 88) (pp. 63–74). San Francisco: Jossey-Bass.
- Franklin, J., & Theall, M. (1989, April). *Who read ratings: Knowledge, attitude and practice of users of students' ratings of instruction*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Gibbs, G. (1988). *Creating a teaching profile*. Bristol, England: Teaching and Educational Services.
- Greenwald, A. G. (1997). Validity concerns and usefulness of student ratings of instruction. *American Psychologist*, 52, 1182–1186.
- Greenwald, A. G., & Gillmore, G. M. (1997). Grading leniency is a removable contaminant of student ratings. *American Psychologist*, 52, 1209–1217.
- Greimel-Fuhrmann, B., & Geyer, A. (2003). Students' evaluation of teachers and instructional quality: Analysis of relevant factors based on empirical evaluation research. *Assessment & Evaluation in Higher Education*, 28(3), 229–239.
- Hamilton, J. B. III, Smith, M., Heady, R. B., & Carson, P. P. (1997). Using open-ended questions on senior exit surveys to evaluate and improve faculty performance: Results from a school of business administration. *Journal on Excellence in College Teaching*, 8(1), 23–48.
- Havelka, D., Neal, C. S., & Beasley, F. (2003, November). *Student evaluation of teaching effectiveness: What criteria are most important?* Paper presented at the annual Lilly Conference College Teaching, Miami University, Oxford, OH.
- Hutchings, P., & Shulman, L. S. (1999). The scholarship of teaching: New elaborations, new developments. *Change*, 31(5), 11–15.
- Jenrette, M., & Hayes, K. (1996). Honoring exemplary teaching: The two-year college setting. In M. D. Svinicki & R. J. Menges (Eds.), *Honoring exemplary teaching* (New Directions for Teaching and Learning, No. 65). San Francisco: Jossey-Bass.
- Keig, L. W., & Waggoner, M. D. (1994). *Collaborative peer review: The role of faculty in improving college teaching* (ASHE/ERIC Higher Education Report, No. 2). Washington, DC: Association for the Study of Higher Education.
- Keig, L. W., & Waggoner, M. D. (1995). Peer review of teaching: Improving college instruction through formative assessment. *Journal on Excellence in College Teaching*, 6(3), 51–83.
- Knapper, C. (1995). The origins of teaching portfolios. *Journal on Excellence in College Teaching*, 6(1), 45–56.
- Knapper, C. (1997). Rewards for teaching. In P. Cranton (Ed.), *University challenges in faculty work: Fresh perspectives from around the world* (New Directions for Teaching and Learning, No. 65). San Francisco: Jossey-Bass.
- Knapper, C., & Cranton, P. (Eds.). (2001). *Fresh approaches to the evaluation of teaching* (New Directions for Teaching and Learning, No. 88). San Francisco: Jossey-Bass.
- Knapper, C., & Wright, W. A. (2001). Using portfolios to document good teaching: Premises, purposes, practices. In C. Knapper & P. Cranton (Eds.), *Fresh approaches to the evaluation of teaching*

- (New Directions for Teaching and Learning, No. 88) (pp. 19–29). San Francisco: Jossey-Bass.
- Kulik, J. A. (2001). Student ratings: Validity, utility, and controversy. In M. Theall, P. C. Abrami, & L. A. Mets (Eds.), *The student ratings debate: Are they valid? How can we best use them?* (New Directions for Institutional Research, No. 109) (pp. 9–25). San Francisco: Jossey-Bass.
- Lewis, K. G. (Ed.). (2001). *Techniques and strategies for interpreting student evaluations* (New Directions for Teaching and Learning, No. 87). San Francisco: Jossey-Bass.
- Love, K. G. (1981). Comparison of peer assessment methods: Reliability, validity, friendship bias, and user reaction. *Journal of Applied Psychology*, 66, 451–457.
- Marsh, H.W., Overall, J. U., & Kesler, S. P. (1979). The validity of students' evaluations of instructional effectiveness: A comparison of faculty self-evaluations and evaluations by their students. *Journal of Educational Psychology*, 71, 149–160.
- Marsh, H. W., & Roche, L. A. (1997). Making students' evaluations of teaching effectiveness effective: The critical issues of validity, bias, and utility. *American Psychologist*, 52, 1187–1197.
- McKeachie, W. J. (1997). Student ratings: The validity of use. *American Psychologist*, 52, 1218–1225.
- McKeachie, W. J. & Kaplan, M. (1996). Persistent problems in evaluating college teaching. *AAHE Bulletin*, 48(6), 5–8.
- McNaught, C., & Anwyl, J. (1993). *Awards for teaching excellence at Australian Universities* (University of Melbourne Centre for the Study of Higher Education Research Working Paper No. 93.1). (ED 368-291)
- Menges, R. J. (1996). Awards to individuals. In M. D. Svinicki & R. J. Menges (Eds.), *Honoring exemplary teaching* (New Directions for Teaching and Learning, No. 65). San Francisco: Jossey-Bass.
- Millea, M., & Grimes, P. W. (2002). Grade expectations and student evaluation of teaching. *College Student Journal*, 36(4), 582–591.
- Millis, B. J., & Kaplan, B. B. (1995). Enhance teaching through peer classroom observations. In P. Seldin & Associates (Eds.), *Improving college teaching* (pp. 137–152). Bolton, MA: Anker.
- Muchinsky, P. M. (1995). Peer review of teaching: Lessons learned from military and industrial research on peer assessment. *Journal on Excellence in College Teaching*, 6(3), 17–30.
- Murnane, R. J., & Cohen, D. K. (1986). Merit pay and the evaluation problem: Why most merit pay plans fail and a few survive. *Harvard Educational Review*, 56, 1–17.
- Murray, J. P. (1995). The teaching portfolio: A tool for department chairperson to create a climate for teaching excellence. *Innovative Higher Education*, 19(3), 163–175.
- Nasser, F., & Fresko, B. (2002). Faculty views of student evaluation of college teaching. *Assessment & Evaluation in Higher Education*, 27(2), 187–198.
- O'Neil, C., & Wright, W. A. (1995). *Recording teaching accomplishment: A Dalhousie guide to the teaching dossier* (5th ed.). Halifax, Canada: Dalhousie University Office of Instructional Development and Technology.
- Ory, J. C., & Braskamp, L. A. (1981). Faculty perceptions of the quality and usefulness of three types of evaluative information. *Research in Higher Education*, 15, 271–282.
- Overall, J. U., & Marsh, H. W. (1980). Students' evaluations of instruction: A longitudinal study of their stability. *Journal of Educational Psychology*, 72, 321–325.
- Pencavel, J. H. (1997). Work effort, on-the-job screening, and alternative methods of remuneration. In R. Ehrenberg (Ed.), *Research in labor economics* (Vol. 1) (pp. 225–258). Greenwich, CT: JAI Press.
- Perlberg, A. E. (1983). When professors confront themselves: Towards a theoretical conceptualization of video self-confrontation in higher education. *Higher Education*, 12, 633–663.
- Read, W. J., Rama, D. V., & Raghunandan, K. (2001). The relationship between student evaluations of teaching and faculty evaluations. *Journal of Business Education*, 76(4), 189–193.
- Rice, R. E. (1991). The new American scholar: Scholarship and the purposes of the university. *Metropolitan Universities*, 1(4) 7–18.
- Romberg, E. (1985). Description of peer evaluation within a comprehensive evaluation program in a dental school. *Instructional Evaluation*, 8(1), 10–16.
- Roe, E. (1987). *How to compile a teaching portfolio..* Kensington, Australia: Federation of Australian University Staff Associations.
- Ruedrich, S. L., Cavey, C., Katz, K., & Grush, L. (1992). Recognition of teaching excellence through the use of teaching awards: A faculty perspective. *Academic Psychiatry*, 16(1), 10–13.
- Schmelkin-Pedhazur, L., Spencer, K. J., & Gellman, E. S. (1997). Faculty perspectives on course and teacher evaluation. *Research in Higher Education*, 38(5), 575–592.
- Scriven, M. (1991). *Evaluation thesaurus* (4th Ed.). Thousand Oaks, CA: Sage.

- Seldin, P. (1980). *Successful faculty evaluation programs: A practical guide to improved faculty performance and promotion/tenure decisions*. Crugers, NY: Coventry Press.
- Seldin, P. (1998, February). *The teaching portfolio*. Paper presented for the American Council on Education, Department Chairs Seminar, San Diego, CA.
- Seldin, P. (1999a). Current practices – good and bad – nationally. In P. Seldin & Associates (Eds.), *Changing practices in evaluating teaching: A practical guide to improved faculty performance and promotion/tenure decisions* (pp. 1–24). Bolton, MA: Anker.
- Seldin, P. (1999b). Self-evaluation: What works? What doesn't? In P. Seldin & Associates (Eds.), *Changing practices in evaluating teaching: A practical guide to improved faculty performance and promotion/tenure decisions* (pp. 97–115). Bolton, MA: Anker.
- Seldin, P. (2004). *The teaching portfolio* (3rd ed.). Bolton, MA: Anker.
- Seldin, P., Annis, L., & Zubizarreta, J. (1995). Answers to common questions about the teaching portfolio. *Journal on Excellence in College Teaching*, 6(1), 57–64.
- Seldin, P., & Associates (Eds.). (1999). *Changing practices in evaluating teaching: A practical guide to improve faculty performance and promotion/tenure decisions*. Bolton, MA: Anker.
- Seppanen, L. J. (1995). Linkages to the world of employment. In P. T. Ewell (Ed.), *Student tracking: New techniques, new demands*. San Francisco: Jossey-Bass.
- Shariff, S. H. (1999). Students' quality control circle: A case study on students' participation in the quality of control circles at the Faculty of Business and Management. *Assessment & Evaluation in Higher Education*, 24, 141–146.
- Shevlin, M., Banyard, P., Davies, M., & Griffiths, M. (2000). The validity of student evaluation of teaching in higher education: Love me, love my lectures? *Assessment & Evaluation in Higher Education*, 25(4), 397–405.
- Shore, B. M. (1975). Moving beyond the course evaluation questionnaire in evaluating university teaching *CAUT Bulletin*, 23(4), 7–10.
- Shore, B. M., & Associates. (1980). *The teaching dossier: A guide to its preparation and use*. Ottawa: Canadian Association of University Teachers.
- Shore, B. M., & Associates. (1986). *The teaching dossier: A guide to its preparation and use* (rev. ed.). Ottawa: Canadian Association of University Teachers.
- Shulman, L. S. (1998). Course anatomy: The dissection and analysis of knowledge through teaching. In P. Hutchings (Ed.), *The course portfolio: How faculty can examine their teaching to advance practice and improve student learning*. Washington, DC: American Association for Higher Education.
- Siegel, A. I. (1986). Performance tests. In R. A. Berk (Ed.), *Performance assessment: Methods and applications* (pp. 121–142). Baltimore, MD: Johns Hopkins University Press.
- Soderberg, L.O. (1986). A credible model: Evaluating classroom teaching in higher education. *Instructional Evaluation*, 8, 13–27.
- Sojka, J., Gupta, A. K., & Deeter-Schmelz, D. R. (2002). Student and faculty perceptions of student evaluations of teaching. *College Teaching*, 50(2), 44–49.
- Sorey, K. E. (1968). A study of the distinguishing characteristics of college faculty who are superior in regard to the teaching function. *Dissertation Abstracts*, 28(12-A), 4916.
- Sproule, R. (2002). The under-determination of instructor performance by data from the student evaluation of teaching. *Economics of Education Review*, 21(3), 287–295.
- Theall, M., Abrami, P. C., & Mets, L. A. (Eds.). (2001). *The student ratings debate: Are they valid? How can we best use them?* (New Directions for Institutional Research, No. 109). San Francisco: Jossey-Bass.
- Theall, M., & Franklin, J. L. (1990). Student ratings in the context of complex evaluation systems. In M. Theall & J. L. Franklin (Eds.), *Student ratings of instruction: Issues for improving practice* (New Directions for Teaching and Learning, No. 43). San Francisco: Jossey-Bass.
- Theall, M., & Franklin, J. L. (2001). Looking for bias in all the wrong places: A search for truth or a witch hunt in student ratings of instruction? In M. Theall, P. C., Abrami, & L. A. Mets (Eds.), *The student ratings debate: Are they valid? How can we best use them?* (New Directions for Institutional Research, No. 109) (pp. 45–56). San Francisco: Jossey-Bass.
- Trinkaus, J., (2002). Students' course and faculty evaluations: An informal look. *Psychological Reports*, 91, 988.
- US Department of Education. (1991, Winter). Assessing teaching performance. *The Department Chair: A Newsletter for Academic Administrators*, 2(3), 2.
- Vinson, M. N. (1996). The pros and cons of 360-degree feedback: Making it work. *Training and Development*, 50(4), 11–12.

- Wachtel, H. K. (1998). Student evaluation of college teaching effectiveness: A brief review. *Assessment & Evaluation in Higher Education*, 23, 199–212.
- Webb, J., & McEnerney, K. (1995). The view from the back of the classroom: A faculty-based peer observation program. *Journal on Excellence in College Teaching*, 6(3), 145–160.
- Weimer, M. E. (1990). *Improving college teaching: Strategies for developing instructional effectiveness*. San Francisco: Jossey-Bass.
- Weimer, M. E. (1993). The disciplinary journal of pedagogy. *Change*, 25, 44–51.
- Wergin, J. E. (1992, September). *Developing and using performance criteria*. Paper presented at the Virginia Commonwealth University Conference on Faculty Rewards, Richmond.
- Wright, A. W., & Associates (1995). *Teaching improvement practices: Successful strategies for higher education*. Bolton, MA: Anker.
- Zahorski, K. J. (1996). Honoring exemplary teaching in the liberal arts institution. In M. D. Svinicki & R. J. Menges (Eds.), *Honoring exemplary teaching*. (New Directions for Teaching and Learning, No. 65). San Francisco: Jossey-Bass.

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An Educational Process for Developing Student Post-Graduate Mastery in Research, Theory and Its Application

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In higher education, students are required to develop complex cognitive capabilities that they may not have needed in their undergraduate work. While a plethora of resources is available to students of research, it seems that many students struggle to understand how to read, understand, integrate, and apply research and theory to a research question or hypothesis. To help my own masters and doctoral students develop these vital skills, as part of our initial doctoral foundation course I have developed a semester-long project grounded in theory and research from cognitive instruction that explicitly teaches and supports the objectives of (a) mastery of a research-supported knowledge base, and (b) development of conceptual tools to foster understanding, integration, and effective application of research. The process of this semester-long student project follows two basic threads: (a) to build a research knowledge base in the content area and (b) to develop student skill in reading. I have used this developmental process for six years to help graduate students build both abstract and applied competencies in reading, understanding, and applying research. It has been extremely successful, based on the students' ability to use their newly developed competencies in more advanced endeavors, and their stated confidence to do so.

In higher education, especially at the post-graduate level, students are required to develop complex cognitive capabilities that they may not have needed in their undergraduate work. Specifically, masters and doctoral students early in their academic programs must demonstrate mastery of challenging concepts and skills required to read theory and research, exhibit understanding of the content of what they read, and then effectively apply and integrate that literature into writings and projects of their own. These research competencies are vital tools for students to develop and are necessary to successfully pursue their graduate programs. Sadly, instructors often find that research skills seem to be elusive and difficult for graduate students to acquire.

A plethora of resources is available to students of research. Typically, colleges and universities offer a variety of courses in research relating to research and design, statistical analysis, and the research process. Writing style manuals such as the *Publication Manual of the American Psychological Association* (2001) and the *Chicago Manual of Style* (2003) offer guidance in research writing, and many texts and handbooks (e.g. Amato, 2002; Ballenger, 2001; Garson, 2002) offer step-by-step instruction and examples to the student in how to conduct scholarly research. Moreover, throughout the last decade, more and more resources have become accessible through the Internet, ranging from stories of personal experience, through hints and tips, to "dissertation survival guides." Though these sources vary in quality and utility, all seem to be designed to help the advanced student develop skills in research reading and writing. Even with all these supports, it seems that many students struggle to understand how to read, understand, integrate, and

apply research and theory to a research question or hypothesis. Consequently, it seems not surprising that beginning students of research – my own and those of colleagues from other institutions – anecdotally report feeling anxious and concerned about their ability to learn about and eventually conduct research.

Developing Mastery of Research Skills

To help my own masters and doctoral students develop these vital skills, as part of our initial doctoral foundation course I have developed a semester-long process that explicitly teaches and supports the objectives of (a) mastery of a research-supported knowledge base and (b) development of conceptual tools to foster understanding, integration and effective application of research. The specific content of this course investigates adult developmental theory and research, but the process for building concepts and competencies in the reading and understanding of research literature and its application would seem to be adaptable to a wide range of foundation graduate programs.

The project used to support the teaching, development, and mastery of research skills in graduate students is grounded in theory and research from cognitive instruction (Bruning, Schraw, Norby, & Ronning, 2004). Over the last three decades, much research has been conducted to understand how people think and understand concepts and how they relate ideas and build new concepts from more basic ones. Pedagogical processes that are developed and supported by this body of research are typically called cognitive instruction. Cognitive instructional processes that inform the project described here include cooperative

learning (Slavin, 1996) in which student cognition is supported socially through focused peer discussion and scaffolding. Scaffolding refers to the practice of providing hints, comments, and connections to students at the point of confusion, rather than just “giving the answer” (O’Flahavan & Stein, 1992; Vygotsky, 1986). Instructors can scaffold complex learning in their students, and more capable students can scaffold less capable peers. Consequently, students simultaneously teach and learn through the support and feedback of more capable others – a process that is helpful in building concepts and useful knowledge (King, Staffieri & Adelgis, 1998; Vygotsky, 1986). Additionally, cognitive strategies for teaching and learning (Gaskins, 1998; Palinscar & Brown, 1984) help students remember concepts and make conceptual connections between concepts more consistently and effectively. Cognitive strategies also help students to understand their own learning processes (often termed metacognition). Finally, recent work by Case (1996), Fischer, Hand, and Russell (1984) and Knight and Sutton (2004) has demonstrated that people continue to develop new and increasingly abstract cognitive capabilities through early adulthood, rather than reaching completion during adolescence. Consequently, for many young graduate students competence in understanding abstract and complex concepts is still emerging and fragile. A bit of extra cognitive support from the instructor and/or capable peers at difficult junctures in content or process can often help students bridge the gap from memorizing to truly understanding the concepts at hand (Knight & Sutton, 2004). In short, when instructors employ this new knowledge through the use of cognitive instruction, enhanced student learning and comprehension typically results.

Strategy for Reading Research

One way to support graduate students’ reading and comprehension is actively to teach and discuss in class the structure of research articles, the purpose of each section of an article, and to explicitly familiarize students with research language and process. This approach, consistently employed, supports reading research novices by helping them to manage the cognitive demands of this new endeavor, and consequently supports student understanding of both research process and article content (Bruning, et. al., 2004; Kuhn, Schauble, & Garcia-Mila, 1992). Even so, when initially reading literature, typically students grapple with unfamiliar and often difficult concepts. Often several readings of an article are necessary for students to begin to understand highly abstract ideas and concepts.

During class meetings, students working in small groups are required to discuss the assigned theory and research and to identify and explain application of the concepts at hand (Slavin, 1996). Since students are likely to be thinking and understanding at similar, but somewhat varying, levels of cognitive complexity, they inevitably support and scaffold one another’s thinking in the course of their back-and-forth discussions. Those students who may be more advanced in their understanding scaffold those less advanced (e.g., “Yes, argon is an inert gas”), while simultaneously modeling more complex thinking. Further, since students bring differing experiences and perspectives on readings, group interaction results in a richer, broader understanding to each participant. Finally, the instructor circulates among the small discussion groups to monitor and clarify student understanding – and possible misconceptions – further modeling high-level thinking and supporting student comprehension. Recent work in adult cognition (Knight & Sutton, 2004) indicates that such collaborative concept building is not only helpful but also vital for graduate students to grasp and understand challenging and highly abstract concepts such as those required in reading, understanding, conducting, and writing research.

Throughout the duration of the course, students use this described process to read, discuss, apply, and integrate instructor-selected research and theory with the objective of developing a knowledge base of pertinent literature that encompasses the discipline at hand, whether that be cognitive development or highway bridge engineering. In addition, and equally important, early in the course *each student* is assigned a semester-long project that helps the student progressively to apply theory and concepts as they are learned and understood. Hence, while each student has the support and integrating discussion of the group and the scaffolding and critique of the instructor, each student must develop his or her individual research knowledge and skills with the ultimate objective of reading, writing and conducting research independently. This last objective is beyond the scope of the initial course and process described here; nevertheless the process and project are designed to lay the groundwork for each student’s eventual independent research efforts.

Semester-Long Research Application Project

The process of this semester-long student project follows two basic threads: (a) to build a research knowledge base in the content area (for example, in my course, adult developmental theory and research) and (b) to develop student skill in reading, understanding, applying and writing in the content area. The two threads intertwine as the student uses his or her growing

knowledge base to inform the interview questions that will provide data for the increasingly demanding case studies and research-integrated-application reports the student will prepare.

This example describes the process in the context of a human development course and the reports here are to be written in the style of that field. When the process is applied to a different field, the form of the reports will vary depending on the course material and the customs of that field.

The project is composed of three phases. In Phase 1 (see Table 1), students read, integrate, and apply fundamental content theory and concepts to their own experience, gathering data via a self-interview using a standard structured interview form. This application is within reach of most students since their own

experience is familiar and easily accessible near-term (Fischer, 1980). The findings of this initial phase are written and submitted in the form of a case study supported by research-based results and conclusions based on the research read so far. Each student's submission is critiqued by the instructor, who writes specific and supportive comments (Alderman, 2004) on the paper, relating to both application of research concepts and writing clarity and style; the paper is returned to the student. Then, each student must resubmit a revised paper, often through two or three critique-and-edit cycles to reach a criterion of accuracy of understanding and application and writing clarity. The student then continues to the next phase, though his or her reading for that phase typically begins before the Phase 1 criterion is reached.

TABLE 1
Adult Development, Motivation, and Learning Class Project: Project Phases and Phase Descriptions

Your class project will be comprised of three phases as described below. Your task will be to interpret your findings with the aid of concepts, theory and research and integrate them inter-personally, intra-personally and longitudinally. You will be asked to present a brief summary of your final report to the class.

Phase 1: *Interviewing yourself.*

1. Identify and describe one or more significant turning points, milestones or events in your life that have impelled you toward, prepared you for, or drawn you into Psychology, Counseling, Administration, or other profession and explain why. Relate your experience to the theories and models you are studying in class.
2. Identify and describe those of your characteristics or styles that you feel make you particularly suited for your chosen profession or make this profession your career preference or choice, and explain why. Relate and integrate these characteristics or styles to the concepts, theories and models you are studying in class.

Phase 2: *Interviewing a "mid career" similar professional in your chosen profession.*

1. Find a working professional with at least 10 years of experience in your chosen profession who is roughly halfway along his or her career.
2. Ask this person to identify and describe one or more significant turning points, milestones or events in her or his life that had impelled her or him toward, prepared her or him for, or drawn her or him into his or her profession and explain why. Relate your observations of her or his experience to the theories and models you are studying in class.
3. Ask this person to identify and describe those of his or her characteristics or styles that he or she feels make him or her particularly suited for this profession or make the profession his or her career preference or choice, and explain why. Relate and integrate these characteristics or styles to the concepts, theories and models you are studying in class.
4. Relate the events and characteristics described by this person with your own events and characteristics that you described in Phase 1. Reflect on the data and use your understanding of the concepts, theories and models studied in class to integrate your findings.

Phase 3: *Interviewing an "end career" professional.*

1. Find a professional, near, at, or past the end of her or his career (a retired Psychologist, Counselor or College Professor, for example).
2. Ask this person to identify and describe one or more significant turning points, milestones or events in her or his life that had impelled her or him toward, prepared her or him for, or drawn her or him into the chosen profession, and explain why. Relate your observations of her or his experience to the theories and models you are studying in class.
3. Ask this person to identify and describe those of his or her characteristics or style that he or she feels make him or her particularly suited for his or her career preference or choice, and explain why. Relate these characteristics or styles to the concepts, theories and models you are studying in class.
4. Then, ask this person to contemplate their experience and think of a *specific entry-level professional they have known* while answering the above two questions (2 & 3) in regard to the entry level professional of whom they are thinking. That is, you want the *senior professional's* observations of an *entry-level professional*.
5. Relate the events and characteristics described by this person with regards both *to himself and to the entry-level professional he described* to your corresponding findings from Phase 1 and your corresponding findings from Phase 2. Reflect on the data and use your understanding of the concepts, theories and models studied in class to integrate your findings.
6. Prepare a comprehensive review of your data, interpreting your findings with the aid of concepts, theory and research and integrate them inter-personally, intra-personally and longitudinally. Be prepared to justify your conclusions after presenting them to the class.

In Phase 2 (see Table 1), students tackle additional readings that build on their growing foundation of research skills and apply all of their nascent but growing theory and knowledge to a selected complex case study. This task is more challenging in two ways: (a) the students must learn, understand and integrate approximately twice the volume of research than was required for the first phase, and (b) they must apply their growing knowledge to a constrained context that is not familiar to them and consequently not as accessible – in this case, a mid-career person they seek out and interview using a structured interview format. As in Phase 1, the student writes and submits the findings of the second phase as a case study with research-based results and conclusions, based on all the readings encountered thus far. As before, each student's submission is critiqued by the instructor, who provides specific and supportive comments written directly on the student's paper (regarding both application of research concepts and writing clarity and style) and returns it to the student. Each student revises and resubmits her or his paper, often progressing through two or three editing cycles to reach a criterion of integrated understanding and application and writing clarity and form. The student then continues to the third phase, though his or her reading for that phase typically begins before the second phase's criterion is reached.

Finally, as the course nears its end, students grapple with Phase 3 (see Table 1). To complete this phase, each student must have read, understood and integrated the entire scope of assigned readings and must apply the entire scope of theory and concepts therein to an in-depth, multifaceted case or experimental context and explain the findings and dynamics or processes of the case effectively and comprehensively. Again, the student submits a paper that presents a thorough understanding of the entire body of research studied and demonstrates accurate application via a structured interview with an end-career person with an explanation of appropriate findings, concepts, dynamics and processes. The student is given specific written feedback and suggestions to improve both application of the research base and to improve writing style. The student edits and resubmits this comprehensive effort, often through one or two more cycles, until a near-professional or professional level is reached – in both effective use of research literature and quality of written expression and communication. Last, the student is required to return to his or her Phase 1 and Phase 2 efforts and recast each paper in terms of the full range of readings studied in the course. At this point, the students' rewritten efforts are typically of very high quality in terms of breadth and application of both research and written presentation. Rarely is a third rewrite necessary.

Students who complete this demanding process develop a content knowledge base upon which they can refer and build further concepts. Further, through repeated and effective written feedback from their instructor, the students have learned how to understand, select, apply and write about theory and concepts that define and relate their content area. Consequently, the students have seen their research skills progressively grow and expand in terms of what they know, how they know it, and how to write about their chosen discipline.

Application

The adult development course I teach is a foundation course for advanced masters and beginning doctoral students. The course emphasizes cognitive development, learning, decision-making, and motivation from late adolescence through late adulthood. Course materials include an adult developmental text with two dozen carefully chosen text-augmenting articles. All theories and concepts in these materials become part of each student's project's literature base. Semi-structured interview data recorded verbatim is the source data for the students' application of the research materials provided.

In this project, each student interviews three persons: for Phase 1, herself or himself; for Phase 2, a mid-career person in the student's chosen career; and for Phase 3, a late career person. Permission and confidentiality procedures are carefully followed. With semi-structured questions (see Table 1) similar for all three interviewees, the student explores the interviewees' career selection and advancement decision processes. The three interviews are done early (Phase 1), at the midpoint (Phase 2), and late in the semester (Phase 3), to support progressive mastery, integration and application of literature.

After the Phase 1 interview, the student must clearly report in written form her or his findings, incorporating concepts and theories from the literature studied up to the time of that interview. The initial, self-interview requires mastery and application of only six or seven references, meticulously selected and supported.

For the second, Phase 2 interview, a dozen or more references are required, representing the literature studied to that point. Now, the student must not only apply literature effectively to another person rather than to himself or herself, in depth, but also compare the findings – and appropriate literature – from the self-interview to the mid-career person's interview. The third, Phase 3 interview, is correspondingly more demanding; the results of the first two interviews and all the literature and concepts from the entire course are to be considered, and comparisons, concepts and trends identified across all three interviewees.

TABLE 2
Criteria for Phases 1, 2 and 3 Integrated Reports

1. Identify and analyze overall trends, themes, influences, or motivating factors, supported by data from the interview. You will use appropriate application of theory from a number of perspectives to explain/explore as determined by the phase of analysis.
2. Clarity of argument, thinking and scholarly support is required.
3. Clarity and precision of writing is required.
4. Appropriately reference in text and on reference sheet the research/theory applied, using APA Style, 5th Edition.
5. Concisely summarize your analyses at the close of each interview—clarity in thinking and writing is required.

Further, the late career interviewee is also asked to reflect upon the early career process in order to capture an experienced person's changes in perspective over time.

Interview reports are criterion-assessed, using the criteria in Table 2. Typically, students rewrite – and improve with extensive instructor feedback and coaching – each report several times before meeting that part's criteria. With each interview, students master more literature, applying concepts with greater precision and clarity, in successively more complex

writings. When the student has written and annotated all three interviews, related concepts, identified and embodied trends and theory from the entire course, revising the entire project for scholarly competence, they have met the criteria of the project rubric (see Table 3). Having met the criteria, they have achieved the objectives of the course: demonstrating mastery of a developmental psychology knowledge base, and have honed conceptual tools that will foster understanding, integration and effective application of research literature in both reading and writing.

TABLE 3
Rubric for Final Integrated Reports

Category	A-Range	B-Range	C-Range	D-Range
Interview Data	Interview data are appropriate in scope, content and rigor, and are described in terms of background and purpose.	Interview data are appropriate in both scope and content, but not fully described and/or lacking in rigor.	Interview data are appropriate in both scope and content, but lack clear description and rigor.	Interview data are not appropriate for this class.
Writing and Organization	The paper has a logical organization and is written clearly, coherently and with precision.	Writing is basically clear, logical and well-structured with minor grammatical/usage/organization difficulties.	Writing is somewhat choppy, organization difficult to follow. Grammatical and/or usage errors present.	Writing is unacceptable for post-graduate-level work
Literature and Organization	Literature is selected from appropriate professional sources with sound decision making; organized by topics and integrated or connected; and clearly establishes support and rationale for your integrated report.	Literature is from professional sources, appropriate for the interviews and project, but may be more "knowledge telling" rather than selecting and explaining, may be too limited or lack integration.	Literature is topically appropriate, but insufficient for explaining interview findings; not logically organized, and/or inconsistently supportive of integrated findings and conclusions.	Literature is not from approved professional sources, clearly misused or not organized by topics.
Interpretation and Conclusion	The interpretation/conclusion refers to literature for support and follows directly from the concepts identified in the interviews.	The interpretation and conclusions drawn from the interview data are not clearly and explicitly related to the literature.	The interpretation is vague, or poorly related to project goals.	Interpretation/conclusion absent or unconnected to literature/ interviews or inappropriate.
APA Citations and References	APA style is appropriately used for text citations and reference list.	APA style is appropriately used for citations and reference list with only occasional minor errors.	APA is used for citations and references, but often incorrectly.	APA style for references and citations not used or consistently incorrect.

With a little imagination this process can be applied to a wide range of subject domains. For example, in civil engineering students could develop an integrated understanding of the development of bridge technology, from simple Roman arch through nineteenth century truss to modern cable-stayed structures. In this supportive process, readings in bridge construction could be coordinated with the student's selection of an example of each type of bridge, writing reports similar in form (if not content) to the reports described above. Rather than integrating research into human development with each level of a person's development, the student would be integrating bridge design and research with an existing modern bridge of his or her choice. The process would be the same, including the final fully developed project.

Conclusion

For the last six years, I have used this iterative, developmental process to help graduate students build both abstract and applied competencies in reading, understanding, and applying research. To date it has been extremely successful, based on the students' ability to use their newly developed competencies in more advanced endeavors and their stated confidence to do so. While it is difficult to estimate long-term effects of any course, it is not unusual for dissertation-level scholars to report to me that this course started them down the road toward effectively reading, understanding and conducting their own research. To me, these testimonials are the best legacy an instructor could ever desire.

References

- Alderman, M. K. (2004). *Motivation for achievement: Possibilities of teaching and learning* (2nd ed.). Mahwah, NJ: Erlbaum.
- Amato, C. J. (2002). *The world's easiest guide to using the APA: A user friendly manual for formatting research papers according to the American Psychological Association style guide* (3rd ed.). Corona, CA: Stargazer Publishing.
- American Psychological Association (2001). *Publication manual of the American Psychological Association* (5th ed.). Washington, DC: APA.
- Ballenger, B. P. (2001). *The curious researcher: A guide to writing research papers* (3rd Ed.). Boston: Allyn & Bacon.
- Bruning, R. H., Schraw, G. J., Norby, M. M., & Ronning, R. R. (2004). *Cognitive psychology and instruction* (4th ed.). Upper Saddle River, NJ: Pearson.
- Case, R. (1996). Changing views of knowledge and their impact on educational research and practice. In D. R. Olson & N. Torrance (Eds.), *The handbook of education and human development: New models of learning, teaching and schooling* (pp. 75-99). Cambridge, MA: Blackwell.
- Chicago manual of style* (2003). Chicago: University of Chicago Press.
- Fischer, K. W. (1980). A theory of cognitive development: the control and construction of hierarchies of skills, *Psychological Review*, 87, 477-531.
- Fischer, K. W., Hand, H. H., & Russell, S. (1984). The development of abstractions in adolescence and adulthood. In M. L. Commons, F. A. Richards, & C. Armon (Eds.) *Beyond formal operations: Late adolescent and adult cognitive development*, New York: Praeger.
- Garson, G.D. (2002). *Guide to writing empirical papers, theses and dissertations*. New York: Marcel Dekker.
- Gaskins, I. W. (1998). Teachers as thinking coaches: Creating strategic learners and problem solvers. *Journal of Reading, Writing, and Learning Disabilities*, 4, 35-48.
- King, A., Staffieri, A., & Adelgeis, A. (1998). Mutual peer tutoring: Effects of structuring tutorial interaction to scaffold peer learning. *Journal of Educational Psychology*, 90, 134-152.
- Knight, C. C. & Sutton, R. E. (2004). Neo-Piagetian theory and research: Enhancing pedagogical practice for educators of adults. *London Review of Education*, 2(1), 47-60.
- Kuhn, D., Schauble, L., & Garcia-Mila, M. (1992). Cross-domain development of scientific reasoning. *Cognition and Instruction*, 9, 285-327.
- O'Flahavan, J. F., & Stein, C. (1992). In search of the teacher's role in peer discussions about literature. *Reading in Virginia*, 16, 34-42.
- Palincsar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction*, 1, 117-175.
- Slavin, R.E. (1996). *Cooperative Learning: Theory, Research, and Practice*. Needham, Boston: Allyn & Bacon.
- Vygotsky, L. (1986). *Thought and language* (rev. ed.). Cambridge, Boston: MIT Press.

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Increasing Personal Cultural Awareness Through Discussions With International Students

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Pairs of first year master's level students in the "Counseling Diverse Populations" course led discussion groups with international students about U.S. culture. The fundamental purpose of this assignment was to increase awareness of the counseling students' culture, as called for in the Multicultural Counseling Competencies. Advance preparation resulted in a combined class list of questions. Each session was video taped and feedback was provided. In this paper, segments of a discussion group transcript, student reflection paper, and professor feedback are provided. Over three years, students have rated this assignment as one of the most valuable assignment of the semester.

Across many higher education disciplines, attempts are being made to broaden cultural awareness (Bardhan, 2003; Clark, 2002; Gilleard & Gilleard, 2002; Morey & Kitano, 1997; Mushi, 2004; Oltjenbruns & Love, 1998; Roberts, 1998; Starkey & Osler, 2001). One of the challenges many individuals experience in recognizing and valuing other cultures is that they do not have an awareness of themselves as cultural beings. This can be attributed to White privilege (McIntosh, 1990), or to cultural encapsulation and an understanding that, similar to a fish not recognizing water because it is a constant and no alternative can be imagined, many students do not recognize their own culture because they have not experienced anything different (Banks, 2002; Brislin & Pedersen, 1976). With this challenge in mind, we devised a course requirement that allowed students to hear about their culture from people who come from a variety of other cultures. International students from our own campus, as well as immigrants in our community, provided stories and insights about their experiences with American culture, which allowed our students to vicariously see their own culture.

Introduction: The Challenge

Our class is specifically for master's level counselors. The students are in the program for two years, and are primarily involved in internships during the second year. Our class, "Counseling Diverse Populations," is taught in the second semester of the first year. Our campus is predominantly white, and our master's counseling cohort is predominantly female. Generally, our students are not widely traveled and many have lived primarily within one culture, that of the southeast United States. Although this setting is important to understand for contextual reasons, this assignment and approach is adaptable to other curricular areas and settings.

In the Counseling field, similar to most fields considered helping professions, we are very cognizant

of the need to be culturally aware and culturally appropriate in our interactions. Within our professional area, we have developed a set of awarenesses, knowledge and skills known as the *Multicultural Counseling Competencies* (Sue, Arredondo, & McDavis, 1992). The first characteristic identified within the Multicultural Counseling Competencies is "counselor awareness of own assumptions, values, and biases" (p. 479). Within this characteristic, culturally skilled counselors are described as: "being aware of and sensitive to their own cultural heritage; having knowledge about their own racial and cultural heritage and how it personally and professionally affects their definitions and biases of normality-abnormality and the process of counseling; and possessing knowledge about their social impact upon others" (Sue, et al., p. 479). Locke (1998) also indicated that the first step in understanding others was an understanding of self, one's own culture and worldview. The American Psychological Association (1993) developed similar guidelines including an awareness of how both psychologists' own and their client's cultural backgrounds influence psychological processes.

These specific competencies are undoubtedly echoed in dispositions desired in professionals in all fields. For example, The Council of Europe has endorsed a Common European Framework of Modern Languages, which includes a taxonomy of objectives including "the ability to relate one's own culture to the foreign culture" (Starkey & Osler, 2001, p. 315) to enhance language learning. One cannot relate one's own culture to anything if it is not acknowledged. Evaluation of international internships in Hotel and Restaurant Administration acknowledged a need for students to recognize the extent of differences in their own cultural values and norms to those of their counterparts in the host country (Roberts, 1998). Teacher education calls for individuals who are able to deal with the ambiguities associated with learning about their own culture and those of others (Dee & Henkin,

2002), and who are self-aware and willing to confront their own cultural identities (Gay, 1997). Engineering educators recognize that engineering students who become more cross-culturally sensitive and work at developing communication skills will be more employable in the multinational job market (Gilleard & Gilleard, 2002).

More generally, Friere (1972) advocated that one of the main purposes of education is to liberate people to an awareness of themselves in social context. Self-awareness, particularly as it relates to ourselves in the process of relating to other individuals, is a critical piece to all areas and levels of education.

Anthropologists have long understood that those within a culture, without an opportunity to look at it from the outside, are not able to examine or understand their own culture (Hammersley & Atkinson, 1995). Although it can be argued that minorities within the U.S. population interact with the predominant, White culture and can be considered bi-cultural, many majority U.S. citizens do not have the experience of seeing their culture from the outside. Indeed, according to at least two theories on White Identity Development, the first step is a lack of awareness of themselves as racial or cultural beings, that is, Whites are initially unaware of their own worldview and culture (Hardiman and Ponterotto, as cited in Wehrly, 1995).

A common reaction we and other educators receive from White students to a commonly assigned personal heritage paper is "I don't have a culture" (Leach & Carlton, 1997; Wehrly, 1995). Our challenge was to create an assignment that would provoke the students to learn about their culture from outsiders.

Solution: Transformation and Involvement

Within the field of Multicultural Education, Banks (2002) outlined four approaches to curriculum reform. Levels 1 and 2, Contributions and Additive Approaches, essentially maintain the status quo of education with a few tidbits thrown in to include underrepresented people and cultures. We hoped to integrate more of Levels 3 and 4 into our class. Level 3, the Transformation Approach, is described as: "The structure of the curriculum is changed to enable students to view concepts, issues, events, and themes from the perspective of diverse ethnic and cultural groups" (Banks, 2002, p. 30). This approach encourages students to understand knowledge as social construction, listen to a variety of voices, and think critically. Level 4, the Social Action Approach, is described as: "Students make decisions on important social issues and take actions to help solve them" (Banks, 2002, p. 30).

Previous educational studies have indicated that active learning is most valuable, as evidenced in a study

of a similar counseling course in which one group of students interacted over the semester with immigrants or refugees while another group participated in other (but less personal) interactions with other cultures. Not surprisingly, the students with the higher level of interaction gained more from the class as measured by grades on the final examination as well as evaluation of their journals (Mio, 1989). Additionally, students who have the opportunity to travel abroad or experience an international student group in other ways:

learn about the view of others, and become aware of their own frame of reference. Others serve as a mirror through which students obtain an image of their home culture. Against this background, it seems inevitable that the study of other cultures, countries, or religions, also encompasses the study of the home culture...For some students, it is the first time their own taken-for-granted culture becomes visible to them, or they realize that other people hold stereotypes and prejudices about them. (Stier, 2003, p. 79 - 80)

Short of sending our students overseas for a period of time, which would be ideal, we brought them together with groups of international students with the specific task of discussing U.S. culture. We have a significant international student population on our campus and community, including graduate students, families, and those attending English Language courses through a variety of sources. We have also asked local immigrant populations to participate in the discussion groups. The international students are often seeking opportunities to interact with U.S. citizens, and the teachers consistently express excitement about and appreciation for the interaction.

An added benefit to this approach was that most of the international students had only experienced the southeast United States culture within the North American continent, similar to our own students. Therefore, although we discussed the question of regional cultures and national cultures, the international students' experiences were reflective of the same culture our students represent, or at least live in currently.

Specific Purposes of the Assignment

The purposes of this assignment, as outlined in the syllabus, included the following: (a) Recognize your own culture and the impact that it has on others; (b) Increase awareness of your own cultural biases; (c) Increase awareness of cultures different from and similar to your own; (d) Recognize and reduce defensiveness about your own culture; (e) Increase your comfort level when talking about different cultures and

worldviews; (f) Create a plan to actively engage in cultural and worldview discussions with others; (g) Learn about alternative ways to approach life and education; (h) Observe individual and group dynamics as affected by cultural differences; and (i) Provide an avenue for international students to interact with American students.

Assignment

Pairs of our students led discussion groups about U.S. culture with international students. In our situation, we were able to access established groups of international students and/or spouses who met regularly for language class (EFL) or discussion. Our students arranged to meet with the classes or groups during the international students' regularly scheduled meetings, in an environment with which the international students were familiar. The class teacher or discussion leader usually introduced our students and remained in the room during the discussion. Classes or groups lasted either 60 or 90 minutes. International student membership in the classes or groups ranged from four to fifteen.

Our students were instructed to prepare in advance for the session with their co-leader classmate. They were required to submit at least five questions to initiate discussion in the groups. From these submissions, a master list of questions was circulated to the students for a comprehensive selection. Sample questions are included in the Appendix.

Students were advised that this was not a counseling session or a counseling group. However, similar to counseling sessions, a primary goal was to understand others' viewpoints, in this case about U.S. culture. Students were also advised to be aware of their own defensiveness in the discussion group. Although they were required to have questions planned, they were encouraged to not limit themselves to those questions, and to interact with the group members as group dynamics evolved.

Each student wrote a paper after the session, in which they were asked to answer the following questions: (a) What did you learn about culture and worldview?; (b) What did you learn about American culture?; (c) What did you learn about yourself as a discussant of culture?; (d) What did you do or say that promoted discussion in this group?; and (e) What did you do or say that hindered discussion in this group?

Each session was taped and feedback was provided to students regarding their communication. Feedback focused on the following areas: (a) Comfort – your own as well as your effect on others' comfort; (b) Inclusiveness – awareness of and ability to include all in the room; (c) Invitingness – willingness to embrace

other cultures and ideas; (d) Appropriate use of language – awareness of effect of verbal and non-verbal language; (e) Appropriate use of questions and responses; (f) Awareness of and/or comfort in asking about cultural norms; (g) Awareness of and adjustment to group dynamics; and (h) Evidence of pre-planning.

Sample Excerpt

An excerpt from a tape, pertinent reflections in student papers, and feedback are related below. Both students granted permission for inclusion in publications.

[International Student]: I was shocked that people went to the mall as a party; the weekend plan was to go to the mall. My country is a very poor country, so if you buy something it is because you really need it. Here it is like you buy something that you already have, so you can have two pieces of the same stuff, or three or maybe four. Money here is like something to play with.

[Counselor in Training]: So how would you change that, would you make Americans see how fortunate we are?

[International Student]: Maybe to realize what is really important and how you can spend your time in different ways – talking with friends – or different ways other than shopping, and not to think that you are better because you have more things. It's like you work and buy, work and buy, and this relation does not work for me.

[Counselor in Training]: So do you think Americans are materialistic?

[International Student]: Yes

[Counselor in Training]: How many others would agree with that?

Reflections from this student's paper included,

When I listened to the International students I agreed with everything they said. Americans are materialistic....Most of these things I did not realize because I live with them every day.

Feedback from professor on this section of the tape included,

When the woman was talking about the shopping excursions in America, you paraphrased this with a question about 'how fortunate we are'. I think the

term fortunate came from your values rather than from her statements. You did phrase it as a question and she felt comfortable in clarifying that she did not see this as fortunate, so she was able to clarify her thoughts. This is the crux of multicultural counseling – being able to hear what the other person is saying without imposing our own values. You may need to pay more attention to your communication, learn to monitor when you are introducing your own values, and learn to see and reflect what is important in the other person's eyes rather than your own.

Classroom Follow-Up

The student class discussion following the assignment was also instrumental to the learning process. Students listed various characteristics associated with Americans by the international students and discussed actions that could lead to those associations. A typical example was that many International students report experiencing Americans as busy, rushed, and uncaring. During the discussion groups, our students learned that the action that brought about this generalization was the habit of Americans to say “hi, how are you” to people as they pass by, without stopping or seemingly caring what the response was. Our students had never stopped to think about the impact of this seemingly innocuous cultural habit. Overall, our students admit to the practice, but not to the attribution of rushed, busy and uncaring. In general, they were able to see a progression of how ideas about others' cultures can stem from misinterpretations of actions, and that the misinterpretation can be based on our own cultural lens. They were also able to acknowledge many of the cultural characteristics that had been identified by the international students. They indicated that their comfort level in talking about culture increased. This was evident on some of the tapes where the students exhibited an initial anxiety. Most of the international students shared amusing stories and insights. This sharing added a relaxed dimension to an educational and rich topic.

Assessment

At the end of each semester, students were given a list of the class activities and were asked to rate them anonymously on a scale of 1 (Worthless) to 6 (Invaluable). In the three years we have taught the course with this assignment, 45 students have been involved. Of these participants, 21 students identified this activity as a 6, *Invaluable – what I learned from this assignment changed my viewpoint*, 16 students rated the activity as either a 5, *Very helpful – I learned quite a bit from this activity*, or a 4, *Quite helpful – I*

learned a lot from this activity, and 8 students rated the activity as either a 3, *Somewhat helpful – I learned something from this assignment*, a 2, *A little helpful*, or a 1, *Worthless – I learned nothing from this assignment*.

In a follow-up question, they were asked to reflect on one or two of the activities they thought were the most beneficial, and what the value was. Reflections included the following quotes:

1. This activity forced me to become a minority, and it made me more sensitive to the struggles immigrants and foreign students encounter when they come to the U.S.
2. I learned a lot about American culture – it made me want to have more immersion experiences.
3. It was an opportunity to share views with several cultures at one time.
4. Brought into focus the importance of considering cultural background and individual differences.
5. An eye-opening, real-life experience.
6. Great practice with asking questions about culture.
7. A valuable learning experience about how other people view our own culture in America.
8. A chance to be exposed to situations that I wouldn't otherwise be exposed to.
9. I became aware of my stereotypes, and their responses and discussions really made me think!
10. This allowed me to view American culture from a different perspective.

Since this is one of many assignments in a class within a program that focuses on developing empathy and communication skills, it is impossible for us to indicate the impact of this individual assignment on behavioral and developmental change among our students. This is one of the many challenges of assessing courses that use many different modalities. We continue to rely on the consistency of feedback from the students about the value of the assignments.

Modifications

As indicated earlier, this assignment was designed with our particular population in mind. With other populations and curriculums, the approach could still be used in various ways. A discussion about U.S. culture would benefit any groups of students, but there may also be additional variations of the questions – for example experiences with, views about, or practices of health care, education, child rearing, or technology. Generally, any concept for which there are cultural variations, which arguably includes everything, can be the focus of questions with an international population.

Hopefully, through an increased awareness of the fact that there are different ways of looking at questions, self-awareness, adaptability, and creativity will develop as well.

References

- American Psychological Association. (1993). Guidelines for providers of psychological services to ethnic, linguistic, and culturally diverse populations. *American Psychologist*, 48, 45-48.
- Banks, J.A. (2002). *An Introduction to Multicultural Education* (3rd ed.). Boston: Allyn and Bacon.
- Bardhan, N. (2003). Creating spaces for international and multi(inter)cultural perspectives in undergraduate public relations education. *Communication Education*, 52, 164-172.
- Brislin, R.W., & Pedersen, P. (1976). *Cross-Cultural Orientation Programs*. New York: Gardner Press.
- Clark, C. (2002). Effective multicultural curriculum transformation across disciplines. *Multicultural Perspectives*, 4, 37-46.
- Dee, J.R., & Henkin, A.B. (2002). Assessing dispositions toward cultural diversity among preservice teachers. *Urban Education*, 37, 22-40.
- Friere, P. (1972). *Pedagogy of the oppressed*. New York: Herder & Herder.
- Gay, G. (1997). Multicultural infusion in teacher education: Foundations and applications. In A.I. Morey and M.K. Kitano (Eds.), *Multicultural Course Transformation in Higher Education; A Broader Truth* (pp. 192-210). Boston: Allyn and Bacon.
- Gilleard, J., & Gilleard, J.D. (2002) Developing cross-cultural communication skills. *Journal of Professional Issues in Engineering Education and Practice*, 128, 187-199.
- Hammersley, M., & Atkinson, P. (1995) What is ethnography? In Martyn Hammersley and Paul Atkinson, (Eds.) *Ethnography: Principles in Practice* (2nd ed. pp. 1-22). New York: Routledge.
- Leach, M.M., & Carlton, M.A. (1997) Toward defining a multicultural teaching philosophy. In D.B. Pope-Davis and H.L.K. Coleman (Eds.), *Multicultural Counseling Competencies: Assessment, Education and Training, and Supervision* (pp.184-208). Thousand Oaks, CA: Sage Publications.
- Locke, D.C. (1998). *Increasing Multicultural Understanding: A Comprehensive Model*. 2nd ed. Thousand Oaks, CA: Sage Publications.
- McIntosh, P. (1990). White privilege: Unpacking the invisible knapsack. *Independent School*, 49, 31-36.
- Mio, J.S. (1989). Experiential involvement as an adjunct to teaching cultural sensitivity. *Journal of Multicultural Counseling and Development*, 17, 38-46.
- Morey, A.I., & Kitano, M.K. (Eds.) (1997). *Multicultural Course Transformation in Higher Education: A Broader Truth*. Boston: Allyn and Bacon.
- Mushi, S. (2004). Multicultural competencies in teaching: a typology of classroom activities. *Intercultural Education*, 15, 179-194.
- Oltjenbruns, K., & Love, C.L. (1998). Infusing a multicultural perspective into higher education curricula. *Journal of Family and Consumer Sciences*, 90, 54-57.
- Roberts, E.H. (1998). The innocents abroad: do students face international internships unprepared? *Cornell Hotel and Restaurant Administration*, 39, 64-69.
- Starkey, H., & Osler, A. (2001). Language learning and anti-racism: some pedagogical challenges. *The Curriculum Journal*, 12, 313-329.
- Stier, J. (2003). Internationalisation, Ethnic Diversity and the Acquisition of Intercultural Competencies. *Intercultural Education*, 14, 77-91.
- Sue, D.W., Arredondo, P., & McDavis, R.J. (1992). Multicultural counseling competencies and standards, a call to the profession. *Journal of Counseling and Development*, 70, 477-486.
- Wehrly, B. (1995). *Pathways to Multicultural Counseling Competence: A Developmental Journey*. Pacific Grove, CA: Brooks/Cole.

Appendix

Sample Interview Questions

1. Introductions: tell us your name, where you're from, and why you came to the United States of America.
2. What was your first impression of the U.S?
3. What are some of the major differences and similarities between U.S. culture and your native culture?
4. If you could design your own world/culture, what would you take from U.S. and what would you take from your own country/culture?
5. What were your expectations and how do these compare to your experiences?
6. What do you want us to know about your culture that isn't well known in the U.S. or is misunderstood? What misconceptions about your culture do you think U.S. citizens believe?
7. What are some words you would use to describe the U.S?
8. What do you like about life in the U.S? What do you dislike?
9. How have U.S. citizens reacted to you when you have come into contact with them? Have different individuals or groups responded in different ways?
10. Have your ideas about the U.S. changed since you arrived - can you trace those changes to particular experiences? How were your perceptions changed?
11. What surprised you the most about U.S.?
12. What have been some of the funny experiences you have had with U.S. culture?
13. Do your values and beliefs contradict those of U.S. culture?
14. Do you plan to return to your native land? Would you anticipate difficulties in returning to your native country?
15. What have you seen or heard since you have been here that you do not understand?
16. What do you miss most about your home country?
17. What has been your most positive experience?
18. What seems to be the strangest thing that you have seen U.S. citizens do? How would you exhibit this behavior in your own country?
19. What would make you feel more comfortable being in U.S?
20. What do you miss about your native land?
21. What is the hardest thing you have to adjust to culturally?

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