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CALL FOR PAPERS

Manuscripts for the next issue will be due October 31, 2007. Articles will be accepted in any of the Content Areas supported by the journal.
INFORMATION FOR AUTHORS

The Journal of Effective Teaching is an electronic journal devoted to the exchange of ideas and information about undergraduate and graduate teaching. Articles are solicited for publication which address excellence in teaching at colleges and universities. We invite contributors to share their insights in pedagogy, innovations in teaching and learning, and classroom experiences in the form of a scholarly communication which will be reviewed by experts in teaching scholarship. We are particularly interested in topics addressed in the particular Content Areas described at this site, including empirical research on pedagogy, innovations in teaching and learning, and classroom experiences.

The Journal of Effective Teaching will be published online twice a year at the web site http://www.uncw.edu/cte/ET/. All manuscripts for publication should be submitted electronically to the Editor-in-Chief, Dr. Russell Herman, at jet@uncw.edu. Articles will be reviewed by two to three referees.

Manuscripts for publication should:

- Follow APA guidelines (5th Edition).
- Include an abstract and 3-5 keywords.
- Typeset in English using MS Word format and 12 pt Times New Roman.
- Articles/essays on effective teaching should be 2000-5000.
- Research articles should be 3000-8000 words.
- Tables and figures should be placed appropriately in the text.

All articles published in The Journal of Effective Teaching will be copyrighted under the Creative Commons "Attribution-Non Commercial-No Derivs" license. The Journal of Effective Teaching will require that the author sign a copyright agreement prior to publication.

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We enjoyed reviewing all of the submissions to The Journal of Effective Teaching, but unfortunately we had to return many for revision or submission to journals that address specific topics in the field of teacher education. Our mission is to be a forum to which all those reflecting on their teaching approaches and strategies will turn for guidance and insight, and one in which instructors at colleges and universities will want to see their work published in order to exert the maximum influence on teaching practices. In seeking to promote conversation on effective teaching strategies, The Journal of Effective Teaching aims to publish articles which focus on issues that cross boundaries and ignite the imaginations of instructors at colleges and universities. It requires contributors to write in ways that reach out to a broader campus audience, not specific to one discipline. Data and findings can come from one’s discipline, but the findings should have implications for all higher educators interested in effective teaching. The emphasis should also be away from the general education issues towards articles that can contribute to the improvement of teaching through new and/or effective teaching strategies. The Journal of Effective Teaching recognizes the value and importance of the peer reviewer in the overall publication process – not only in shaping the individual manuscript, but also in shaping the credibility and reputation of a journal. Thus, we invite potential authors and interested experts to volunteer serving as a reviewer. (Contact us at jet@uncw.edu to apply as a reviewer.)

The second issue of The Journal of Effective Teaching includes articles addressing the detection of plagiarism and ideas about developing trust-relationships with students to student and faculty perceptions of their communication effectiveness in the classroom. These articles help us think about how we teach and how we might document of our teaching.

In this issue we include our first example of an article in the category of the Scholarship of Teaching. This article details an exploration of methodology based studies on communication in the classroom. The topic is of broad interest as it spans several disciplines on how educators effectively communicate. Ginsberg contrasts student views of the communication in several classes with the instructor's views of that same communication. In particular, Ginsberg's thorough study identifies some of the characteristics successful teachers use to communicate effectively in the classroom, focusing on clarity and immediacy.

The next two articles may appear to address special areas of interest, but they reflect a variety of areas of interest or concern. Ryesky specifically addresses the issue of refer-
ence citing across different disciplines, including the use of different resources within disciplines. He focuses on citations in the field of law. Ryesky not only discusses the intricacies of information literacy in law courses, but brings to light issues with inconsistencies using standard course materials and the impact of the different referencing styles on teaching pedagogy, especially as relates to adjunct teaching and the growing need for communication between faculty and librarians.

Lucas and McCormick, on the other hand, look at a methodology for redesigning curriculum for under prepared college students. Their focus is on mathematics but is relevant to other areas. They describe how they set up a pilot course redesign and provide an analysis of how they carried out such strategies for bringing students up to levels of preparedness for college mathematics.

Ternus, Palmer & Faulk bring us another example of rubrics. As we had seen in the last issue, rubrics are becoming more than a tool in a specialized corner of education. More and more of our colleagues are recognizing that rubrics are something they have been using all along. However, many of us provide our own rubrics without much thought towards the structure and depth and with few examples to guide us. Ternus, Palmer & Faulk provide a rubric designed for online courses and piloted at two universities and used for faculty, peer and administrative evaluation. As with other documented well planned (online) courses, it is found that there is enhanced student learning. The rubric is included in the study and an online PDF version is available at the journal website.

The last article is about online plagiarism. Ashe and Manning explore the impact on plagiarism detection services on both faculty and students. The study includes both surveys of student behavior and opinion. It appears that a large number of students find it acceptable to cross the boundary that once was crossed by a few. Now, with increasing access to digital information and free media, the line between what is right and wrong as to how we use information has become blurred. Students are unclear (or claim they are unclear) as to how much they can claim is theirs when piecing together ideas and resources into a paper. On the other hand, professors know what they consider as creating a verbal image in one's own words as opposed to “pirating” another's words to express an idea. However, there are many differing opinions as to how effort should be expended to curb these habits. This can lead to conflict when considering adopting a tool to detect plagiarism and to even accept that there is academic dishonesty occurring in the classroom.

We hope you enjoy this issue and invite you to contribute in the future. For additional information, feel free to explore the journal web site: http://www.uncw.edu/cte/et/.
Shared Characteristics of College Faculty Who Are Effective Communicators

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Abstract

This study sought to identify what characteristics faculty who are effective classroom communicators share. Qualitative methods of interviews and observations were used to collect data at two public, comprehensive universities. College faculty with good communication, particularly, immediacy and clarity, were all found to have humanistic views of their students and to be reflective about their teaching and their communication. Those who demonstrated poor communication skills were neither humanistic nor reflective teachers. This would suggest that in order to improve faculty effectiveness, we must consider underlying views and thought processes, rather than teach successful communication techniques in isolation.

Keywords: Effective communication, immediacy, humanistic, reflective faculty.

Mastery teaching literature identifies expert teachers as having strong communication skills in the classroom (Garmston, 1994; Hativa, Barak & Simhi, 1999; Rubin & Feezel, 1986; Rubin & Morreale, 1996). Teachers’ communication methods have been noted to influence how the students feel about the learning process as well as their satisfaction and achievement in regard to the class (Cole, Sugioka, & Yamagata-Lynch, 1999; Kerssen-Griep, 2001). Instructional communication qualities of “clarity and understandableness” are among the most important characteristics associated with effective college teaching (Hativa, 1998). Student ratings of strong faculty communication are consistently associated with improved learning outcomes, with reports of increased motivation and with higher ratings of faculty effectiveness (Chesebro & McCroskey, 2001; Christensen and Menzel, 1998; Christophel 1990; Gorham, 1988; Frymier & Weser, 2001; Hativa, 1998; Witt & Wheeless, 2001). While the literature is consistent in demonstrating the value of successful communication in the classroom, little is known about the characteristics of instructors with effective communication skills. This study attempts to identify which, if any, characteristics teachers who are successful classroom communicators have in common.

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Background

In an effort to describe the types of classroom communication which are particularly effective, two instructional communication theories of immediacy and clarity have been put forward. The first instructional communication theory is immediacy which refers to the communication traits that impact the perception of psychological and physical closeness between teacher and student (Frymier, 1994; Frymier & Weser, 2001; Moore, Masterson, Christophel, & Shea, 1996). Communication behaviors that affect the perception of immediacy are commonly divided into verbal and nonverbal categories. Examples of verbal behaviors that increase a sense of immediacy include the use of present tense verbs, speaker self-disclosure, humor, and inclusiveness suggested by word choice, such as the use of “we” instead of “I” or “you.” Head nods, smiles, enthusiasm, a relaxed appearance, and eye contact are examples of behaviors that are characterized as increasing nonverbal immediacy (Frymier, 1994; Gorham, 1988; Witt & Wheeless, 2001). Teachers who use a greater number of these communication factors are said to have high immediacy. Immediacy behaviors have been positively associated with improved cognitive and affective learning (Christensen and Menzel, 1998; Christophel 1990; Gorham, 1988; Witt & Wheeless, 2001); with student reports of increased state motivation (Christensen and Menzel, 1998; Christophel 1990; Richmond, 1990); and with more favorable student ratings of faculty (Christophel & Gorham, 1995; Frymier, 1994; Moore, Masterson, Christophel & Shea, 1996; Scott & Nussbaum, 1981).

Clarity is the second instructional communication theory and has been defined as the process by which an instructor is able to effectively stimulate the desired meaning of course content in the minds of students through the use of appropriately-structured verbal and nonverbal messages (Chesebro & McCroskey, 2001; Myers & Knox, 2001). Teacher clarity contributes to the ability to stimulate student interest and learning. Clarity suggests that teachers use organizational and presentation techniques to communicate in a way that facilitates the learning process (Hativa, 1998). Examples of instructor behaviors that support the organizational component of clarity include providing advanced lecture organizers, overt identification of main points and the related subordinate points, and lecture summaries (Chesebro & McCroskey, 2001; Myers & Knox, 2001; Titsworth, 2001). Behaviors that increase teacher clarity include soliciting questions from the students, providing examples, and using clear, concise language when introducing material (Chesebro & McCroskey, 2001; Myers & Knox, 2001). Teachers who explicitly communicate to the students which concepts are particularly critical for success in the course (Hativa, 1998) and are able to stay on topic without significant digression also demonstrate good clarity (Chesebro & McCroskey, 2001). Much like immediacy, teacher clarity in the classroom has been associated with higher student ratings of faculty, greater student satisfaction with instruction, and increased student achievement in the classroom (Chesebro & McCroskey, 2001; Frymier & Weser, 2001; Hativa, 1998; Myers & Knox, 2001; Titsworth, 2001).

At this time, the studies have focused exclusively on the perceived immediacy and clarity of a faculty member as assessed by the student. The student’s perspective on teacher communication is most critical to the learning process because it is their perception
which will influence their learning outcomes. However, little is known about the characteristics of immediate and clear faculty. Without understanding any underlying qualities of teachers with effective communication, trying to improve the immediacy and clarity of less effective faculty may be a superficial exercise.

**Research Question**

While it is clearly useful to understand what types of communication strategies increase student learning and satisfaction, it is critical to understand the underlying characteristics which may contribute to the development of these skills if we are to not only understand them better, but are also able to help ourselves and others increase classroom immediacy and clarity. Thus this research asks the question: What, if any, characteristics do immediate and clear faculty share? Further, by comparing faculty with immediacy and clarity to those without, do we identify any of these characteristics as unique to one group?

**Methods**

**Study design**

The opportunity to identify the voice of each participant and hear in that voice his or her unique perspective and understanding of the issues of communication in teaching allows us to see a montage unfold. In turn we create meaning of the similarities and differences in the individual stories (Denzin & Lincoln, 1998). The teacher communication behaviors that are the focus of the research are observed in the natural context of the classroom. This use of the naturalistic settings to observe behaviors is also particularly compatible with the qualitative approach to research (Bogden & Biklen, 1998; Denzin & Lincoln, 1998).

**Participants**

This study was conducted at two public, comprehensive colleges and universities. Faculty volunteers were purposefully chosen in an attempt to have broad disciplinary representation of a typical case sampling (Glesne, 1999). Teachers were chosen from history, English, psychology, and math departments, all of which are commonly represented in liberal arts, undergraduate core curricula. Eleven tenure-track, full-time faculty volunteers from these departments were chosen to represent all four disciplines and a range of years of experience. No teachers who were in their first year of teaching were included in the study. Purposive sampling was used to include faculty who represented a range of ages, native languages, professional ranks, and number of years at their institution. I observed each participant teaching an undergraduate class of my choosing. For each classroom observed, student volunteers were solicited for interviews. Student participants were purposively selected from amongst those who volunteered to represent a range of student backgrounds, experiences and academic success.
**Data Collection**

Three sources of information were used to provide multiple perspectives and to create triangulation of material (Denzin & Lincoln, 1998). Classroom observations, the first perspective, allowed me, as an unfamiliar observer, to identify the faculty member’s immediacy and clarity using Gorham’s (1988) Immediacy Behavior Scale and Hativa’s Clarity Questionnaire (1998) as guidelines for noting specific behaviors associated with immediacy and clarity, respectively. The items included on these tools have been demonstrated to be reliable and valid measures of immediacy and clarity, respectively. They were used only as indicators of target behaviors to be observed, not used for quantitative measures.

Interviews were conducted with the instructor in order to add his or her perspective on personal characteristics. Areas of questioning were designed to elicit the perceptions and attitudes of the teacher (Glesne, 1999) including inquiries regarding the teacher’s perception of communication in the classroom, how they have developed their communication skills, the relationship perceived between their communication and student learning, and their teaching philosophy. Interviews were also completed with one or two students from each class to provide the perspective of the observer familiar with the faculty member. Student interviews followed the same semi-structured format, and students were asked to describe their teacher’s classroom communication, including which aspects of it they felt facilitated or hindered their learning. All data were collected within the course of one semester.

The approach of gathering multiple perspectives of teaching behavior has been specifically validated in previous research (Roche & Marsh, 2000). In comparing general ratings of a teacher by a student to the teacher’s own self-concept ratings, self-other agreement was found to be moderate. However, when there was an increase in the specificity of the dimension on which the observation rating was based, self-other agreement increased significantly. The authors concluded that self-other agreement observations and perceptions had high validity when the ratings were based on a specific set of behaviors such as communication techniques.

**Data Analysis**

I audio recorded each classroom observed and took field notes during the class. The transcriptions of the classes, along with the notes, were used to create an ethnographic record of the classroom (Spradley, 1980). Each individual faculty and student interview was audio recorded and then transcribed in full. In reviewing all data and developing narratives for each teacher. I created rich, thick, detailed descriptions to convey not only the teacher behaviors in the classroom but also details such as the student responses to the behaviors. These descriptions allow the reader to develop an appreciation of “accounts of subjective experiences” (Denzin & Lincoln, 2003, p. 98) and of the “associations and contexts” (p. 169) of the events and perspectives in the narrative.
I followed Creswell’s (1994; 1998) guidelines for the analytic process of data using reduction and interpretation. I used the “progressive process” of sorting, defining, and relating the data through the use of codes to interpret into relevant units to make better sense of their meanings (Glesne, 1999). Initial broad thematic codes, such as the teachers’ views of students, and thought processes regarding classroom teaching and communication were considered as data was analyzed. As I began the process of data analysis and grouping, I sorted individual faculty volunteers into two groups, those with generally positive immediacy and clarity or generally poor immediacy and clarity. Immediacy and clarity are grouped together in the analysis as past data has provided extensive evidence that they generally co-exist (Myers & Knox, 2001, Sidelinger & McCroskey, 1997). Chesebro & McCroskey (2001) suggest that the collinear relationship immediacy and clarity have with student outcome variables, such as motivation and learning, supports that the two are significantly connected. For the purposes of this study, I made no effort to quantitatively assess levels of immediacy or clarity; rather, the focus is on the overall impression of the teacher immediacy and clarity on me as an unfamiliar observer and the students, the familiar observers.

As the data collection and analysis continued, I identified where individual faculty fell on a continuum of immediacy and clarity. Of the 11 faculty participants I categorized five as having high, three as having medium, and three as having low immediacy and clarity. While sorting faculty by levels of immediacy and clarity, I continued to analyze data regarding faculty views of the students and thoughts regarding teaching and communication. These analyses allowed me to refine codes and relationships further as distinctions emerged between groups of faculty. As I analyzed the codes for patterns and themes, I “linked [them] together” to begin forming theoretical models (Denzin & Lincoln, 2003, p. 279).

I based my ratings of faculty immediacy and clarity on my extensive field notes and audiotapes made during the classroom observations, which were guided by the Immediacy Behavior Scale (Gorham, 1988), or the Clarity Questionnaire (Hativa, 1998) items, as well as the feedback I received from students during individual interviews. Interestingly, the student’s informal assessment and my own were consistent not only with each other, but also with the professor’s self-assessment. This is consistent with Roche and Marsh’s (2000) findings that self-other agreement on specific behaviors, such as communication techniques, tend to have good validity.

Five participants are used in the narratives which follow as they represent a range of professional experiences and pedagogical methodologies. A variety of years of teaching experiences as well as tenured and untenured status are represented by the five case studies. The individuals who I chose to describe in case studies also represent various points along the immediacy and clarity continuums. There are three teachers, George, Jim and Dibya, who have good immediacy and clarity, and two, Rich and Jane, who are characterized by their poor immediacy and clarity.
Results

Thematic analysis of the data reveals that teachers who are considered to have good immediacy and clarity share two distinctive traits. These faculty members all hold views of their students which was humanistic in nature. They also all discuss the value of reflection in the development of their teaching in general and in the development of their communication styles in particular. These two themes are significant because not only do all of the faculty who have immediacy and clarity share them, but the faculty who lack immediacy and clarity share neither of them.

Humanistic view of students

Humanism represents a view of education which “places the dignity of each human being ahead of other concerns. . . . The essence of humanism is respect for oneself and respect for others” (Boston Research Center, 2001, paragraph 3). Cranton (2001) describes “The Caring Teacher,” which originates in the humanistic tradition, as one who is “concerned with establishing a warm and friendly atmosphere in the classroom, providing support, encouraging good relationships among students, and makes sure the needs and feelings of each individual are considered” (p. 30). These teachers concern themselves with the comfort and well-being of the students while they are engaged in the learning process. Carl Rogers’s advocated that “whole person” learning, which promoted cognitive and affective learning simultaneously, was facilitated by humanistic educators (Rogers, 1974, p. 104). Teachers facilitate this type of learning with what Rogers (1974) termed “realness” (p. 106) or being genuinely yourself in the relationship with learners. The notions of positive regard for the students, a holistic view of them, and engaging in constructive relationships with them are all integral to the concepts of humanistic education. Teachers with high immediacy and clarity demonstrate care and concern for their students. They communicate with their students, explicitly through their words, and implicitly, through their actions, that they have an interest in their well-being. Jim, a Full Professor of History, learned that in order for his students to understand that he wanted them to succeed and meet his high expectations; he had to convey to them that he cared about them as individuals and about their learning success. He notes that “students complain about how tough I am all the time,” but he wants them to know that he is “really excited for them when they succeed.”

Communicating to his students that he cares about their general well-being, in addition to their performance in his class, is one way he offsets the anxiety that comes from the high academic demands he places on them. Jim’s care is genuine as he talks about his students that his feelings are “heartfelt.”

I really like college students. You know, I really do. I think they are fun to talk to. . . . I mean, they [are] interesting people and I get to learn a little bit about their lives. That’s what I like. That’s kind of a payoff for me in being here.

Many of the teachers who have good immediacy and clarity described the humanistic value of having a positive, mutual learning relationship with their students. George
taught middle school math for 17 years before joining the Math faculty three years ago. He begins his semester by informing the students about his view of the student-teacher relationship. He recalls,

There was a time where I felt like I had to come into the class and be perfect. You know, that really sets up this kind of “me up and you down” sort of thing. “I know it all and you sit at my feet and listen.” But if I am more interested in learning from you, we get kind of more of a level playing field. . . . I begin my class by apologizing to them. . . . I said “You know, if you took this class with me next year, I’d be a better teacher and the reason is because I’m going to learn from you all about what works and what doesn’t.”

In making this apology, he conveys to his students that he is not the person with all the answers to give to them, but that he is in a mutual learning relationship with them as they all go through the course. The idea that students have valuable contributions to make to the learning process is critical for the learning environment that George wants to have in his classroom. He says “It creates a much nicer community where we can talk and they can feel comfortable sharing with me what they like and what they didn’t.”

Dibya, an Assistant Professor of History, never fully appreciated the impact of having a relationship with faculty as a student growing up in India. As a college student in that country, she never had reciprocal communication with her faculty, nor did she have an opportunity to interact with them. During her years in higher education there, she sat in the large lecture halls, listened to teachers who came in, delivered lengthy monologues and left the room. Evaluation of learning was limited to one test per year, given at the end of the school year by outside examiners. “There is no real interaction between students and professors because professors are not going to see your paper, nor will he or she grade your paper.” This absence of interaction resulted in a lack of personalization of the Indian education process, with no “connection” between teachers and students. Dibya came to the United States for the first time to begin her doctoral education. It was then that she first experienced a teacher asking her “Well, what do you think about this problem?” With eyes wide open and mouth slightly agape, she imitates that look of shock that must have been what she felt at being asked this question. She responded to him, “You know, nobody has ever asked me what I thought.” Dibya goes on to explain:

I found that to be a very significant statement, a very powerful statement because up until then, nobody had asked me how I thought. That was very, very profound for me. . . . That never existed in my educational experience.

This experience in her own education was formative in creating the sense that “good teaching involves a lot of interaction with the students.” She reports

I do involve a lot of personal contact which I think makes students also understand that I’m here to talk with them and they can open up and it’s meant to be very interactive. Engagement is the number one ingredient for me in terms of teaching. . . . I found that missing in the Indian educational system. I realized its
importance while doing my Ph.D., realized how it influenced me and helped me succeed in life.

Jim expresses the belief that in order to be effective, a teacher must understand and appreciate who the students are. He refers to this as a “holistic” view of the students.

What I do a lot of is trying to talk to people about their experiences and relate them to historical experiences. . . . It means that I have to think about where they are at. . . . I try to make those kinds of connections to our world . . . or connections to their world.

He learned from one of his own professors to use a framework for the course content that is based on what the students are thinking about in their own lives. His mentor told him “I try to talk about the things that I think that students are most confused about at this stage in their life.”

The instructors with good immediacy and clarity express a humanistic, positive regard for their students. These teachers think highly of their students and speak optimistically of their learning. George describes being “blown away” by what his “self-motivated” students create when he gives them “freedom.” Jim is thrilled when a student in his class makes an observation that is “just brilliant.” He shows his excitement in response to their understanding through his physical energy and encouraging statements such as “That’s great!” Enthusiastic responses such as these are reassuring to the students. These teachers are impressed by their students’ desire and ability to learn. The level of respect and optimism that these teachers display for their students’ learning is evident to the unfamiliar observer and their students alike.

Instructors who are not immediate and clear do not convey a sense of respect, caring or a positive view in regard to their students. Rather than perceiving the students as partners in the teaching and learning relationship, Rich, a cognitive psychology professor, views his students as passive recipients of his knowledge. He describes his model of teaching as a “knowledge transmission model.” This model is very consistent with his personality style and his desire to have a high degree of control over the class. He summarizes “It definitely is ‘I know these things and I’m going to teach these things to you.’” The result is his students sit passively each class period, rarely asking questions and seldom engaging in any discussions. His style of teaching and his desire to have tight control over the flow of the class have deterred them from interacting with him.

He indicates that his students have expressed their frustration with the “knowledge transmission model” in the past, often asking for a variety of learning activities, such as group discussions. Though he receives these requests every semester, he has not acquiesced. He has little faith in his students’ true motivation and suspects ulterior motives behind their requests. Rich feels strongly that

to some extent they falsely believe that these things will help them to learn, but I also think to another extent they don’t really care. . . . I definitely question their
motivation. I definitely question their beliefs. . . . They think that anything that equals fun equals learning and it just doesn’t work that way.

In support of his belief that students are not truly interested in learning, he cites an article he read recently in which “they asked education students what are the qualities in a good teacher. . . . These lists had things like ‘entertaining,’ and what wasn’t on the list is ‘knowledgeable about the subject.’” He adds to this his observation that “Particularly those who are going into elementary education aren’t interested in understanding things.”

Jane, who has taught Math for nine years, also holds a largely negative view of her students’ motivation. She is frustrated by students she believes generally “don’t want to be there.” She states “I just have a majority who are not putting a lot into it. . . . It’s kind of hard if they don’t seem to care if they are passing.” Her students’ poor efforts and limited interest in the topic are significant contributors, in her mind, to the lack of her own success as a teacher. Her perception of this academic apathy is so widespread that she notes that even those who have chosen math as a major, don’t want to be there. . . . They are just not interested and this is what we have to cover and they are not interested in it. It’s hard to combat sometimes. You know, you throw in a joke or make it fun, but calculus II is not fun material. I’m sorry, now students want entertainment. Sometimes you’ve got to learn, but it’s not entertaining.

Missing in the low immediacy and clarity instructors’ vocabularies are terms that suggest the existence of relationships between themselves and their students. They typically do not describe interactions with the students and there is no reciprocity between themselves and the students. Though both Rich and Jane profess to “like interaction,” neither actually attempts to facilitate it.

These teachers generally characterize their students negatively. They believe the students are unmotivated to learn and are simply seeking “entertainment” in lieu of learning. Low immediacy and clarity teachers were not heard to express concern regarding their unsuccessful students, but rather describe exasperation with their lack of interest. Jane goes so far as to make a sweeping summary of her students, saying that “they want to learn as little as possible and get that grade on the piece of paper.” As these two professors do not describe a holistic view of their students, they do not express a desire to understand why the students are not succeeding or what each might do, as teachers, to support the students’ learning. The lack of faith in their student’s desire to learn coincides with limited care about these students. It is possible that the lack of caring for the students and limited interactions with them facilitate the teachers’ willingness to dismiss their students as uniformly not interested in learning.

**Reflection**

Reflection has been described as a critical component of teaching by numerous educators and philosophers. Dewey felt that in order for reflection to be effective, it must be a way...
for individuals to make meaning of their experience systematically, in the context of interactions with others (Dewey, 1938). He outlined the steps or phases of the reflective process, which he felt were inherent in systematic reflections which resulted in personal change. These steps included having an experience, instinctively interpreting the experience, identifying the issue associated with the experience, identifying possible explanations for the issue and expanding the explanations into hypotheses, and then testing the hypotheses.

Consistent with Dewey’s writing, Maxine Greene notes that reflection is “rooted in experience” (Greene, 1978, p. 17). She identified reflection as the method by which teachers are able to heighten consciousness regarding their own histories, beliefs, and values. It helps to “inform and clarify” our daily life experiences such that we can act upon them purposefully and move towards heightened consciousness regarding our teaching practices. Critical reflection is the means by which we are able to attain the awareness that allows us to function in a mode of being “wide-awake” (p. 43). It is by being in this wide-awake state that teachers are able to not only understand their own course of action, but to be more effectual in fostering critical thinking skills and decision making abilities, as well as the ability to consider multiple perspectives. Teacher reflection also fosters the students’ reflection, which “empowers” (p. 48) the students to be wide awake themselves. This facilitates the students’ insights into their own learning process and is consistent with the modeling of reflection for students. Schon describes reflection-in-action as vital for the teacher who “must be ready to invent new methods and must endeavor to develop in himself the ability of discovering them” (Schon, 1983, p. 66).

The teachers with good immediacy and clarity are open to these discoveries. These teachers demonstrate reflections on their experience, their knowledge of the learners and the knowledge of the classroom context that allows them to transform their “discipline-based” knowledge into the “art” of the teacher practitioner (Shulman, 1987). Through this process of reflection, the good immediacy and clarity faculty have “struggled” to move from old to new approaches to teaching, or to integrate new perspectives into their practice. The teachers who are immediate and clear discuss their use of reflection in teaching. Many of them outline their reflections on their self-described “struggles” to achieve “balance,” on their relationships with students, and on their communication in the classroom.

The difficulty of maintaining “balance” between two perspectives or two characteristics is an issue upon which many immediate and clear teachers reflect. They are trying to refine their teaching such that they encompass the best aspects of potentially conflicting perspectives in order to be effective. For Dibya and George, there is a “struggle to balance” old and new teaching pedagogies. Dibya works to have equilibrium of her “baggage” from Indian educational experience and her American educational experience. She doesn’t feel that she has yet “reached that balance.”

Dibya relies heavily on the student evaluations that are completed at the end of the semester to “see what the students found to be beneficial and what they found to be less
beneficial.” She notes, “I lay a lot [of] emphasis on the student evaluations.” When student grades are low, Dibya says

I ask myself “Why is that happening?” . . . If my class fails on an exam, that tells me, hey, they are not getting it and I can’t have my students failing in whatever they are asked to do.

She feels that widespread student failure is also an indicator of her failure. As a result of attending to this feedback, “my teaching strategies have changed over time.” In her mind, it is an ongoing process, “a learning experience, I mean you learn every day.”

George’s previous pedagogy and current teaching methods are divided by an awakening to a new approach to teaching. In recounting his teaching history, he repeatedly refers to the “old way” and the “new way” of teaching. This evolution has a clear delineation based on his exposure to constructivist theories and education during coursework at the Master’s degree level. This formal education planted a seed that would later bloom fully after he had been teaching for many years. Before developing “constructivist” teaching methods his feeling was “it’s my way or the highway.” He describes his “old way” of teaching as heavily lecture based: “I began as that sage on the stage sort of thing, all eyes on me.” He told students how to do what they should do. “In the past . . . I would have told them how to solve it and then I would have told them why they needed to know how to do it.” Through workshops and conferences, he began to develop a “huge awareness” of the importance of the process rather than the content of learning. He was “hooked” on this “new way” of teaching and began intentionally changing his teaching methods. Stepping down from the stage was “hard” and “scary.” His control of his students’ learning process began decreasing, but at the same time “it gave them the freedom and some creativity to do things differently.” He realized that he didn’t always know what the results of their work would look like, that there would be a great deal of variability from student to student in terms of how they got to their final solutions. He was so intent on becoming this new and improved teacher that despite his inherent nature to try to be a “control freak,” he decided to try to let go of his control and trust in his students’ abilities.

I’ve begun realizing, you know what, a certain amount of students may be successful by following me, but . . . more are going to be successful and I’m going to learn more and I’m going to be happier . . . if I say “okay, let’s explore the landscape, stay within site, but let’s explore.”

As a result of George’s reflections on his teaching, he no longer stands at the front of the room for much of the class. His reflections extend to his communication patterns as well. He spends little class time addressing the entire class. “I like to think I don’t do a whole lot of talking in the classroom. You know the communication I try to do is much more on a one to one sort of basis.” George is reflective about not only how he communicates in the classroom, but also about what he communicates with his students.

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I can share with them that I recognize that frustration. I can affirm that frustration. “I know that this is difficult, what you are going through at this point,” but also support them and say “I know you can get through here to the other side” and so a lot of times I become the cheerleader.

Through his communication he informs his students that he has reflected on their experience and that he has confidence in their ability to learn.

Jim also identifies the need to find a “balance” between his high standards for the students and the students’ need for support. He has thought about the fact that the effort to meet his expectations can be extremely frustrating for the student. He doesn’t want students to be deterred from working hard to achieve their goals; therefore, he works to create a supportive learning environment. Jim thinks of the challenge as a “balancing act to be both tough and yet . . . nurturing about it.” During his first year of teaching at this institution, he became aware of the need to work on this balance.

I wasn’t real clear sometimes on what it was I wanted from students, that the organization of my classes didn’t always flow really well. . . . I am a really tough grader, particularly on writing. . . . A lot of students were really frustrated with me.

During this period, he was dissatisfied with the quality of the teaching and learning experience. He was “feeling frustrated that they were frustrated.” He spent time thinking about what the students needed to be successful because he did not want to lower his standards. As a result of his insights into the students’ needs during the learning process, he modified his communication style with the students. Jim confesses

I’ve really learned that I have to articulate. You know, I just can’t think to myself, “Oh, I care about you.” You know, I have to write this, literally, on their papers and say, “You know, I want this to be a positive learning experience for you. Don’t get discouraged. If you want, give me drafts of this. I’m willing to work with you as much as I possibly can.” That sort of stuff, so that they know.

Jim notes, “I pay attention to student evaluations.” Reflection on student feedback has shaped his communication with them in the class.

When students are angry . . . it’s just really upsetting because then you sort of think what’s going on there, why is that student so frustrated and so alienated? . . . I really need to sell it in a way that is inclusive and not just me saying “You are not good enough.” I think that’s kind of required, if you expect a lot, that you have to give a lot.

High immediacy and clarity teachers are reflective about their communication patterns with their students beyond communicating their support of the students. When asked, they provide detailed descriptions of how they communicate in the classroom. They are highly cognizant and reflective of their process of communicating. George
works to convey “affirmations” about their experiences with problem-solving. He maintains open lines of communication with his students by asking if they are “comfortable” with the learning process throughout class. Jim and Dibya encourage one-on-one communication with their students. These teachers are purposeful in developing their communication skills to meet their students’ needs. Their reflections on teaching help them form this insight, which has, in turn, positively impacted their classes.

In contrast, the teachers with poor immediacy and clarity engage in very limited reflection. Their reflections tend to be focused primarily on their own behaviors with little connection to the students’ needs or intended student outcomes. Rich recognizes that he comes across to the students as aloof and “rigid.” He struggles because he wholeheartedly believes in his “knowledge transmission model” of teaching; however, he also senses that he is not an extremely effective teacher. Though he does not give credence to his students’ opinions, their evaluations of him have been overwhelmingly and consistently negative, causing him to at least acknowledge that a problem exists. Because of his inherent lack of faith in and lack of respect for his students’ insights, Rich generally discounts specific feedback in the course evaluations completed by his students. He explains that

Students are fickle and . . . these students don’t necessarily know what’s good and what’s bad, so you can only go so far and say “Do my students like me?” I mean sometimes they’ll like you for all the wrong reasons and their understanding of what good teaching is and my understanding are different. So I’m definitely not [making changes] just to get [better] evaluations.

Demonstrating some reflection about this conflict, he looks for ways of closing the gap between his current level of teaching effectiveness and where he would like it to be. He consulted his colleagues regarding alternative teaching methods he has observed them using. He gave these alternatives some consideration. He has found information in journals and books about other ways to teach, but “a lot of them seemed gimmicky. So I’ve learned to discount that.”

He is so firmly entrenched in his teaching model that he will not give credence to the advice that he receives from his colleagues or from the professional literature he reads. He will not consider alternative teaching methods, so he is forced to consider only changes that will not require modifications of his current mode of teaching. His reflections have led him to realize that something needs to change, but he has not been able to identify how to make these changes in a manner that is comfortable for him. Rich tries to adopt some of the personality characteristics of his coworker whom he feels is “just naturally a personable guy.” Unfortunately, the changes that he tries to implement, such as the use of humor in the class, are uncomfortable for him. As a result, his efforts are not making him more effective or appear more “personable.” He has not reflected on why or what to do about it, he just acknowledges that his efforts do not feel “natural.”

Jane talks about the fact that she is not good at lecturing and that her speech patterns cause confusion amongst her students. Jane’s reflections are fairly specific when it
comes to her ability to identify what she terms as her “clarity” issues. She speaks in verbal mazes which are characterized by incomplete thoughts, interjections of fillers, such as “um” and “whatever,” and nonspecific pronouns with no clear referents. She begins to talk about an idea and in mid-sentence changes stream to another related idea. As she continues talking, she remembers what she was originally talking about and switches back to the first topic. She has many false starts to her speech, which disrupt her flow. This maze pattern is evident as she illustrates her perceptions of her communication in the classroom.

I’ll write something different than what I said and usually I’ll try to catch myself, but again this would be easier for the student not to have to get that “Not that, but I meant this.” . . . If you have a few good students, they’ll catch it or at least ask the questions “Did you really mean that word in this context?” but you have to be more straightforward. The words come out wrong sometimes or whatever.

Though she recognizes that her verbal mazes are problematic, she is unable to identify specific behaviors that would improve her teaching. She has vague ideas about what needs to improve, such as needing to “slow down” and to “focus” prior to her lectures, but she hasn’t thought about how to implement these changes. Her reflections are limited as she comments “I don’t really think about [it] too much. . . . I probably should.” For teachers with low immediacy and clarity, it appears that there is a minimal connection between teacher behaviors and student learning. Jane feels that there is not much within her power to influence her students’ learning. “There [isn’t] really anything I could do . . . . Some people just don’t get it.”

These two faculty members do not describe reflecting on any relationship between their teaching behaviors and student learning. They view themselves and their actions as being fairly separate and apart from their students. They do not discuss how their teaching affects the learner. This is evident not only in the lack of language that would indicate a rapport between them, but in their teaching style, which facilitates little interaction between them. Jane does attempt to create opportunities for teaching on a one-to-one basis, but she talks about it from the perspective of her own comfort, not the students’ learning. Unfortunately, she has not reflected on how to structure this format more extensively. The result is that in reality she spends only about 10 minutes out of every two hour class working with the students in this way.

**Discussion**

The faculty in this study who demonstrate good immediacy and clarity as judged by both familiar observers, their students, and an unfamiliar observer, share two specific characteristics. They are all humanistic in their view of teaching and students. These teachers also all use reflection to improve their teaching skills in general and communication skills in particular.

The teachers’ with immediacy and clarity communicate their humanism to their students, which facilitates the development of a trusting relationship between teachers and stu-
dents. As they talk about the process of teaching and learning, they use similar words, such as “trust,” “respect,” “connect” and “engage.” The relationships are facilitated by numerous aspects of the teachers’ immediacy and clarity such as humor, a relaxed appearance, familiarity with the students’ names, individualized attention, and enthusiasm for the subject. Getting the students “engaged” in a relationship helps make them “comfortable” seeking out the support that they may need to be successful in the class. The students develop trust in a classroom where they feel connected to the teacher.

The give and take nature of a relationship extends to the expectations the teachers have for their own learning as well as their students’ learning. They see their students as having significant contributions to the learning environment. These teachers explain to the students what they have to learn from them. These faculty all view the classroom as an opportunity for everyone to learn. The learning, much like the relationships, represents a two-way exchange which is intended to be, as Dibya describes it, a “mutual process.”

The faculty members whose immediacy and clarity skills are limited have pessimistic opinions of their students. In addition to having low expectations for their learning, they do not regularly express care or concern for their students, nor do they talk about them in holistic terms. These teachers do not frequently express any thoughts regarding the existence of a relationship between themselves and their students outside of the very formal teacher-student roles. Their classroom communication likely conveys these attitudes to their students. Their poor immediacy may be a side effect of the teachers’ lack of interest in engaging with their students, or it may be a skill they did not develop due to their limited reflections. Their experience with students who find them unapproachable would foster the belief that their students were unmotivated and support their pessimistic view of the students. This creates a cycle that is difficult to break and enables these faculty members to continue operating under their negative assumptions.

It is through the process of reflection that the teachers with high immediacy and clarity continuously learn from their own experiences and the experiences of their students. In addition to thinking about events from their own perspective, these teachers demonstrate reflection on feedback received from their students, which is a critical component for effective reflection, particularly for teachers (Bandura, 2001; McAlpine & Weston, 2000). Effective faculty are successful in monitoring the relevant cues and interpreting them correctly in order to bring about effective changes in their teaching. The immediate and clear teachers attend to the formal channel of feedback that they get from the course evaluations and to the informal feedback such as class responsiveness or individual discussions with their students. This ability to consider the teaching process as it related to the students’ learning is one of the critical components for successful reflection by a teacher (Shulman, 1987).

Teachers with poor immediacy and clarity, such as Jane and Rich, are not particularly reflective teachers. They do not express the perception of a relationship between their teaching behaviors or communication and the students’ success. They see the learning as a process that happens almost independently of whatever they do. Learning is attributed to the students’ innate abilities, being “good students,” rather than to what they have done.
in the classroom. These teachers discredit the feedback and requests from their students, such as those Rich receives to vary his classroom delivery. He disregards out of hand virtually all teaching methods except his as being “gimmicky,” thus ruling them out for reflection regarding their potential value for either himself or his students. Jane has not considered seeking out the perspectives or input of her peers. For these teachers, there are few apparent sources of input worthy of their reflections.

Conclusion

This data gives us insight into some shared characteristics of immediate and clear faculty. The characteristics of being humanistic and reflective appear to have shaped their communication with their students and may actually aid in cultivating these communication traits. For these faculty members, teaching is not merely about being effective in the classroom, but it is about connecting with the students, caring about their learning process and wanting to be successful and engaged in the learning process. They use their communication to facilitate these processes. These teachers are reflective about their teaching, about the students’ learning experiences and about how they communicate with their students in the classroom. Their immediacy and clarity has been cultivated by their humanism and reflective process. The immediate and clear teacher is not simply an effective teacher due to his communication skills, but is also effective because of his reflective and humanistic nature.

If we are to improve the communicative effectiveness of our own teaching and that of others, we must look first to the underlying attitudes towards students and the use of the reflective process. The development of programs that improve the underlying humanistic and reflective qualities in university teachers who have limited effectiveness in the classroom may be of more value than address communication strategies alone. This concept likely merits exploration in future research and faculty development programs. Instructing faculty in methods of increasing immediacy and clarity without addressing these characteristics will only result in superficial changes. These may be perceived as “gimmicks.” Such changes may be inadequate to significantly improve the overall effectiveness of a college teacher.

References


On Solid Legal Ground: 
Bringing Information Literacy to 
Undergraduate-Level Law Courses

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Abstract

The complexities of the Internet and other electronic data technologies have greatly heightened the information literacy needs of students in all subjects. Law courses are common components of many undergraduate programs and other settings external to a law degree program. The field of law has many information literacy aspects which are specialized, if not unique to the field of law. The legal information literacy basics have grown complex, and continue to do so. Successful mastery of the legal information literacy skills requires practical exercise in addition to textbook reading. Information literacy can no longer be left solely to librarian. Collaboration between instructor and librarian has great potential for bringing information literacy to the students. But several logistical, technological, economic, social and political issues complicate the process and planning behind information literacy initiatives. Awareness of these issues, and a willingness to address them, can enable students to build competent legal information literacy skills.

Keywords: Information literacy, business law, undergraduate law, adjunct faculty, librarians.

The proliferation of the Internet and other text media technologies have increasingly demanded greater information literacy skills from students of all subjects (American Libr. Assn., 1989). This is certainly true for where law is the subject being taught (Keefe, 2005).

Law courses are among the curriculum requirements or electives of many undergraduate and graduate programs, including but hardly limited to disciplines such as Business (Morgan, 2003; Mosier, 1990), Environmental Sciences (Centner & Geyer, 1993) and Psychology (Greene, 1987). Professionally and academically, the field of law has several unique attributes that impact upon the information literacy of those who seek to learn it. This article will discuss the academic information literacy issues as they pertain to teaching law courses in undergraduate programs or other settings outside of law school.

Following a discussion of the various relevant attributes of the legal field, the information literacy requirements for students in undergraduate law courses will be set forth. Next,
the author's use of a presentation and a homework exercise to familiarize students in an undergraduate law course with key relevant information literacy matters will be described. Suggestions as to what can and should be done by instructors, department chairs, librarians and administrators to effectively teach information literacy in undergraduate or other non-law school settings will conclude this article.

Attributes of the Field of Law

Law, both as a profession and an academic discipline, has various unique attributes which significantly differ from those of the arts and sciences, and which must be taken into account in its instruction and literature (Monsma, 2006). Some of the significant ones are presently discussed from an information literacy perspective:

**Specialized source materials**

The literature of most academic disciplines consists mainly of their monographic texts (commonly known as "books") and their periodical articles. Some academic disciplines have appreciable literature of other genres; the performing arts, for example, have large bodies of dramatic works, audio and visual recordings, and films. While the Anglo-American legal literature certainly entails a significant quantity of scholarly monographs and periodicals, the most significant genres of source materials are constitutions, statutes, judicial opinions, and administrative regulations, which in many respects are functionally different from monographs or scholarly articles. Indeed, for legal purposes, constitutions, statutes, judicial opinions, and administrative regulations are considered primary authorities, while pronouncements of private parties or entities, such as journal articles, treatises, restatements and model codes, are secondary legal authorities (Kunz, Schmederman, Bateson, Downs & Erlinder, 1992, pp. 5 - 7; Calleros, 1998, pp. 79 - 80).

Statutes are laws enacted by the legislature (or, for that matter, dictated by a tyrant). They are usually codified according to subject matter. From an information literacy standpoint, federal and state constitutions, though superior to statutes in the hierarchy of legal authorities, are functionally similar to statutes.

Many Federal and state administrative regulations are similarly codified according to subject matter.

Judicial opinions, also known as "cases" or "judicial decisions," constitute the application and interpretation of the law by the courts. Collectively, these are the most frequently cited sources in the legal literature.

**Unique citation conventions**

The citation conventions used in the legal profession and discipline differ significantly from those of other academic disciplines. Though there are, within the legal discipline, some rivalries as to which of several legal citation systems to use (Barger, 1999; Temm, 2003), the legal citation systems have more in common with one another than they
collectively have in common with the *Chicago Manual, APA* or *MLA* systems (which, in turn, have many similarities to one another). More importantly, citation of the primary legal sources, especially the judicial opinions, differs little among the various legal citation systems.

To be sure, the *Chicago Manual* and *APA* conventions specifically defer to the legal conventions for citing primary materials such as judicial opinions (American Psychological Assn., 2001, pp. 397 - 410; University of Chicago Press, 2003, ¶ 17.275, p. 728).

The following is a typical example of a judicial opinion citation.

The matter of Richard L. Gephart versus the United States of America was decided in the Court of Appeals for the 6th Federal Circuit, and the opinion was officially filed with the Clerk of the Court on February 14, 1987. The case was reported in the *Federal Reporter, Second Series*, in Volume 818, beginning on page 469.

Using the legal citation conventions, the case is cited as follows:

"Gephart v. United States, 818 F.2d 469 (6th Cir. 1987)."

"Gephart v. United States" is the case caption.
"818" is the volume number of case reporter.
"F.2d" is the case reporter.
"469" is the first page of case reporter on which the judicial opinion appears.
"6th Cir." is the court in which the case was decided.
"1987" is the year the case was decided.

The following is a typical example of a statute citation: Section 3735 of Title 18 of the United States Code is cited as follows:


The following is a typical example of an administrative regulation citation: Section 1204.2 of Title 5 of the Code of Federal Regulations is cited as follows:

5 C.F.R. § 1204.2.

Syntactically, then, the legal citation systems tend to place the volume number before the title of the tome, a departure from the conventions of other academic disciplines.

**Database and literature issues**

Information for the legal discipline is located primarily in certain databases with which students and practitioners of the law must be familiar. The law is inextricably tied in
with the written texts upon which it is based, particularly, as previously mentioned, the
texts of judicial opinions, statutes and regulations. Changes in text media brought about
by the computer revolution and the Internet have profoundly affected the way these
textual source materials are compiled, stored and accessed, and the databases in which
they are compiled, stored and accessed (Ryesky, 2002).

The most prominent publisher of judicial opinions and statutes is the West Publishing
Company; specifically, the West Reporter system. West has a digest system which
interconnects and cross-references the statutes, judicial opinions and regulations it
publishes (Woxland, 1985). Many jurisdictions, formally or otherwise, use the West
publications as their official reporting organs.

Relatively few undergraduate libraries have the physical space or the budgets to maintain
the entire West's Reporter system. The lack of these materials is no longer the pervasive
and weighty problem it once was, however, because several on-line databases now carry
most of the West materials that would be used in an undergraduate law class. The most
notable and popular of these databases are West's own Westlaw, and the LEXIS-NEXIS
database.

For the cost factor alone, undergraduate campus libraries are more likely to subscribe to
the LEXIS-NEXIS database than the more pricy Westlaw database. But the LEXIS-
NEXIS and Westlaw databases are each better geared to keyword searching than to
browsing (though, with wildcard search terms, a user can "trick" them to facilitate
browsing over a limited range of database items). Moreover, each has its own vagaries
with its respective search engine; a missed punctuation mark or the use or nonuse of a
reserved word or a "noise" word can throw the search off target (Desert, 1993; Ryesky,
2002, 386 - 387).

The Internet has offered some freely-accessible alternatives to some portions of the
databases, but even these are problematic. The United States Code posted on the official
government website is not necessarily the most current version, for example.

The specialized legal literature databases are vast, and continually adding new items on
an almost daily basis. Knowing how to access these databases, and how to navigate
within them, are vital skills for practitioner and student alike. Obtaining and maintaining
these databases present budgetary and logistical challenges to the libraries that serve
practitioners or students of law (Hallett, 1999).

Aside from West and LEXIS-NEXIS, there are other reputable publishers of judicial
opinions whose publications and digest systems are heavily used in some specialized
legal fields. This has resulted in redundant or "parallel" sources for the same item.

As an example, the judicial opinion in the case of United States v. Boyle, decided by the
United States Supreme Court in 1985, can be cited to the following publications:

469 U.S. 241 (United States Reports, the official reporter of the Supreme Court);
In addition to the foregoing print sources, the Internet has provided additional reliable versions of judicial opinions, including the Supreme Court's own official website. Opinions from other courts are similarly posted on the Internet.

The existence of parallel sources for the same text material, so pervasive in the legal sphere, is not so commonplace in other academic disciplines, and indeed, until the development of the Internet, was a comparatively scarce phenomenon.

Another database issue is that some states have their own unique databases. In the New York City metropolitan area, for example the New York Law Journal, a daily newspaper for the legal profession, publishes judicial opinions, many of which never appear in either the West reporter system or the LEXIS-NEXIS database. Pennsylvania has its various "Side Reports" which publish many otherwise unreported judicial opinions from the lower courts of the various counties. Such state-specific sources are often not mentioned at all in most of the undergraduate law textbooks.

**Legal research and writing as a specialty**

Students at the law school level are required to take several courses devoted substantially or exclusively to legal research and writing (American Bar Assn., 2006, 17 - 18). The legal writing and research programs at the various law schools are now going through a period of intensification (Boland, 2006; Liemer & Levine, 2003), no doubt a consequence of the increased size and complexity of the legal database universe and its ever-diversifying text media modes and formats.

Undergraduate law courses do not and cannot provide their students anything resembling the legal research instruction that students in a law school receive. But the students in undergraduate law courses do need grounding in certain basics of legal information literacy.
Political issues

The political agenda of the writer and/or publisher of a legal textbook or other legal source material can have text media implications. As an example, for citation of Supreme Court opinions, a significant number of textbooks, and judicial opinions themselves, use the standard official citation with the West and the Lawyers' Cooperative parallels, e.g., the aforementioned Boyle case is often cited as:


But some textbooks specifically favor and/or eschew the parallel citations of one or more specific publishers. As an example, the Federal Taxation texts by Pope, Anderson and Kramer use neither the official United States Reports nor the standard parallels published by West or Lawyers' Cooperative; instead, they cite to the parallels published in U.S. Tax Cases and American Federal Tax Reports. The politics behind this is quite obvious, given that the text primarily competes with a text published by West for designation as a course textbook.

For their part, the undergraduate law textbooks published by West make sparse if any mention of LEXIS-NEXIS citations, a policy doubtlessly molded by the fact that the LEXIS-NEXIS database competes with West's own Westlaw.

Academic discipline

Though many colleges and universities have designated pre-law programs, there is no standard pre-law curriculum in the same sense as there is a requisite undergraduate curriculum for other academic or professional disciplines. Accordingly, the various undergraduate law courses and programs administratively reside in diverse academic departments, depending upon the particular institution.

Academic regulations and practices dictate that law courses, undergraduate or otherwise, are almost always taught by attorneys (Assn. to Advance Collegiate Schools of Business, 2007, 44; Hasl-Kelchner, 2006, 50). Accordingly, there often is a reporting relationship to a department chair and/or dean who may or may not share the instructor's legal background, and who may or may not be attuned to some or all of the aforementioned information literacy issues that pertain to the law.

Moreover, librarians at undergraduate college and university libraries are not always attuned to all of the issues and esoterica relating to the legal discipline or profession, and/or have limited experience in using the specialized legal sources (Harwell, 1996).

Adjunct faculty instructors

Undergraduate law courses are very frequently taught by adjunct faculty or other instructors with status other than full-time (Morgan, 2003, 286). Aside from remuneration issues that often pertain when adjunct faculty members are called upon to
use uncompensated preparation time (Longmate & Cosco, 2002), various campus amenities and services, including access to computers and other technology, are often not adequately availed to adjunct faculty (Tillyer, 2005). This constrains the adjunct faculty member's ability to instruct the undergraduate law course as the databases for law grow increasingly internet-centered.

Adjunct faculty are held in low esteem by many in academia (Banachowski, 1996). This negatively impacts their ability to teach. Colleges and universities are not only academic systems, but also social systems. The social environment of the university plays a major role in the effectiveness of its professors (Wilson, 1942, 221). The negative attitudes towards adjunct faculty members, and the exclusion of adjunct faculty from the social interactions of their departments and their schools as a whole, has a disparate effect upon the effective teaching of undergraduate law courses (Ryesky, 2007).

**Information Literacy Requirements for Undergraduate Law Courses**

Information literacy has been defined as "the abilities to recognize when information is needed and to locate, evaluate, effectively use, and communicate information in its various formats" (SUNY Council of Library Directors, 1997). Many variables affect the requisite level of information literacy a student needs to attain for any given undergraduate law course.

As with any type of course in any subject, the level of the course would obviously impact the students' informational literacy needs (Mackey & Jacobson, 2004).

The type of law being taught is another factor that determines what information literacy the student would need to successfully complete the course. Specialized areas of the law often have specialized primary materials; for example, a law course geared to military contracts can hardly avoid discussing decisions made by the Armed Services Board of Contract Appeals, and a taxation law course would have frequent occasion to reference the Internal Revenue Service's administrative materials such as the *Cumulative Bulletin* and IRS private letter rulings. Such materials are not among the mainstream legal literature typically carried by a library that is not geared specifically to lawyers or law students.

The course textbook and similar materials likewise affect a course's information literacy criteria. A business law course textbook, for example, will frequently feature appendices with such statutes as the Uniform Commercial Code or the Revised Uniform Partnership Act.

The campus library is a major determinant of information literacy needs. The ink-on-paper West reporter books are accessed and navigated by different information literacy skills than the LEXIS-NEXIS or Westlaw database. And a library's specific set-up for accessing its on-line materials is similarly relevant to the information literacy requirements of the library user.
Though specific information literacy requirements vary from campus to campus and course to course, a typical undergraduate law course would demand most if not all of the following information literacy abilities from its students:

- Distinguishing a statute from a regulation from a judicial opinion.
- Understanding a citation of a statute or regulation or judicial opinion.
- Knowing which database is likely to contain a given statute, regulation or judicial opinion.
- Accessing the relevant database.
- Locating the given statute, regulation or judicial opinion within the database.

**The Author's Implementation of an Information Literacy Presentation and Assignment for an Undergraduate Law Course**

*Presentation Background*

The author has taught undergraduate business law courses at the same institution for over a decade. The author has incorporated a lecture session which expands upon the basic and meager textbook coverage, to bring business law students to a baseline level of information literacy in the introductory business law courses. The author has developed, and continues to use, a PowerPoint sequence as a lecture aid to explain the distinctions between statutes, regulations and judicial opinions. This PowerPoint sequence is also made available to the students via the campus library's electronic reserve facility.

The author's own limited empirical evidence gives some support to the subjective impression that the legal information literacy segment is beneficial to students taking undergraduate law courses. Of the 97 students total who completed the author's Business Law I courses taught in the Summers of 2005 and 2006, 19 enrolled in his Business Law II courses, for which the Business Law I course is a prerequisite. The mean final grade for the 287 students who completed the author's Business Law II courses given from Fall 2005 through Spring 2007 was 80.1%. The mean final grade for the 19 students among the 287 who had taken the author's Business Law I course was 82.2%.

In light of the relatively small sample size, the diversities among the teaching styles and grading criteria of the various instructors who teach Business Law courses at the institution, the textbook edition changes and consequent variations in course syllabi, and the diverse backgrounds of the individual students themselves, the foregoing statistic can hardly be viewed as definitive or conclusive; it is, however, consistent with the premise that a course segment dedicated to legal information literacy is beneficial to students of undergraduate law courses. The author's adjunct faculty status and posture does not immediately facilitate further statistical analyses of broader samples without approval by and coordination with diverse superior powers-that-be at his institution.
Implementing the Presentation at a New Institution

The author was engaged, on relatively short notice by a different institution, to also teach an undergraduate business law course for a single semester. The author was unfamiliar with this new institution, having physically visited the campus but once, twenty-five years earlier. Based upon experiences at the author's regular teaching institution, the author determined that the course textbook used by the new institution did not, standing on its own, provide an adequate grounding in legal information literacy. The author therefore decided to include a legal information literacy segment in the course at the new institution. Accordingly, before the semester began, the author ascertained that the institution made available to its students the LEXIS-NEXIS Academic Universe database. An e-mail message was sent to the chief librarian, explaining the situation and suggesting that the author and a librarian collaborate in a presentation to the students.

The legal information literacy segment was placed in the course syllabus, an appropriate room in the library was reserved, and an assistant librarian who had experience with the LEXIS-NEXIS database was designated to collaborate with the author. The plan was that the author would explain the various types of legal sources, and the collaborating librarian would then demonstrate how to use the various electronic resources provided by the school's library, including but not limited to the LEXIS-NEXIS database. The PowerPoint sequence developed by the author at his regular teaching institution was modified to suit the new institution, and placed on the electronic reserve page for the course. Students were advised of the PowerPoint sequence's availability and were strongly advised to access and review it prior to the lecture.

[As matters actually transpired, the initially-scheduled session was further delayed, and on the rescheduled date the librarian was exigently called to attend to a personal matter. After weighing the pros and cons of the particular situation, the author chose to cover both parts of the presentation himself rather than further postpone the already belated training session.]

The students were given approximately two weeks to complete an assignment distributed at the conclusion of the presentation. The assignment is further detailed in Appendix A to this article. Each assignment had different specific items for research, which made the inevitable collaboration among the students a beneficial part of the learning process instead of an academic integrity issue.

The first three items required the students to find particulars for citations of judicial opinions decided by, respectively, the United States Supreme Court, a Federal District or Circuit Court, and a state court. The fourth item required the students to find the citation for a judicial opinion of which they were given only the caption and the state in which it was decided (New York). The last three items were citations of, respectively, a Federal statute, a state statute (New York), and a Federal regulation, for which the students were to retrieve and attach copies of the text.
Discussion

Information literacy, once the exclusive province of librarians, is increasingly becoming an area of collaboration and shared responsibility between the library/information discipline and the other academic disciplines (Saunders, 2007; Mackey & Jacobson, 2005). The author's experience illustrates several practical issues involved in bringing information literacy to an undergraduate law course. These are presently discussed.

First and foremost, though many undergraduate textbooks do nominally address basic legal information literacy, the experience of this author, and of many other instructors of undergraduate law courses, has been that the students need something more than a mention in a textbook (Centner & Geyer, 1993, 15 - 16; Swenson, 1983). The essential content of the professional law school level courses must be gleaned, and distilled into a single class lesson for presentation to undergraduate students in a law course. The lecture material needs to be reinforced through some sort of "hands-on" practical exercise.

This takes special effort on the part of the Instructor, inasmuch as there seem to be few if any suitable "off the shelf" materials that adequately serve the purpose. Indeed, as mentioned previously, there are certain practical and political complications which would, for example, prevent a textbook published by West from promulgating materials to help students use the LEXIS-NEXIS database which the school's library avails to the students. The author has accordingly found it necessary to develop a PowerPoint presentation for such a purpose, after several unproductive inquiries to the various publishers and LEXIS-NEXIS regarding the availability of suitable "off the shelf" materials of such nature.

Each individual undergraduate institution's library has its unique attributes and quirks. Librarians can offer much in the way of showing students how to use their particular library's resources. Collaboration with librarians who know the databases and the particular institution's resources is often a very desirable and effective way for course instructors to impart information literacy to the students (Foster, 2007; Crouse & Kasbohm, 2004; Bloxham & Armitage, 2003).

There are many cultural barriers to librarian-professor collaboration (Foster, 2007). The great shift to electronic media has transformed the librarian's role from gatekeeper to facilitator. Many instructors of undergraduate law courses came of age at a time when the librarian was more of a gatekeeper, and have had negative experiences with one or more librarians who overly relished their gatekeeping function. As a result, these instructors do not inherently view librarians as potential allies or collaborators (Pierce, 1996). And some professors who have yet to adjust to the electronic media take a dim view of their students' use of electronic reference sources (Foster, 2007).

In this case, it was the professor who reached out to the librarians with a collaboration request. To their credit, the librarians willingly facilitated the professor. But professors of lesser experience may well be reluctant to cross organizational lines of authority, particularly where the professor is new to the institution, and/or the departmental
leadership's style is to zealously guard and assert their authority and power. In such instances, the department chair's awareness of the special information literacy needs relating to law courses, and his or her relationship with the library, can be a key factor in whether and to what extent an effective information literacy instructional component for an undergraduate law course can be arranged.

Also affecting the instructor's ability and willingness to take the initiative in approaching the librarians is the instructor's departmental support and backing. Faculty members who perceive that they will receive little support from their departments are less likely to take any initiative to maintain or improve the quality of the courses they teach. Worse still are the cases where the instructors have received the message, founded or otherwise, that their department chairs do not want them to "make waves" inremedying a deficient situation (Keith-Spiegel, Tabachnick, Whitley, & Washburn, 1998, 222 - 223).

Because, as mentioned previously, undergraduate law course instructors are particularly likely to be adjunct faculty members, departmental and school-wide measures to reinforce their support are particularly appropriate (Fagan-Wilen, Springer, Ambrosino, & White, 2006). There are some schools whose policies prevent adjunct faculty members from accessing the library's resources (Dalhousie University Libraries, 2003), which surely is counterproductive, especially when the instructor who teaches a course is accorded less database access privileges than the students he or she teaches. Resolving such dysfunctional policies can be a daunting task.

Though bringing an information literacy component to the undergraduate law course curriculum is often a very sore need, it is also an achievable goal. The instructor is obviously the primary point of action in any course-specific information literacy initiative, but the instructor's actions can be facilitated by the department chair, and by the campus librarians. Information literacy in an undergraduate law course not only enables better performance in the course itself, but also is a skill which is transferable to other situations, academic and otherwise (Crouse and Kasbohm, 2004, 47).

There is no single procedure appropriate to all institutions, and faculty members obviously must structure their courses to fit their specific institution's unique political, social and organizational environment. But regardless of the specifics, information literacy initiatives for undergraduate law courses are well worth the effort.

Librarians, department chairs, and instructors should be encouraged to take the initiative, and to cooperate with one another, to teach information literacy in undergraduate law classes. But neither the librarian, the department chair nor the undergraduate law instructor operate in a vacuum. There are a myriad of logistical, technological, economic, social and political issues that must be addressed and navigated to bring students in undergraduate law courses to the requisite information literacy levels, and all concerned parties must be attuned to these issues, and should be encouraged to participate not only in the information literacy initiatives themselves, but also in scholarly research concerning these issues.
Appendix: Legal Citation Exercise (Sample)

For Questions 1 through 3, a legal case citation is given. For each citation, indicate:

A. Court which decided the case.
B. Date decided or date judgment entered.
C. Name of Judge writing the opinion.
D. Attorneys for the parties (which attorney represented which party).
E. Parallel citation(s).

   A.
   B.
   C.
   D.
   E.

   A.
   B.
   C.
   D.
   E.

   A.
   B.
   C.
   D.
   E.

4. The following case has been reported, but you know only the case name and the fact that it was from some state court in New York. Give the case citations, the court(s) which decided it and the year it was decided.

   Kozlowski v. Seville Syndicate, Inc.

For questions 5 through 7, attach the complete text of the statute or regulation cited.

6. N.Y. Tax L. § 998.
7. 24 C.F.R. § 1715.50.
References


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Redesigning Mathematics Curriculum for Underprepared College Students

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**Abstract**

While developing strategies to meet the needs of underprepared students, public colleges and universities across the nation are being faced with directives, often stemming from public viewpoint, state legislatures, and/or state governing bodies of higher education systems, to modify existing university programs in an effort to decrease the cost of serving incoming or first-year students, particularly those programs addressing developmental education. Middle Tennessee State University began a redesign of all its developmental courses in an effort to satisfy recommendations and to meet strategic planning objectives of its state governing board. The purpose of this report is to examine the results of the pilot year of the redesign initiative for two prescribed mathematics general education courses MATH 1010K, Mathematics for General Studies, and MATH 1710K, College Algebra. The newly developed plan provides a more comprehensive approach that results in enhanced academic quality, flexible delivery options, greater uses of technology, and a reduction in the number of required courses.

**Keywords:** General Education Mathematics; Course Redesign; Developmental Education; Underprepared Students; Academic Deficiencies

In an effort to effectively address the needs of underprepared students admitted to higher education institutions across the nation, many programs and initiatives have been implemented. Over the years, the discipline addressing this concern has been termed “developmental education.” According to Boylan and Bonham (2007),

"developmental education refers to a broad range of courses and services organized and delivered in an effort to help retain students and ensure the successful completion of their postsecondary education goals. These courses and services are generally delivered according to the principles and theories of adult development and learning, hence the term “developmental” education. (p. 2)"

In the 1970s, higher education institutions began to open their doors to students regardless of the students’ levels of preparation (Perin, 2005). More recently, a report issued by the National Center for Education Statistics (2003) indicated that 28 percent of entering freshmen enrolled in at least one developmental education course in fall 2000.

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What has been the impetus or driving force behind this increase in the number of underprepared students seeking enrollment in higher education institutions? With the emergence of a global economy, the requirements of the labor force have changed considerably. The labor force continues to experience a decrease in the number of positions for unskilled workers and an increase in the need for workers who are skilled in the innovation and use of technology and who are able to think critically in the workplace. Postsecondary education has become a necessity for the populace as demands for higher-level skills continue to increase. It has become a national imperative to increase access to higher education and to address achievement gaps that exist between preparation levels and academic expectations of the institutions of higher learning (American Council on Education, 2004). According to the American Mathematical Association of Two-Year Colleges (AMATYC), as stated in *Crossroads in Mathematics* (1995),

Higher education is situated at the intersection of two major crossroads: A growing societal need exists for a well-educated citizenry and for a workforce adequately prepared in the areas of mathematics, science, engineering, and technology while, at the same time, increasing numbers of academically underprepared students are seeking entrance to postsecondary education. (p. 3)

Moreover, the student populations in postsecondary education have become more diversified, with increasing numbers of women, ethnic minorities, and non-traditional students entering the ranks (AMATYC, 1995). With a greater emphasis on access, with changing demographics in the nation’s population, and with the demand for higher-skilled workers in a global economy, colleges and universities across the nation are being compelled to meet the needs of all incoming students having varying levels of preparation (McCabe, 2000; Potts, Chatis, & Lyttle, 2005).

**Rationale for Redesign**

While developing strategies to meet the needs of underprepared students, public colleges and universities across the nation are being faced with directives, often stemming from public viewpoint, state legislatures, and/or state governing bodies of higher education systems, to modify existing university programs in an effort to decrease the cost of serving incoming or first-year students, particularly those programs addressing developmental education. The American Council on Education (2004) has concluded that the rising cost of higher education has served to stimulate and generate extensive discussion about accountability in higher education among these public forums. In an effort to appease the public’s concerns, elected officials have looked at ways to lower costs and to assure that appropriated funds are well-spent in preparing its citizens to be productive members in the higher-skilled workforce required of today’s graduates. Organizations and institutions of higher education are looking at ways to hasten students’ progression through freshman or general education courses, while still providing resources and support for a successful first year experience. It has been shown in numerous studies that a successful first year experience is instrumental in improving graduation and retention rates (Kelly, 2006). Across the nation, course redesigns are
Tennessee Board of Regents Redesign Initiative

The Tennessee Board of Regents (TBR) is a state governing body for 6 public four-year institutions, 13 public community colleges, and 27 technology centers. Among TBR institutions, a 2005 report indicated that 74 percent of entering freshmen at two-year institutions and 40 percent at four-year institutions required a developmental education course. For non-traditional students, 21 years of age or older, 50 percent required a developmental course. The annual cost for developmental education for the system is approximately $25 million, which is shared equally between state appropriations and student tuition (“Call to Participate,” n.d.). Because access remains a primary goal for higher education in Tennessee, TBR reports and planning documents outline goals, objectives, and strategies for making a significant difference in success rates for all students in postsecondary education. Additional goals include reducing the cost and time for completion of developmental education requirements.

A document entitled Defining Our Future was generated by the Tennessee Board of Regents (2001) as a report to the Tennessee General Assembly pursuant to Tennessee House Bill No. 2038/Senate Bill No. 2000. In this report, the TBR assessed the impact of current and future budget reductions for higher education institutions in the state of Tennessee and reports new self-efficiency measures of the TBR system. In Defining Our Future, six key recommendations were proposed to maintain access and quality in higher education while working within the constraints of reduced state funding and resources. These six recommendations included:

- Reduce the cost of remedial and developmental education,
- Reduce the cost of earning a degree,
- Reduce the time to a degree for transfer students,
- Reduce the cost of (or eliminate) off-campus locations that are not cost-effective,
- Eliminate under-performing academic programs, and
- Share and pool resources.

The first of the six recommendations called for the reduction of cost for remedial and developmental education throughout the system. Remedial courses are the lowest level of developmental education, addressing basic skill deficiencies in reading, writing, and mathematics. As an initial response to Defining Our Future, remedial education was eliminated at all four-year institutions in the TBR system. The community colleges were utilized to provide any remediation in language arts and mathematics because of the lower tuition costs. In the more recent TBR (2005) plan, Setting New Directions, one outlined objective is to increase speed and success of remedial/developmental work for students requiring such coursework to become college-ready. The strategy associated with this objective consists of establishing a remedial/developmental program based at the community colleges that is substantially technology driven. In conjunction with this strategic plan, the Tennessee Board of Regents has joined the Redesign Alliance of the
National Center for Academic Transformation (NCAT). A statewide effort is currently underway in which all TBR institutions are being asked to develop plans for redesigns of all remedial and developmental courses.

Middle Tennessee State University

Middle Tennessee State University (MTSU) is a public four-year institution located in the geographical center of the state. MTSU is accredited by the Commission on Colleges of the Southern Association of College and Schools (SACS) and awards associate’s, bachelor’s, master’s, specialist’s and doctoral degrees. The University is a member of the State University and Community College System of Tennessee that is governed by the Tennessee Board of Regents. With a total student population of approximately 23,000, MTSU boasts the largest undergraduate student population in the State and attracts more valedictorians and salutatorians from its Tennessee high schools than does any other postsecondary educational institution in the State. However, a significant portion of the MTSU student population, approximately 35 percent of first-time freshmen, requires additional preparation in one or more academic areas. Of all students enrolled in courses designed to address academic deficiencies, 31 percent are classified as non-traditional students. Approximately 45 percent of all students receiving a bachelor’s degree have successfully completed a course that addressed a deficiency in at least one academic area.

In an effort to satisfy TBR recommendations, to meet strategic planning objectives, and to transition students from high school to college-level work, MTSU began a redesign of all its developmental courses. Formerly, developmental education was a centralized program encompassing the areas of writing, reading, mathematics, and learning strategies. All courses and student services were housed in one department. In following the aforementioned TBR directives, the administration examined several models for the restructuring and redesign of developmental education. The model adopted is considered to be “partial mainstreaming,” in which all redesigned courses are housed in regular academic departments but are coordinated separately (Perin, 2005). For the area of mathematics, the redesign involved the elimination of the elementary algebra (DSPM 0800) and intermediate algebra (DSPM 0850) courses. These courses, like most developmental courses, were assigned institutional credit only and did not count toward a student’s degree requirements (Perin, 2005). In the redesign, selected general education mathematics courses at MTSU were modified and the University curriculum committee approved a new mathematics course, MATH 1000K, Essentials of Mathematics. Two mathematics courses that satisfy the general education requirement for a vast number of major degree programs at MTSU, Mathematics for General Studies (MATH 1010) and College Algebra (MATH 1710), were chosen to be used for the pilot year. In the redesign, MATH 1000K and special sections of MATH 1010 and MATH 1710 are used to meet the needs of underprepared students. No longer classified as developmental courses, they are now designated as prescribed courses. These redesigned mathematics courses provide prescriptive measures to address the needs for students whose ACT, SAT, or COMPASS (Computer-Adaptive Placement Assessment and Support System) scores would indicate an academic deficiency. COMPASS is a comprehensive testing system developed by ACT to help postsecondary institutions place students into
appropriate level courses. The prescribed courses incorporate the use of technology and lab components in an effort to reinforce instructional activities and to improve student learning outcomes. Similar to most developmental courses, the class enrollments are capped (McCusker, 1999). In the redesign, a decision was made to award credit for the prescribed courses. According to Crawford (1993) and Maxwell (1997), courses that are awarded college credit encourage students to devote more time and effort to the course and result in more positive attitudes about their enrollment at the university. These prescribed courses are denoted by the letter K in the rubric to differentiate between prescribed courses and regular sections of MATH 1010 and MATH 1710. Tables 1 and 2 delineate the structures of the former developmental mathematics courses and the newly designed prescribed mathematics courses.

Table 1. Former Developmental Mathematics Course Structure

<table>
<thead>
<tr>
<th>Former Courses</th>
<th>Credit Hours</th>
<th>Contact Hours</th>
<th>Successive Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSPM 0800</td>
<td>3</td>
<td>3</td>
<td>DSPM 0850</td>
</tr>
<tr>
<td>(Institutional Credit)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSPM 0850</td>
<td>3</td>
<td>3</td>
<td>MATH 1010 or MATH 1710</td>
</tr>
<tr>
<td>(Institutional Credit)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Redesigned Prescribed Mathematics Course Structure

<table>
<thead>
<tr>
<th>Redesigned Courses</th>
<th>Credit Hours</th>
<th>Contact Hours</th>
<th>Successive Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1000K</td>
<td>3</td>
<td>5</td>
<td>MATH 1010K or MATH 1710K</td>
</tr>
<tr>
<td>(Elective Credit)</td>
<td>(3 Classroom/2 Lab)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 1010K or MATH 710K</td>
<td>3</td>
<td>5</td>
<td>NA</td>
</tr>
<tr>
<td>(General Education Credit)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As illustrated in Tables 1 and 2, the redesigned course structure allows students to address academic deficiencies and to complete a general education mathematics course in a shorter time period. In the former developmental course structure, two or three semesters, depending on initial placement, were required for students to receive general education mathematics credit. The redesigned structure eliminates one full semester in meeting that requirement. The redesigned structure follows traditional practices for developmental mathematics courses by capping enrollment sizes to 25 for sections of MATH 1000K, MATH 1010K, and MATH 1710K. This generates a smaller student-to-instructor ratio and allows instructors to give more individual assistance to students enrolled in the prescribed mathematics courses. The element of smaller class size may be a contributing factor in promoting students’ successful completion of the courses.
Purpose

As redesign initiatives are developed and implemented, it is imperative that such measures are evaluated for effectiveness. The purpose of this report is to examine the results of the pilot year of the redesign initiative for the two prescribed general education mathematics courses, MATH 1010K and MATH 1710K. This report will assess the redesign by examining the following comparisons:

- Combined success rates of students in K sections of MATH 1010 and MATH 1710 to success rates of students in the former developmental mathematics course, intermediate algebra (DSPM 0850).
- Success rates of students in K sections to success rates of students in non-K sections of MATH 1010.
- Success rates of students in K sections to success rates of students in non-K sections of MATH 1710.
- Combined success rates of students in K sections of MATH 1010 and MATH 1710 to combined success rates of students in non-K sections of these courses.
- Success rates of students in non-K sections of MATH 1010 and MATH 1710 who have taken prior developmental mathematics courses at MTSU or other transferring institutions to success rates of students in K sections of these courses.

Planning and Implementation of K Courses

Over the course of several semesters, University personnel worked in the planning of the new course design. To develop a plan that addressed the needs of underprepared students, the administration worked with the following groups: DSP faculty and staff; college deans; select faculty from the colleges of Basic and Applied Sciences, Liberal Arts, and Education and Behavioral Sciences; the Instructional Technology Division; the Scheduling Center; and the Records Office. Implementation of the course redesign took place in fall 2006.

Mathematics Curriculum

Teams were formed to address curricular issues for each mathematics course in the redesign plan. One course (MATH 1000K, Essentials of Mathematics) was newly designed and two general education mathematics courses (MATH 1010, Mathematics for General Studies, and MATH 1710, College Algebra) were modified to meet the needs of students whose ACT, SAT or COMPASS scores indicated placement in a developmental or prescribed mathematics course. As stated in the purpose of the study, this report focuses on the newly modified general education mathematics courses MATH 1010K and MATH 1710K. However, MATH 1000K will play an increasingly significant role in the overall success of the redesign structure because students in this course feed into the two prescribed courses for which students receive general education mathematics credit. Therefore, course descriptions for all three courses in the redesign project are provided as follows:
1. MATH 1000K (Essentials of Mathematics)
   This newly designed course provides students with an introduction to learning mathematics. In addition to the acquisition of mathematics skills, the course incorporates strategies for learning mathematics, for problem solving, and for improving critical thinking and technology skills. Another objective of the course is to expand students’ abilities to learn independently. The major goal of the course is to provide a strong foundation for success in higher-level mathematics courses.

2. MATH 1010K (Mathematics for General Studies)
   This is a special section of an existing liberal arts mathematics course. As a liberal arts mathematics course, the course covers a variety of topics. Content features the topics of logic, set theory, financial management, numeration systems, trigonometry, probability, and statistics. In addition to these topics, the K sections cover linear and quadratic equations, factoring, graphs, functions, and systems of equations and inequalities.

3. MATH 1710K (College Algebra)
   This is a special section of the existing college algebra course. K sections of the course include additional algebra topics of factoring, rational exponents, and radical expressions. The supplementary topics provide a review and enhancement of foundational algebra skills.

Special attention was given to assure that the curricula of the K courses met all objectives and learning outcomes for the non-K sections of MATH 1010 and MATH 1710. Each of the prescribed courses offers students three hours of college credit. Credits for MATH 1000K are general elective credits and credits for MATH 1010K and MATH 1710K satisfy general education requirements for mathematics. Prescribed mathematics courses must be taken in the initial semester of a student’s enrollment at MTSU. Students are not allowed to drop these courses unless there are extenuating circumstances approved by the director.

Placement

Scores used for placement in mathematics are the ACT, SAT, or COMPASS mathematics sub-scores. COMPASS was chosen by the Tennessee Board of Regents as an assessment to determine a student's readiness for college-level courses. Students 21 years of age or older having invalid ACT/SAT scores or no scores are required to take the COMPASS. Invalid scores are from tests taken three or more years prior to admission. Table 3 shows how the students are placed based on ACT, SAT, or COMPASS scores.

Students who place into and successfully complete MATH 1000K are required to take either MATH 1010K or MATH 1710K in the consecutive semester, excluding summer sessions. Students are advised to enroll in MATH 1010K or MATH 1710K based on requirements with respect to their declared or intended majors.
Table 3. Prescribed Mathematics Course Placement

<table>
<thead>
<tr>
<th>Course Placement</th>
<th>Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACT</td>
</tr>
<tr>
<td>MATH 1000K</td>
<td>15-16</td>
</tr>
<tr>
<td>MATH 1010K or MATH 1710K</td>
<td>17-18</td>
</tr>
</tbody>
</table>

It should be noted that a student with an ACT mathematics sub-score of 14 or less, an SAT mathematics sub-score less than or equal to 340, or a COMPASS pre-algebra score of 1-29 places into DSPM 0700. This is a basic mathematics course that is taught by the community colleges in the TBR system. Previous to the redesign of developmental courses, MTSU partnered with Motlow State Community College in 2003 in an agreement whereby Motlow faculty members teach the DSPM 0700 course at MTSU facilities. Historically, very few students entering MTSU place in the remedial mathematics course.

Course Redesign Features

Credit/Contact Hours

Each prescribed mathematics course carries three credit hours. Students successfully completing MATH 1000K receive three hours of elective credit, while MATH 1010K and MATH 1710K fulfill three hours of general education mathematics requirements. Furthermore, each prescribed mathematics course requires five contact hours. These contact hours are comprised of classroom hours and/or a lab component. MATH 1000K requires three hours of classroom instruction per week coupled with two hours of structured lab activities. MATH 1010K and MATH 1710K courses require a full five hours of classroom instruction, meeting for five 55-minute class meetings per week, or the equivalent thereof for two- or four-day per week sections.

Faculty

For the academic year 2006-07, 18 full-time faculty members and 4 adjunct faculty members taught the redesigned mathematics courses. To determine faculty workload, the credit hours and contact hours were averaged. The average of credit hours and contact hours resulted in four workload hours for each K-section taught. The student-to-instructor ratio for each K section is 25 or less. Non-K sections of MATH 1010 and MATH 1710 each carry three credit hours and three contact hours, with an average class size of 34. Faculty members with no reassignments and/or who teach no graduate courses are
required to have a 12-hour workload per semester, or a total of a 24-hour workload for fall and spring semesters of each academic year. Due to a larger student population for prescribed courses in fall semesters as compared to spring semesters, faculty members teaching prescribed mathematics courses are usually assigned four K sections in the fall and two in the spring. Based on a faculty member’s teaching load, the balance of the required 30 hours per week on campus is dedicated to office hours. During this time students are afforded the opportunity to receive individual assistance from the instructor.

**Technology Component**

Each course requires a technology component offering online homework activities, practice exercises, test reviews, video instruction, an e-textbook, and a discussion board. Each course requires a graphing calculator. Instructors develop online activities to supplement and enhance in-class instruction. The online component allows students to receive immediate feedback. Students can email questions to the instructor immediately when working within the online component. The instructor can then view the actual problem about which the student is questioning. The instructor can also view a student’s entire assignment to see which problems are correct or incorrect. This enables instructors to identify and address specific needs individually or collectively in the classroom. The online activities also permit students to receive assistance when they are off-campus and at hours when the mathematics lab is closed. Assignments are posted and videos are available online for students to view when absent from a class meeting. The use of technology in the classroom and the online technology components allow instructors to introduce student exercises in the classroom that are more relevant to real-world applications.

**Grading**

The textbook committee for the mathematics area selected a textbook for each course. The curriculum committee defined the course content for all sections and generated a common course syllabus. The syllabus specifies learning objectives, an attendance policy, and required course materials. All sections require that the course final exam be weighted at 20 percent and that assisted work (homework, group projects, etc.) count no more than 10 percent of the course grade. Each course requires a student to have an overall grade of 70 percent or better to successfully complete the course. A student’s grade is based on quizzes, homework grades (online and hand-scored), unit tests, and a final exam. The final exam for both K sections and non-K sections of MATH 1710 is a common departmental exam.

**Academic Support**

All students taking prescribed courses have access to the following academic support services.
• **Academic Support Center** – Each student is assigned an academic advisor at the center who works with faculty members in addressing concerns about student progress or classroom attendance.

• **Academic Enrichment** – This office is responsible for testing and placement of incoming students into appropriate classes based on University and TBR guidelines.

• **Lab** – The Academic Enrichment Mathematics Lab is open 58 hours per week and is staffed by graduate assistants and student peer tutors to provide assistance with prescribed mathematics courses.

• **Student Athlete Enhancement Center** – This center provides extra assistance to student athletes enrolled in prescribed courses. The facility houses a study hall, computer lab, and tutoring rooms.

• **Disabled Student Services** – This office provides readers and tutors, special testing accommodations, and adaptive computer technologies for registered students.

### Results of Pilot Year

For fall 2006, 31 sections of MATH 1710K and 12 sections of MATH 1010K were offered. For spring 2007, 21 sections of MATH 1710K and 10 sections of MATH 1010K were offered. Since success in the prescribed mathematics courses requires at least 70 percent mastery, which equates to a grade of C or better, the grade distributions for both K and non-K sections were separated into two groups. The first group consisted of grades A to C, representing the group of students who successfully completed the course, and the second group consisted of grades D, F, I, or W, representing the group of students who were unsuccessful at completing the course. The same groupings were used to categorize the former intermediate algebra course (DSPM 0850) for the three prior academic years of 2003-2004, 2004-2005, and 2005-2006.

Five major hypotheses were tested in this study.

- **H₁** – There is no statistically significant difference in the success rates comparing the average of the previous three academic years of DSPM 0850 to the combined MATH 1010K/1710K for AY 2006-2007.

- **H₂** – There is no statistically significant difference in the success rates comparing students in K sections to students in non-K sections of MATH 1010.

- **H₃** – There is no statistically significant difference in the success rates comparing students in K sections to students in non-K sections of MATH 1710.

- **H₄** – There is no statistically significant difference in the combined success rates comparing K sections of MATH 1010 and MATH 1710 to combined success rates of non-K sections of MATH 1010 and MATH 1710.

- **H₅** – There is no statistically significant difference in the success rates comparing students in non-K sections of MATH 1010 and MATH 1710 who have taken prior developmental mathematics courses at MTSU or transferring institutions to students in K sections of these courses.

At a .05 significance level, a 2-Proportion \( z \) test was used to test each of the five hypotheses. In each test, the null hypothesis was that there was no statistically significant
difference. Table 4 summarizes the results and conclusions for the testing of all five hypotheses. Tables 5-7 provide the specific data relative to these findings.

Table 4. Results and Conclusions of Hypotheses Tests

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>p-value</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>0.136</td>
<td>Cannot reject the null hypothesis</td>
</tr>
<tr>
<td>H2</td>
<td>0.225</td>
<td>Cannot reject the null hypothesis</td>
</tr>
<tr>
<td>H3</td>
<td>0.947</td>
<td>Cannot reject the null hypothesis</td>
</tr>
<tr>
<td>H4</td>
<td>0.602</td>
<td>Cannot reject the null hypothesis</td>
</tr>
<tr>
<td>H5</td>
<td>0.000</td>
<td>Reject the null hypothesis</td>
</tr>
</tbody>
</table>

Table 5 illustrates the comparison of the success rate of students in newly designed K courses to the success rate of students in the former intermediate algebra course (DSPM 0850). The first hypothesis investigated the difference in the success rates comparing the average of the previous three academic years of DSPM 0850 to the combined MATH 1010K/1710K for AY 2006-2007. From Table 5, the success rate for the 3-year average of DSPM 0850 was 65.1% and the success rate for combined MATH 1010K/1710K was 67.1%. There was not a statistically significant difference in the pass rates of the two groups. These findings were particularly encouraging because they indicated that the students placed in the prescribed sections of these higher-level courses were able to master essentially two semesters of material in one at the same rate that they had mastered the former developmental mathematics course. Furthermore, as opposed to receiving only institutional credit for successful completion, these students had satisfied their general education mathematics requirement. Previously, students enrolled in DSPM 0850 for one semester were required to take an additional semester of MATH 1010 or MATH 1710.

Table 6 shows the success rate of students in newly designed K sections to the success rate of students in non-K sections of MATH 1010, Mathematics for General Studies, and MATH 1710, College Algebra, for AY 2006-2007.

Both K sections and non-K sections of MATH 1010 and MATH 1710 satisfy the general education mathematics requirement. Therefore, it is vital that these courses are examined individually and collectively to assess the effectiveness of the redesign initiatives. The second hypothesis investigated the difference between the success rate of students in K sections and the success rate of students in non-K sections of MATH 1010.

From Table 6, the success rate for students enrolled in MATH 1010K sections was 70.5% for AY 2006-2007. Information from the same table shows that the success rate for students enrolled in MATH 1010 (Non-K) sections was 67.4%. A statistical test indicates that there is no significant difference in the pass rates for students in the special sections for prescribed students and in the regular sections of this course. The third hypothesis considered the difference in success rates between students in K sections and non-K
Table 5. Student Success Rates: Former DSPM 0850 Course vs. K Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>GRADES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSPM 0850</td>
<td>A to C</td>
</tr>
<tr>
<td>AY 2003-2004</td>
<td>67.8%</td>
</tr>
<tr>
<td>AY 2004-2005</td>
<td>63.3%</td>
</tr>
<tr>
<td>AY 2005-2006</td>
<td>64.2%</td>
</tr>
<tr>
<td>3-year average</td>
<td>65.1%</td>
</tr>
<tr>
<td>MATH 1010K</td>
<td>D, W, I, or F</td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>70.5%</td>
</tr>
<tr>
<td>MATH 1710K</td>
<td></td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>65.8%</td>
</tr>
<tr>
<td>MATH 1010K/1710K</td>
<td>67.1%</td>
</tr>
</tbody>
</table>

Table 6. Student Success Rates: K sections vs. Non-K sections

<table>
<thead>
<tr>
<th>COURSE</th>
<th>GRADES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1010K</td>
<td>A to C</td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>70.5%</td>
</tr>
<tr>
<td>MATH 1010 (Non-K)</td>
<td></td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>67.4%</td>
</tr>
<tr>
<td>MATH 1710K</td>
<td>D, W, I, or F</td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>65.8%</td>
</tr>
<tr>
<td>MATH 1710 (Non-K)</td>
<td></td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>65.9%</td>
</tr>
<tr>
<td>MATH 1010K/1710K</td>
<td></td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>67.1%</td>
</tr>
<tr>
<td>MATH 1010/1710 (Non-K)</td>
<td></td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>66.4%</td>
</tr>
</tbody>
</table>

sections of MATH 1710. Using the same test and data from Table 6, results were examined. The success rate for students in MATH 1710K sections was 65.8% and the success rate for students in non-K sections of MATH 1710 was 65.9%. Again, there was no statistically significant difference in the pass rates. As stated in the fourth hypothesis, combined success rates of students in K sections of both MATH 1010 and MATH 1710 and combined success rates of students in non-K sections of these courses were investigated to determine if there was a significant difference between the two. The combined success rate for students in K sections of MATH 1010 and MATH 1710 was 67.1% and the combined success rate for students in non-K sections of these courses was
66.4%. Once more there was no statistically significant difference in the pass rates. These findings were very promising because students in the prescribed courses, K sections, were, in general, academically weaker based on placement criteria. It should be noted that non-K sections usually have larger enrollments. The average class size is 34 with some sections having as many as 40 students. K sections are typically limited to 25 students. Additionally, online lab components are not required in non-K sections. Students in K sections may receive extra benefit from online components that are essentially available around the clock. K sections also feature five contact hours providing extended classroom time and increased instructor-student contact during the semester.

Some students in non-K sections of MATH 1010 or MATH 1710 have taken DSPM 0850 or a comparable course at another institution or have successfully completed DSPM 0850 at MTSU prior to fall 2006 when the redesign courses were piloted. Table 7 presents the success rate of students in non-K sections who have taken a prior developmental mathematics course(s) to the success rate of students in K sections of MATH 1010 and MATH 1710 for AY 2006-2007.

Table 7. Student Success Rates: DSP Background in Non-K sections vs. K sections

<table>
<thead>
<tr>
<th>COURSE</th>
<th>GRADES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1010 (Non-K) with DSP</td>
<td>A to C</td>
</tr>
<tr>
<td>AY 2006-2007</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>D, W, I, or F</td>
</tr>
<tr>
<td></td>
<td>43%</td>
</tr>
<tr>
<td>MATH 1010K</td>
<td>AY 2006-2007</td>
</tr>
<tr>
<td></td>
<td>29.5%</td>
</tr>
<tr>
<td>MATH 1710 (Non-K) with DSP</td>
<td>AY 2006-2007</td>
</tr>
<tr>
<td></td>
<td>43.4%</td>
</tr>
<tr>
<td>MATH 1710K</td>
<td>AY 2006-2007</td>
</tr>
<tr>
<td></td>
<td>34.2%</td>
</tr>
</tbody>
</table>

The fifth and final hypothesis was investigated to determine if data showed a statistically significant difference between the success rate of students in non-K sections who have taken developmental mathematics courses to the success rate of students in K sections of MATH 1010 or MATH 1710. From Table 7, the success rate for students in MATH 1010 (Non-K) with DSP background was 57% and the success rate for students in MATH 1010K was 70.5%. Also from Table 7, the success rate for students in MATH 1710 (Non-K) with DSP background was 57% and the success rate for students in MATH 1710K was 70.5%. Success rates for students in K sections of MATH 1010 and MATH 1710 were found to be significantly higher than the success rates of students with prior DSP backgrounds in non-K sections of these courses. This result shows that the new course design generated better student learning outcomes than the traditional two-semester sequence that included DSPM 0850 followed by the general education mathematics course. This new design was more effective in helping students with academic deficiencies to be successful in fulfilling their general education mathematics.
requirement. Factors that may have contributed to lower student outcomes for students with prior DSP backgrounds in non-K sections include:

- The ability of students in non-K sections to drop the course at will.
- Varying levels of preparation for transfer students with a DSP background.
- Only one year of data is available at this time with which to compare results.

Conclusions

The pilot year of the course redesign has provided promising results. Data for AY 2006-2007 is encouraging for measured student learning outcomes in the newly designed courses. The data may also provide rationale for placement of transfer students with a background in DSP mathematics into K sections of MATH 1010 or MATH 1710. If additional years of the course redesign prove as successful, then there will be a continual decline in the numbers of MTSU students with backgrounds in DSP who are in the non-K sections of these courses. Further study with additional years of the redesign may indicate its impact on retention and graduation rates.

The course redesign at MTSU has addressed several of the recommendations in both the Defining Our Future and the Setting New Directions documents generated by the Tennessee Board of Regents. Students are obviously progressing at a faster pace through prescribed measures to address academic deficiencies and through general education requirements. Because students have the opportunity to overcome an academic deficiency and to satisfy general education mathematics requirements within one semester, the cost to the student, to the University, and to the State is reduced. Additional studies could provide specific information relative to cost effectiveness.

The newly developed plan provided a more comprehensive approach that resulted in enhanced academic quality, flexible delivery options, greater uses of technology, and a reduction in the number of required courses. These results have strong implications for not only higher education institutions in the Tennessee Board of Regents system, but to others across the nation faced with meeting the needs of underprepared students in the area of mathematics.

References


Benchmarking Quality in Online Teaching and Learning: A Rubric for Course Construction and Evaluation

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Debbie R. Faulk
Distinguished Teaching Associate Professor, Auburn University Montgomery, Alabama

Abstract

Online courses have many components and dimensions. Both the form (structure) and the content (expression) are situated in an overall environment. The sum of these elements results in student outcomes and learning. In order to facilitate construction and evaluate the quality of an online course, a four-part rubric was designed to reflect:

- Structure (Context, Organization, and Environment)
- Content (Presentation of Information)
- Processes (Relationships and Interactions)
- Outcomes (Mastery of Content and Course Evaluation)

This rubric was designed to provide quantitative and qualitative standardized evaluation for faculty self-evaluation, peer evaluation, and administrator evaluation. The rubric was piloted at two universities and shown to be highly effective in eliciting effective and usable feedback for course instructors and program directors. It was concluded that a uniform rubric that can be applied to any discipline could facilitate evaluation of all online courses within a program to a set standard that can then be used for course enhancement and improvement with structured comprehensive evaluation from instructors, peers, or program directors. It was found that a well-designed course (structure), with relevant and credible information (content), as well as mechanisms for interaction and collaboration (processes), could result in enhanced student learning (outcomes).

Keywords: Distance Education, Online Learning, Instructional Design

Web-based, or online, teaching is grounded in cyberspace and allows students the flexibility to learn anytime and anyplace, and at a time when they choose to focus on the course content. It gives the student and the teacher time for reflection and a

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means for all to participate and interact. This opportunity eliminates many of the barriers related to traditional classroom learning. A majority of the research related to the effectiveness of online learning demonstrates that there are few differences in outcomes. In fact, it is purported that Web-based learning is “just as good” as traditional, face-to-face instruction (Allen & Seaman, 2006, Armstrong, Gessner, & Cooper, 2000; Herther, 1997).

There are two issues that must be addressed in online courses. The first is the quality of the teaching tool and the second is the quality of the learning that takes place. The quality of learning from online courses is well established (Allen & Seaman, 2006; Buckley, 2003; DeBourgh, 2003) and the benchmarks for quality of the online course are available in a myriad of sources (Billings, 2000; Jairath & Stair, 2004; Phipps & Merisotis, 2000; Richard, Mercer, & Bray, 2005). The rubric instrument developed by the authors and described in this article can be used as an evaluation tool to determine if your course maximizes technology in course construction to enhance quality pedagogy. This rubric is different than those previously developed (Keinath & Blicker, 2003; Wolf & Stevens, 2007) as it can be used to assess both course construction and learning outcomes.

**Growth of Online Learning**

The growth of online learning has been rapid and phenomenal. From the early correspondence model of distance education provided by the U.S. postal system in the 1800s to today’s campus portal access using multimedia, Internet, and computer media communications, distance learning has evolved into a technology-driven, student-demanded market. An estimated 3.2 million students are using online learning technology, substantially increased from the previous year of 2.3 million students; and universities are reporting that online learning is critical to long-term strategies (Allen & Seaman, 2006). Palloff and Pratt (2001) reported that almost 90% of institutions with enrollments of 10,000 or more are offering some form of Web-based education. Hosie and Schibeci (2005) noted that education and global learning is its own “mega trend.” Predictions abound regarding the virtual university of the world without any national boundaries (Moe & Blodget, 2000; Taylor, 2001). There should be no doubt that online learning is vital to all disciplines involved in education in the 21st century.

**Online Learning in the Health Sciences**

A call for the health sciences to use Internet technology as a tool for delivering education has been issued for some time now (Cobb & Baird, 1999; Franck & Langenkamp, 2000; Thurmond, Wambach, Connors, & Frey, 2002). Although one would be hard pressed today to find a medical or nursing program that is not using some type of Web-based education, educators and students have not readily embraced this educational tool (Frase-Blunt, 2000; Monke, 2005/2006; Reynard, 2007; Schmitt, Titler, Herr, & Ardery, 2004; Sit, Chung, Chow, & Wong, 2004).
Research related to online learning is varied and includes comparing learning in the traditional classroom with Web-based education, comparing group discourse in the “wall-less” classroom with cyberspace learning, and evaluating online course development and effectiveness. There is little research related to evaluation tools of course construction to support faculty in effectively conveying content to students online. In a study conducted by Arbaugh in 2000, students involved in Web-based courses actually conversed more than those in a traditional classroom.

Online delivery is a relatively new addition to the educational methods used in schools for health sciences. Although much effort has been directed toward development of methodology, less emphasis has been placed on the evaluation of the strategies used to deliver the content. As programs move to increase the course offerings using online delivery, it is imperative that faculty develop a systematic method of evaluating the online strategies used in course delivery.

**Issues in Online Learning**

There are many issues swirling around the use of online teaching and learning. Some of these include faculty readiness and willingness, administrative and infrastructure support, accessibility, student success, costs, efficiency and effectiveness issues. Each of these issues is multifaceted and involves the development and implementation of specific policies and procedures. Provision of a framework that will allow for consistent and coherent technology, software, and course design decisions is crucial. For example, can course content be delivered online (no face to face contact with teacher) or through a hybrid/enhanced medium (one that is partially face to face and partially online). In the hybrid course, the online portion must meet “best practices” for online learning, as well as, “best practices” for classroom learning. Hybrid courses can be very enticing to a student who may not have the time or finances to be on site several days a week during a semester but can come at known intervals. The hybrid method may also be appealing to teachers who are new to online teaching and may not yet “trust” this medium as pedagogically capable.

Faculty support and effectiveness of online delivery were two of the major concerns that led to the development of a rubric that can standardize evaluation of an online course. This rubric can be used for course enhancement and improvement with structured comprehensive evaluation by the instructor (self-evaluation), colleagues (peer evaluation), or deans and directors (program evaluation or external evaluation). In this way, faculty can use the rubric to assist with both design and evaluation of a course. Part of advancing faculty development as online course designers and facilitators is to have a conceptualization framework, which allows for a way to visualize the various elements that exist in online teaching. The rubric is a framework that can provide this means of conceptualization.
Rubrics

A rubric is a model or template that can be used as an evaluation instrument for assessment of a body of work aligned with set standards. According to Wolf & Stevens (2007) “rubrics improve teaching, contribute to sound assessment, and are an important source of information for program improvement” (p. 3). A good rubric can facilitate a definition of excellence, communicate exemplary practices, communicate goals or expectations, and allow for accurate and consistent evaluation of a body of work by documenting the procedures used in making judgments. A rubric organizes and clarifies criteria along a continuum in such a way that two individuals who apply the rubric to a body of work will generally arrive at a similar score. The greater the agreement between the scores assigned by two independent assessors is a measure of the reliability and interrater reliability of the rubric as an assessment tool. The rubric developed by the researchers (Figure 1) was designed to be a general rubric instrument using terms that were not discipline-specific. In other words, a conscious effort was made to choose terms that were generic to all online courses.

Development and Testing of the Rubric

An extensive review of the literature indicated that limited strategies exist for evaluation of online course construction and delivery. Keinath and Blicker (2003) developed a rubric to assess readiness of online courses prior to course delivery. This was used to expedite feedback to instructors and ensure consistency of site review, meaning that instructors could use the rubric to review basic elements prior to the start of an online course. The rubric was then further tested to identify the “student-readiness” of a site. Whereas course readiness is evaluated prior to the start date of the course, the rubric described herein expands beyond readiness, to include the concepts of content, interactions and processes, as well as summative evaluation.

The process of development of our rubric was creative, innovative and straightforward. The three developers agreed to the general goal of the creation of a rubric to evaluate overall online course delivery. The first step in the process was an evaluation of the literature, discussions with other faculty and students, and reflection on courses taught via the Internet. The developers then discussed all the information and agreed on a general structure for a rubric with four dimensions: (a) Structure, which encompasses context, organization, and environment; (b) Content, which encompasses the presentation of information; (c) Processes, which encompasses human aspects, relationships, interactions, and quality; and (d) Outcomes, which encompasses student learning and mastery of content, as well as course evaluation. Each of the major dimensions has several components, which can be measured both quantitatively and qualitatively. It was hypothesized that a well-designed course (structure), with relevant and credible information (content), as well as mechanisms for interaction and collaboration (processes), can result in enhanced student learning (outcomes).
In examining each of these four overarching dimensions, various elements and sub-elements emerged. These elements and sub-elements were discussed over a series of teleconferences. As this was a creative process with the developers having a thorough understanding of the literature and a combined over 10 years of online teaching, it was decided that the best way to synthesize our knowledge and experience was to jointly develop the first dimension of “Structure”. The initial development of the first dimension involved each developer writing definitions for the elements and compiling the findings. Teleconferences were held to refine and consolidate the definitions for the first dimension. At this point in the development process, the developers individually tested the first dimension, which resulted in further refinements in each of the elements, as well as the definitions related to the presence or absence of certain attributes. The first testing facilitated the development process for the remaining three dimensions. As in any creative process, the development of an instrument is not always linear, and many times during the development of the rubric, elements and sub-elements of other dimensions would emerge from the work. In developing each part of the rubric, data from one dimension would also inform the development of elements in other dimensions. Refinements to the rubric continued over a period of 6 months.

The rubric was pilot tested at two universities with a convenience sample. Six faculty members from different departments who had more than two years of experience in online teaching were recruited to complete the rubrics and offer their comments. Recruitment occurred by the developers asking three faculty members from different departments at each university site to use the rubric to evaluate any online course they were teaching. No formal training on use of the rubric was provided. Data gathered from the pilot was primarily qualitative in nature, with extensive comments written on the rubrics provided by the developers for the pilot testing process. Data were analyzed using a constant comparative method to allow for emergent themes. The developers were all experienced in online course delivery and thus credible and reliable instruments to analyze and interpret the qualitative pilot data. All three developers independently evaluated the comments from the pilot data related to both the scoring process and the open-ended comments sections. The developers then compared the results. Overall the comments reflected that the faculty involved in the pilot test thought that the rubric proved to be highly effective in eliciting valuable and usable feedback for course instructors and program directors related to both course construction and course evaluation. Specific suggestions were made for development of various elements and sub-elements within the rubric. Refinements were then accomplished by the developers based on the evaluation of pilot data.

The next step was to establish content validity. Using the revised rubric, three experts in online teaching, who had greater than five years of experience and were not at the two pilot university sites, were recruited to evaluate the rubric for content validity. These experts were given the rubric, selected literature, and were asked to use their experiential knowledge to ascertain if the rubric was 1) overall a

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good measure for course evaluation and 2) if the dimensions, elements and sub-elements were inclusive and valid. Content validity was thus established via this review by three external experts.

At the same time, the developers engaged in a process to determine reliability of the rubric. The three developers tested the rubric on two courses they could access online, for a total of six courses, then retested one to two weeks later, for test-retest reliability. Each developer reported on the overall reliability for both the scoring and qualitative remarks. The instrument was found to be reliable. Minimal adjustments to the rubric were accomplished after the content validity and reliability assessments.

**Evaluation Rubric**

The four-part rubric is divided into the four major dimensions: Structure, Content, Processes, and Outcomes. After each section, there is a page allocated to comments; and at the end of the rubric, there is a page allocated to comments about the overall course. The rubric is presented in Figure 1.

The most straightforward areas of the rubric with evaluation criteria that is evident and visible to most educators are the first and third sections related to course structure and processes. A more advanced evaluation is needed of the second and last areas, content and outcomes, as these areas require a knowledge of the content, a certain amount of expertise in the subject matter, and the ability to discern what is most important and relevant in learning the material. To effectively evaluate the content presented and student outcomes, the reviewer would need to understand the discipline, the subject, and be knowledgeable of the current state of the science/art and landmarks within the field. To a certain extent this is also true of evaluating the processes and interactions between the faculty and the students, although if faculty and students are engaged in dialogue most educators can determine if learning and effective communications are present. An example of a completed content section of the rubric is presented in Table 1.

A program administrator can use the rubric to review several courses, or the same course over time, with standardized criteria. An example of an instrument grid to facilitate a review of the same course during different semesters is presented in Table 2.

**Conclusions**

The Online Course Construction and Evaluation Rubric serves multiple purposes: it is a mechanism for self-evaluation, peer evaluation, and administrator, program director, and/or dean evaluation; it can be used to design or facilitate an online and hybrid/enhanced course; and it can be used to enhance the creation of a collaborative online learning environment. It was concluded that a uniform rubric that can be applied to any discipline could facilitate evaluation of all online and
hybrid/enhanced courses to a set standard that can then be used by faculty and program directors to promote faculty development and subsequent student learning, as well as course evaluation, course design, and the creation of an online collaborative learning environment. However, as with any tool, there are limitations. Technology and software mediums are rapidly expanding educational boundaries. The use and effectiveness of technology such as live video, Captivate© and WIMBA© are difficult to evaluate. Partnering with technology specialists could provide a fluid framework for the development of essential elements related to technological advances. Additionally, any tool is really only as good as its user. The more skilled and knowledgeable the person using this tool, the more data and better judgments can be elicited. For example, only a person with knowledge and expertise on a particular subject can determine if the content presented is truly an accurate, in-depth, appropriate treatment of the subject matter and if the assignments, interactions, and evaluations are substantive and conducive to learning.

Advances in technology and demands from consumers are driving changes in educational methodologies. Online learning will continue to expand and be recognized as a valuable educational tool. Institutions and educators from all disciplines must keep pace with these changes by providing a learning environment that will meet the demands of consumers and stakeholders. Development of effective methods for evaluation of online courses is an important step in meeting the challenges of online teaching and learning.

References


**Figure 1:**

*Online Course Construction and Evaluation Rubric ©*

INSTRUCTIONS:

There are four major dimensions to the online course evaluation rubric:

- **Structure**
  - Context/Organization/Environment
- **Content**
  - Presentation of Information
- **Processes**
  - Human Aspects/Relationships/Interactions/Quality
- **Outcomes**
  - Mastery of Content and Course Evaluation

There are both quantitative and qualitative measures. Each element within the overall dimension can be scored with 0 to 3 points, with a numerical total summed for each dimension. Qualitative evaluation can be accomplished via comments on each element, each dimension, or the overall course design.

### Structure – Context/Organization/Environment

<table>
<thead>
<tr>
<th>Element</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Design Framework</td>
<td>No framework for guiding student throughout the course, navigation to course area is not apparent</td>
<td>Limited framework is apparent—the home page includes beginnings of navigation to course area</td>
<td>The framework for course delivery is apparent and includes sufficient structure for navigation throughout the course</td>
<td>Framework for delivery is not apparent</td>
<td>0</td>
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</tr>
<tr>
<td>Course Design - Segments of Content, i.e., Learning Units or Learning Modules</td>
<td>No modules or course segments exist for content, only assignments are listed</td>
<td>Several course modules exist, but progression between course modules/segmentation is not apparent</td>
<td>Course modules are well-organized and progression is less apparent and not based on learning objectives</td>
<td>Course modules are well-organized and have varying length depending on the learning objectives, with apparent progression to facilitate learning</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Appearance of Material</td>
<td>Poor color choice, layout is too difficult to read, icons are “buried” and not uniform in style and appearance</td>
<td>Color scheme is acceptable</td>
<td>Color scheme is acceptable</td>
<td>Appearance is appealing/ easy to read</td>
<td>0</td>
<td></td>
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</table>


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<table>
<thead>
<tr>
<th>Element</th>
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<th>3</th>
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<td>Scrolling Within the Course or</td>
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<td>Variety of Assessments</td>
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<tbody>
<tr>
<td>Use of Online Gradebook</td>
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<td>Appearance of Learner Support</td>
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<td>Feedback - Feedback Methods</td>
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<td>Context for Learning Community</td>
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<td>where students interact with</td>
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<td>one another and the</td>
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<td>instructor - Discussions -</td>
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<tr>
<td>Chat Rooms - Virtual Classes</td>
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</tbody>
</table>
### Structure — Context/Organization/Environment

Comments related to structure and the development of a collaborative learning environment:

<table>
<thead>
<tr>
<th>Element</th>
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### Content — Presentation of Information

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<th>Score</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Content of Learning Modules or Content of Learning Segments</td>
<td>No learning modules/units in the course</td>
<td>Limited consistency from module to module</td>
<td>Modular course are designed and presented in a uniform and consistent manner</td>
<td>Resources are current (≤ 5 years) and information is relevant to learning objectives</td>
<td>Unlimited consistency from module to module</td>
<td>Minimal consistency from module to module</td>
</tr>
<tr>
<td>Discussions - Synchronous - Asynchronous</td>
<td>No new information is presented or ideas previously stated are not reinforced</td>
<td>Faculty adds limited new information during asynchronous and/or synchronous discussions or interactions with students</td>
<td>Faculty adds to the body of knowledge and information presented during synchronous and/or asynchronous discussions or interactions with students</td>
<td>Faculty adds to the body of knowledge and information presented during synchronous and/or asynchronous discussions or interactions with students</td>
<td>Faculty adds to the body of knowledge and information presented during synchronous and/or asynchronous discussions or interactions with students</td>
<td>Faculty adds to the body of knowledge and information presented during synchronous and/or asynchronous discussions or interactions with students</td>
</tr>
<tr>
<td>Links</td>
<td>No links to Web-based information are included in the learning modules or to the course</td>
<td>An appropriate number of relevant links are added to the learning experience</td>
<td>An appropriate number of relevant links are added to the learning experience</td>
<td>An appropriate number of relevant links are added to the learning experience</td>
<td>An appropriate number of relevant links are added to the learning experience</td>
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<tr>
<td><strong>Course and Unit Learning Objectives</strong></td>
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<tr>
<td>Learning objectives and goals are not identified</td>
<td>Learning objectives and goals are identified but are not always measurable, behavioral, or appropriate in number for the content and time of the course</td>
<td>Measurable, behavioral learning objectives are identified for the course, and at least one learning objective engages the learner in activities of analysis and synthesis</td>
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<tr>
<td>Assignments, activities, readings, and/or projects within the course are not related to learning objectives</td>
<td>Assignments, activities, readings, and/or projects within the course are related to the learning objectives</td>
<td>Assignments, activities, readings, and/or projects within the course have a discussion of the purpose of the assignment related to the learning objectives</td>
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<tr>
<td><strong>Writing Style</strong> (Syntax, Grammar, Punctuation &amp; Flow)</td>
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<tr>
<td>Course content grammatical and sentence structural errors</td>
<td>Basic principles of grammar and sentence structure are present</td>
<td>Information within the course follows principles of grammar and sentence structure, and few typing errors are present</td>
<td></td>
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<tr>
<td>Numerous typing errors are present</td>
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<tr>
<td><strong>Multimedia</strong> (Photos, Images, Video, Audio, etc.) and Metaphors Within the Context of the Content and Learning Experience</td>
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<tr>
<td>Multimedia and metaphors not used in the presentation of course content</td>
<td>Minimal use of multimedia and metaphors in the presentation of course content</td>
<td>Multimedia used throughout the course, with limited use of metaphors OR a progressive metaphor was developed throughout the course, with a limited use of multimedia to illustrate course content</td>
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<tr>
<td>Knowledge</td>
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<tr>
<td>Limited expertise evident in presentation of content</td>
<td>Inconsistent expertise in content area evident in presentation of knowledge</td>
<td>Expertise in content area evident in presentation of knowledge throughout the course</td>
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<tr>
<td><strong>Content — Presentation of Information</strong></td>
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<tr>
<td>Comments related to content and the development of a collaborative learning environment:</td>
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### Processes – Human Aspects, Relationships, Interactions, and Quality

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<th>Score</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Interpersonal Interactions Faculty-Student</td>
<td>No evidence of interactions</td>
<td>Minimal interactions are evident in either student-to-student or student-to-faculty exchanges</td>
<td>Both student-to-student and student-to-faculty interactions are present, but exchange of information and generation of ideas are superficial</td>
<td>Dynamic and thoughtful interactions are evident in student-to-student and student-to-faculty interactions, adding to a quality learning experience</td>
<td></td>
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</tr>
<tr>
<td>Access to Faculty (Office Hours)</td>
<td>No office hours are posted</td>
<td>Office hours are posted</td>
<td>Office hours are posted for both phone, face-to-face, and virtual times</td>
<td>Times vary to accommodate a variety of work schedules</td>
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### Assessment of Learning Styles

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<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>No assessment of learning styles is available</td>
<td>Some information is provided about skills and personality required for online learning</td>
<td>Specific information is provided about skills and personality required for successful course completion</td>
<td>Specific information about skills and personality required for completion of the course is provided</td>
<td>Self-assessment tools are available for the learner, and feedback information regarding potential access with online courses is provided</td>
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### Instructor and Learner Responsibilities & Guidelines for Online Learning

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<th>Comments</th>
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<tbody>
<tr>
<td>No guidelines are established for the learner and instructor responsibilities</td>
<td>Only guidelines related to learner and instructor responsibilities are evident</td>
<td>Some guidelines exist that establish learner and instructor responsibilities, online communication, and changes to support the online learner, but guidelines are changing</td>
<td>Clear guidelines are established for the learner that include learner and instructor responsibilities, online communication, and techniques to support the online learner</td>
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Comments related to processes and the development of a collaborative learning environment:
### Outcomes: Mastery of Content and Course Evaluation

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<tr>
<td><strong>Student Work Reflects Mastery of Course Objectives</strong></td>
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<tr>
<td>Student work reflects basic achievement of course objectives</td>
<td>0</td>
</tr>
<tr>
<td>Student work reflects average understanding and achievement of course objectives</td>
<td>1</td>
</tr>
<tr>
<td>Student work demonstrates above average understanding and achievement of course objectives</td>
<td>2</td>
</tr>
<tr>
<td>Student work demonstrates mastery of course content and course objectives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Student Work Reflects Analysis, Synthesis, and Evaluation</strong></td>
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<tr>
<td>Student work reflects basic knowledge, identification, or understanding</td>
<td>0</td>
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<tr>
<td>Student work reflects knowledge and some work reflects analysis of information</td>
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<tr>
<td>Student work demonstrates complexity with the majority of assignments below analysis, synthesis, or evaluation</td>
<td>2</td>
</tr>
<tr>
<td>Student work demonstrates progression of complexity from knowledge to the level of analysis, synthesis, or evaluation</td>
<td>3</td>
</tr>
<tr>
<td><strong>Online Course Evaluations</strong></td>
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<tr>
<td>No student evaluation is requested for the course</td>
<td>0</td>
</tr>
<tr>
<td>Student online evaluation report is requested at the end of the course</td>
<td>1</td>
</tr>
<tr>
<td>Student online evaluation report is requested at the midpoint and end of the course</td>
<td>2</td>
</tr>
<tr>
<td>Student online evaluation report is requested at the midpoint, end of the course, and after major assignments are turned in</td>
<td>3</td>
</tr>
<tr>
<td><strong>Learner satisfaction with the online learning experience</strong></td>
<td></td>
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<tr>
<td>No rating scale for learner satisfaction</td>
<td>0</td>
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<tr>
<td>Majority of the learners rate the learning experience as not very satisfying</td>
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<tr>
<td>Majority of the learners rate the learning experience as satisfying</td>
<td>2</td>
</tr>
<tr>
<td>Majority of the learners rate the learning experience as highly satisfying</td>
<td>3</td>
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### Outcomes

Comments related to outcomes and the development of a collaborative learning environment:

### Overall Course

Comments related to overall course:
Table 1. Example of Content Evaluation

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<th>Score</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Content in Modules or Content of Learning Segments</td>
<td>No learning modules in course</td>
<td>Module content inconsistent with overall course objectives</td>
<td>Limited consistency from module to module</td>
<td>Modules are designed and presented in a uniform and consistent manner</td>
<td>1</td>
<td>Although modules were used in the course, there was no consistency within the modules. For example, two of the modules had learning objectives that were not current (resources used &gt;5 years). Does not have an introduction or a summary conclusion</td>
</tr>
<tr>
<td>Discussions - Synchronous</td>
<td>No new information presented or ideas previously covered are not rendered in either synchronous or asynchronous discussions/interactions</td>
<td>Minimal links are included in the course, where some links are irrelevant</td>
<td>An appropriate number of relevant links added to the learning experience</td>
<td>An appropriate number of relevant links added to the learning experience</td>
<td>3</td>
<td>Excellent course faculty added relevant comments to the asynchronous discussions. For example, at the beginning of each discussion, the faculty posed a number of questions to the discussion. At the end of the discussion time, faculty summarized student discussions</td>
</tr>
<tr>
<td>Links</td>
<td>No links to Web-based information are included in the course</td>
<td>Minimal links are included in the course</td>
<td>An appropriate number of relevant links added to the learning experience</td>
<td>An appropriate number of relevant links added to the learning experience</td>
<td>3</td>
<td>Numerous appropriate and credible links</td>
</tr>
<tr>
<td>Course and Unit Learning Objectives</td>
<td>Learning objectives/goals are not identified</td>
<td>Learning objectives/goals are not always measurable, behavioral, or appropriate in number for the content and time of the course</td>
<td>Measurable, behavioral learning objectives/goals or unit objectives are identified in the introduction to the course, and at least one learning objective engages the learner in activities of analysis and synthesis</td>
<td>Measurable, behavioral learning objectives/goals or unit objectives are identified in the introduction to the course, and at least one learning objective engages the learner in activities of analysis and synthesis</td>
<td>1</td>
<td>The course faculty used learning outcomes but a number of the outcomes were not measurable. For example, the students will understand the policy process.</td>
</tr>
<tr>
<td>Assignments, Activities, and/or Projects</td>
<td>Assignments, activities, readings, and/or projects within the course are not related to learning objectives</td>
<td>Assignments, activities, readings, and/or projects within the course are not related to learning objectives</td>
<td>Assignments, activities, readings, and/or projects within the course are not related to learning objectives</td>
<td>Assignments, activities, readings, and/or projects within the course are not related to learning objectives</td>
<td>1</td>
<td>None of the assignments/projects presented a purpose</td>
</tr>
<tr>
<td>Writing Style (Syntax, Grammar, Punctuation &amp; Flow)</td>
<td>Course contains grammatical and sentence structural errors</td>
<td>Basic principles of grammar and sentence structure are present</td>
<td>Information within the course follows principles of grammar and sentence structure, and has few typing errors</td>
<td>Information within the course follows principles of grammar and sentence structure, and is without typing errors</td>
<td>3</td>
<td>No problems</td>
</tr>
<tr>
<td>Element</td>
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<td>3</td>
<td>Score</td>
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</table>
| **Multimedia (Photos, Images, Video, Audio, etc.)** and Metaphors Within the Context of the Content and Learning Experience | Multimedia and metaphor not used in the presentation of course content | Minimal use of multimedia and metaphor in the presentation of course content | Multimedia used throughout the course with limited use of image OR A progressive metaphor was developed throughout the course, with a limited use of multimedia to illustrate course content | Multimedia used throughout the course along with a developed metaphor that reflects a progression of course content | 3 | Excellent job of images, audio and video technology. The faculty uses a metaphor of a journey related to the course. Example, "research journey." This is obvious throughout the course in the use of a green car to remind students of the "journey."

| Knowledge | Limited expertise evident in presentation of content | Inconsistent expertise in content area evident in presentation of knowledge | Expertise in content area evident in presentation of knowledge throughout the course | Expertise in content area evident in presentation of knowledge and in interactions with students | 3 | It is obvious that the faculty has extensive expertise in the subject area. For example, the faculty presents a number of their research papers in the course. Also interesting is a short bio of the faculty on the front page of the syllabus.

### Content - Presentation of Information

**Comments related to content and the development of a collaborative learning environment:**

Although there were a few areas of concern (see scores above) the evaluator believes the faculty of record did develop a collaborative learning environment through the use of multimedia, links, and asynchronous discussions.
Table 2. Program Administrator Tracking of Online Course Evaluations

<table>
<thead>
<tr>
<th>Class Number:</th>
<th>Semester &amp; Year</th>
<th>Semester &amp; Year</th>
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<tbody>
<tr>
<td></td>
<td>Scores</td>
<td>Comments</td>
</tr>
<tr>
<td></td>
<td>Scores</td>
<td>Comments</td>
</tr>
</tbody>
</table>

**STRUCTURE**
- Course Design Framework
- Course Design – Segmenting of Content
- Appearance of Material
- Scrolling within the Course or within Documents
- Assignment Navigation
- Accessibility
- Variety of Assessments
- Use of Online Grade book
- Learning Resources
- Appearance of Learner Support/Feedback
- Context for Learning Community
- Use of Technology/Course Tools
- Use of Instructional Media
  - Overall Scores/Comments

**CONTENT**
- Content of Learning Modules
- Discussions
- Links
- Course and Unit Learning Objectives
- Course Assignments, Readings, Activities, and/or Projects
- Writing Style
- Multimedia and Metaphors
- Knowledge
  - Overall Scores/Comments

**PROCESSES**
- Interpersonal Interactions
- Access to Faculty
- Assessment of Learning Styles
- Instructor and Learner Responsibilities & Guidelines
  - Overall Scores/Comments

**OUTCOMES**
- Student Work Reflects Mastery of Course Objectives
- Student Work Reflects Analysis, Synthesis and Evaluation
- Online Course Evaluations
- Learner Satisfaction with the Online Learning Experience
  - Overall Scores/Comments
Grade Expectations:
Mapping Stakeholder Views of Online Plagiarism Detection

Diana Ashe¹ and Michelle Manning
University of North Carolina Wilmington, Wilmington, North Carolina, 28403

Abstract

Based upon a pilot study of the leading online plagiarism detection service, this article examines the views of faculty and students as the main stakeholders in the controversy over online plagiarism detection. Rather than give advice outside of a specific institutional context, this study offers an understanding of the reasoning that informs the diverging points of view, explaining both support of and resistance to online plagiarism detection among each group. The article makes recommendations of best practices for those who choose to incorporate plagiarism detection services into course management. More importantly, the article closes with recommendations for addressing academic integrity on a campus-wide scale—a practice that could alleviate the pressures that encourage many campuses to adopt online plagiarism detection.

Keywords: Plagiarism, academic integrity, online source detection.

A May 20, 2007, Associated Press story trumpets one of the greatest challenges to higher education: “Dishonesty persists at U.S. universities” (Pope). Studies continue to demonstrate that academic dishonesty is on the rise, with technology-assisted forms of plagiarism fueling a significant portion of the apparent surge. A 2002 study of 4,500 high school students conducted by the Rutgers Management Education System revealed that 75% had cheated, and, more disturbing, 50% of them saw nothing wrong with it (Shaw, 2005). Rutgers’ Don McCabe, perhaps the nation’s leading authority on trends in academic dishonesty, also surveyed 45,000 college students, finding that “37% admitted to what’s called ‘cut and paste’ plagiarism” (Shaw, 2005).

Our own informal surveys found that 89% of our students had cheated in high school, but less than 7% of the same respondents admitted to cheating in college. Perhaps some of the discrepancy results from the increasing maturity of the students as they progress through college, or the success of various strategies to prevent cheating, or the expectation of a more punitive outcome if the students are caught. The problems with self-reporting as a measurement tool cast a shadow of skepticism over any results; however, if this percentage held true, then 871 of our university’s 13,000 students have knowingly engaged in acts of academic dishonesty. Using McCabe’s figures, the number would be closer to 4,800 students cheating.

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Compounding the problem of researching how often students engage in cheating and what works to deter cheating is the unreliability of data about incidences of academic dishonesty on campuses. Because of the inconsistency in the handling of and reporting of incidences, reliable data across campuses simply do not exist. When individual faculty members are left to decide how and whether to handle cases of academic dishonesty, we have no way of knowing on a national or even campus-wide basis how often cheating occurs, how serious the cases are, or how it is handled. We can be relatively certain, however, from anecdotal evidence and from surveys like our own and McCabe’s, that cheating happens more often than it is reported or discovered. Consequently, cheaters rarely suffer significant academic repercussions unless the cheating was particularly egregious, blatant, or habitual. When students know that repercussions are unlikely or minimal, our institutions lose an important deterrent to academic dishonesty.

A sense of themselves as consumers may drive some students to purchase a paper or to use the time and effort required to write a paper as an excuse for plagiarizing; this same consumer mentality causes many students to view cheating as a devaluation of their educational experience. Stories abound of students who, when confronted with evidence of a downloaded essay, claim that it is, indeed, “their own” work, since they paid for it. In the face of this, many students themselves openly acknowledge that cheating is a serious problem, and stories circulate of students approaching administrators to ask for help stemming the tide of academic dishonesty, out of fear that the cheaters are making their degrees “worth” less.

Traditional strategies such as unique assignments, multiple draft requirements, conferences, citation workshops and instruction, and a firm stance—in writing on the syllabus and in classroom discussions on academic dishonesty—do seem to have an impact. It also stands to reason that the more involved students—and their instructors—are in the learning and assessment process, the more specific and engaging assignments are, the more academic integrity we could expect. We would like to think that all instructors in all areas of campus strive for these pedagogical ideals, but the diverse nature of our areas of study, pedagogical backgrounds, course content, class sizes and comfort levels in the classroom keeps continuous assessment and process-based learning from being practiced consistently across the university.

Even in the best of scenarios, a process orientation in both teaching and assessment can be and often is circumvented by recycled essays, web resources, and online paper mills, where students can have an essay produced on any topic and with any combination of sources and even choose the level of grade they would like to receive. According to “Buying the Wrong Words,” a Google search for “buy term paper” would produce 150 million hits and students could purchase a paper for as little as $29.95 per page (Lyons, 2006). Many clever students acquire these papers and then tweak them to meet instructors’ parameters, so we may be fooling ourselves when we think that unique assignments are enough to fight this type of plagiarism.

In fact, such cheating via paper mill sites prompted neurobiology professor John Barrie to create the leading online plagiarism detection service in the mid-90s. Barrie is not shy
about making his intentions clear: “If we can crush those sites like a bug, great” (cited in Lyons, 2006). For many campuses, online plagiarism detection has seemed to provide a consistent approach to the problem of academic dishonesty, one that does not rely on individual instructors to uphold the university’s ideals.

Everything about online plagiarism detection services, though, is controversial. Even deciding what to call the services involves choosing sides in an ideological battle. Should we call them “online source detection services,” sounding as neutral as possible and emphasizing the pedagogical potential in the technology’s ability to graphically illustrate for students their use of sources? Or should we call them “online plagiarism services,” leaning toward the side of the critics and emphasizing the crime-seeking potential of the technology? For the purposes of our study, we kept faithfully used “online source detection” so that we could encourage adoption of the technology and remain as neutral as possible. For this essay, however, we have switched to “online plagiarism detection,” in part because that term seems to be prevailing in the literature.

While online plagiarism detection services promise accuracy, reliability and ease of use, the technology itself may not have reached maturity. Making online plagiarism detection far less appealing are two of the conclusions of James Purdy’s (2005) study, “Calling off the Hounds: Technology and the Visibility of Plagiarism.” After comparing eight online plagiarism detection services and one free search engine for their ability to detect plagiarism in a set of documents, none of the services “performed appreciably better than Google” (p. 282). In addition, Purdy discusses rumors, albeit unsubstantiated, of possible connections between some online plagiarism detection services and online paper mills (p. 284). Others have also analyzed and compared the various services, including information technologists at the University of California at Santa Barbara, who compared seven services in nineteen different categories as a part of their development of their own detection system.

Wary of these problems, we set out to examine the possibilities the technology might hold for our own campus. While our own administration enthusiastically supports the exploration of new strategies for encouraging academic honesty, including honor code-supported courses and uses of emerging technologies, the university relies on examples that are over 40 years old—older than the vast majority of our students and even many of our faculty—to illustrate its policy on plagiarism. According to our associate provost, “the ease and prevalence of duplication and sharing of material may obscure ethical issues, and it is important for us, as educators, to address this phenomenon and the boundaries of academic honesty” (personal communication, 2006). Through the university’s commitment to exploring the current state of academic honesty, we were awarded an Instructional Technology grant to pilot an online plagiarism detection service in our English Department to test its effectiveness in deterring student plagiarism and to gauge student and faculty reaction to such a service during the 2005-2006 academic year.

While we had good reasons for setting out on this mission and a good structure for the study itself—piloting the system in the English department on a voluntary basis for one year, surveying students and instructors at the start and close of each semester—the
information we gleaned from the project strayed far from the kinds of conclusions we sought. What happened next was a surprise to us and offers insight into the complex and multifaceted conundrum presented by academic dishonesty in general and online plagiarism detection services specifically. In considering what recommendations to make for our university, we had to account for the divergent views between and among the chief stakeholders involved: students and faculty. Without buy-in from both groups, the technology would only exacerbate the sensitivities surrounding the problem. Taking all of these perspectives into account, we did not recommend that our department or our university subscribe to the service on a larger scale. Instead, we recommend efforts to make changes in the larger university culture to strengthen the value given to academic honesty. For those who do plan to incorporate online plagiarism detection services into their larger-scale efforts to enhance academic honesty, we recommend practices that will minimize the not-insignificant drawbacks to the technology and, we hope, maximize its potential for encouraging and helping students to understand academic integrity.

Launching Our Study

We contracted with the leading online plagiarism detection system to provide services for 1,000 students per semester, which we thought would be sufficient for an entirely voluntary pilot project. Before we began, we also decided that while we would advertise the service, including the grade book and peer review package, through flyers, email, and announcements in department meetings, we would not actively recruit or push the program, since one component we set out to measure was faculty buy-in. We offered faculty members both group and one-on-one training sessions. All of these efforts in the fall semester brought a handful of instructors on board; the spring semester saw only 14 out of 60 faculty members subscribe for their classes (involving approximately 350 students). Usage even within the classes of these faculty members was sporadic.

This response was quite a disappointment and left us with too small a sample to draw sweeping conclusions about the effectiveness of online plagiarism detection in our classes. It did, however, offer us plenty of information about practical and ethical reasons that our university’s technology dollars might be better spent elsewhere, barring some significant changes. While online plagiarism detection has been shown to decrease cut-and-paste plagiarism when used consistently over several semesters (Martin, 2005), we found that its success is dependent upon the larger academic atmosphere in which it is used.

David F. Martin (2005) of Murray State University recently conducted a five-semester test of an online plagiarism detection service with graduate classes, comparing each semester’s work to the previous semesters. His data showed significant decrease from the first, leading him to posit, “Students who plagiarize less are more likely to develop the skills needed to complete their writing and research skills” and are “more likely to become involved in the learning process and may have a greater propensity to develop morally compared with students who avoid becoming involved in the process” (p. 152). It is important to note that Martin’s results speak to an ideal context for addressing academic honesty, one in which “the learning process” is privileged and the focus is on
developing both skills and moral strengths. Because online plagiarism detection systems can be used in less conscientious ways, we cannot be sure that these results would recur with wide-scale adoption of the technology.

From our own experience, we can attest that our plagiarism rate dropped from three to four papers per semester containing significant plagiarism (that we were able to detect through traditional means) to zero. However, the ethical issues that arise—issues of privacy, ownership, and profit from student work—complicate even further the question of whether or not the solution is worse than the disease. Perhaps the best outcome from this pilot program is the serious conversations it has prompted among students, faculty, and administrators. Some interest has even been expressed in the creation of a site-based detection program on our campus, a move that would bring online plagiarism detection out of the for-profit sphere, eliminate many concerns about privacy, and align plagiarism prevention more closely with our students’ other campus and classroom experiences. The resources necessary to bring site-based plagiarism detection into being seem prohibitive at the moment, though, so we are left to struggle with our concerns about plagiarism detection from an external vendor.

Results: A Stakeholder Analysis

In the course of our project, we collected responses from participating students and faculty reflecting on their experiences with the service. We also held innumerable conversations with colleagues and students over the course of the past year, including a particularly rousing class debate with a senior seminar in Intellectual Property. The unifying theme of all of this feedback has been that there is no unity at all: no two people seem to see the service and its impact in exactly the same way—including the two of us.

Patterns have clearly emerged, though, so that it is fruitful to consider what each of these groups of stakeholders brings to the discussion. Students tend to share the same sets of reservations and endorsements of the service, and faculty seem to dwell on certain issues in favor or against it. A problem as complex as academic dishonesty will never have a single, instant solution, but we owe it to our institutions—and our students—to investigate thoroughly any legitimate tool for solving even a portion of the problem.

Student Opposition to Online Plagiarism Detection

Last spring, we met with the then-president of our university’s student body. Students were talking, he said, about the use of online plagiarism detection in their classes, and he wanted to understand the situation before deciding whether the Student Senate should take a stand regarding the service. His concerns were similar to those we had heard from our own students and the students we surveyed in our project: he was bothered by the notion that online plagiarism detection sends the message that instructors do not trust students, and he resented a private company profiting from his work. We assured him that the technology has not affected the trust between instructors and students: even when plagiarism meant copying from the World Book Encyclopedia, instructors were checking up on students. In this respect, online plagiarism detection just means that faculty can
catch up with students in the ease of carrying out this age-old dance. We also agreed, that, yes, a private company profiting from his work is less than ideal, but in light of the millions of texts in its database, the online source detection service is making less than a penny from his writing. Textbook companies, the campus food services monopoly, and any number of other corporate interests have profited far more richly from his education.

At the same time, we acknowledge that our student body president is absolutely right: privately run online plagiarism detection services do indeed profit from students in a way that is new and different from computer companies, paper companies, and other suppliers of campus goods and services: instead of a portion of tuition dollars or fees, these companies are profiting from a portion of each student’s education itself, the very work he or she produces on his way to earning a degree. As teachers, we have not had to grapple with this particular ethical dilemma in the past, and we are unprepared to handle it. Further explorations are necessary before we can understand the implications of for-profit corporations offering student work as, some might argue, their sole product. In addition, some students and faculty are genuinely bothered by the shift in the student-teacher dynamic that can be brought about by plagiarism detection services. While we maintain that plagiarism detection services foreground aspects of the student-teacher dynamic that have always been in operation, it is clear that many students and faculty members believe that plagiarism detection services change the relationship between teacher and student in fundamental ways.

Students who resist online plagiarism detection bring up three main issues: profit, trust, and anxiety. Like our student body president, they do not want to offer up their work for someone else’s profit, and we certainly understand their reluctance. Some students also perceive an alteration in the student-teacher relationship when online plagiarism detection is used; they feel as though they are under surveillance, as though they are, to quote several of them, “guilty until proven innocent.” A third, very common concern centers around student fears that they will inadvertently use sources incorrectly and “get busted” by the system. Most online source detection services do offer a solution to the worries of anxious students: by using the drafting feature, instructors can opt to allow students to upload an assignment and see and correct their own source matches before the assignment is officially handed in. This third student concern, though, is especially of interest to us as teachers, because it reveals just how uncertain students are about the parameters and methods of correct citation. If students felt confident in their abilities to cite sources correctly and scrupulously, this concern would disappear. Whatever our views on online plagiarism detection services, students’ fear of being caught inadvertently plagiarizing is a reminder to all of us that we have work to do in clarifying consistent standards and methods for our students in this area.

**Student Support for Online Plagiarism Detection**

When students speak in favor of online plagiarism detection services, their comments tend to fall into two areas. The first type of praise that online source detection garners from students comes from those who see it as comeuppance for their cheating classmates. Students weary of seeing cut-and-paste plagiarizers come away with higher grades...
embrace online source detection and feel vindicated by the highly visible results of the service. Tufts University student Veronica Coopersmith is noted in her campus newspaper as being “glad that people who cheated on lab reports in the past now have to work to earn the grades” (Sawicki, 2005). Other students, perhaps in the same camp as the students made anxious by the service, are glad that the service forces them to be more cautious—and more original. The Penn State University Daily Collegian quotes student Kaitlyn Infield as saying, “I don’t plagiarize, but it makes me nervous. Then again, it’ll be nice to know for my own reference that sentences are similar. It probably saves [the professor] a lot of work, too” (Marino, 2005).

Faculty Support for Online Plagiarism

Infield raises a crucial point about online plagiarism detection services: faculty frustration and workloads may account for much of the substantial increase in the services’ subscriber base in recent years (Marino, 2005). When, as in our case, helping a colleague to investigate a single case of suspected cut-and-paste plagiarism without the assistance of an online detection service requires more than eight hours of searching, printing, highlighting, and collating to document the plagiarism irrefutably, dealing with plagiarism requires much, much more of faculty members than simply looking the other way. According to the Who's Who Among American High School Students' 26th Annual Survey of High Achievers, “More than nine out of ten students (94%) were not caught when they had cheated and 5% were caught but not punished“ (“High,” 2005). It would be tempting to point fingers at instructors for failing to crack down on plagiarism if we did not acknowledge the working conditions that exacerbate this problem: teaching a 4/4 course load can equate to roughly 4,000 pages of student writing per semester if an instructor dictates a four-page minimum. The notion that an individual instructor can consistently monitor and identify potential plagiarism over 4,000 pages in a single academic year is optimistic at best.

For this reason and several others, many faculty members embrace online plagiarism detection wholeheartedly. Since the leading online plagiarism detection service currently boasts over 3,000 university clients, the service must be making many instructors happy (G. Anderson, personal communication, January 16, 2007). Those instructors tend to like the service because it offers consistency, time savings, and classroom tools. While a typical teaching load and class size make checking every paper for cut-and-paste plagiarism impossible by traditional methods, checking only those papers that seem suspicious is ethically problematic in that it treats students inconsistently. Online plagiarism detection allows each assignment and each student to receive exactly the same level of checking. The resulting time savings for overburdened faculty is incalculable. In seconds, an instructor can generate reports on an entire class. Because handling academic dishonesty is such a labor-intensive process for faculty, this technology can shave precious hours off of at least the initial stages of the process. In addition, the visual representation of highlighted and linked text offers instructors “a tool for educating students on illegal academic practices” and an opportunity to explain unintentional plagiarism (Marino, 2005). Our own instructors also appreciated the convenience of the
platform for online grading, the helpful comments function, and the rubrics provided by the service.

**Faculty Opposition to Online Source Detection**

However, for every instructor who appreciates online plagiarism detection services, there seems to be another who strongly opposes them. Faculty who voice concerns about the use of online plagiarism detection services bring up a litany of complaints, ranging from the pedagogical and ethical to the technological. Some of these complaints can be answered or remedied easily, but others point to larger issues that complicate the decision to adopt the technology. First and foremost, instructors voice concerns about the legality of the service. They wonder whether for-profit educational use is actually covered under fair use statutes, as the commercial services claim. In addition, they question whether it is legal to, in the words of one instructor who strongly opposed the use of the service, “require our students to surrender ownership of even a fingerprinted version of their work. These concerns are echoed by those who see it as a violation of students’ privacy rights to upload their writing to a database that will access it for an unknowable amount of time. In addition, students in our Intellectual Property class felt that online plagiarism detection services obscure the distinction between plagiarism and piracy, creating another legal gray area.

The leading online plagiarism detection service responds to these concerns in its materials, reassuring users that its lawyers have carefully vetted the process and found its practices to be covered by existing copyright and fair use legislation (“Copyright,” 2006). However, this extension of fair use principles was never considered when the legislation was passed, so we can certainly foresee the potential for legal battles over the service. It is an area in which laws have not caught up with technology, making it perfectly legal for the time being, but subject to possible restriction in the future. Because of this discrepancy, using online plagiarism detection involves taking a tacit stand on the limits of fair use principles, a stand that may be contradicted by future legislation.

Ethical concerns voiced by faculty sometimes echo the legal concerns. Even if it isn’t specifically illegal to require students to surrender a fingerprinted version of their work, it is in some eyes clearly unethical (Purdy, 2005, p. 279). Instructors may also agree with students that the service erodes the “environments of mutual trust and commitment to inquiry” that ideally exist in our classrooms, as one faculty member asserted. Related pedagogical issues include the inarguable notion that instructors are better able to judge and teach academic integrity than a computer, so according to this view, the service detracts from our mission as teachers. Representing this view is the Penn State faculty member who argues that these services “take away a certain level of the personal relationship between teacher and student” (Marino, 2005).

Some problems faculty members have with online plagiarism detection are less complex and more easily remedied. One of our instructors ran into a major technological glitch when the service we used, turnitin.com was unable to save her settings correctly because it could not support the older Macintosh version of Explorer she was using. The glitch
inspired her to create the online plagiarism detection service “Wall of Shame” on one of our hallway walls, on which she displayed the many frantic emails from her students as they struggled to complete their assignment. As we were working to create faculty buy-in of the technology for our study, the online plagiarism detection service “Wall of Shame” did not exactly win us any volunteers. For the technology to work consistently and reliably, all users must have access to updated technological resources, so online plagiarism detection costs more than the subscription price. For many institutions, the necessary technological upgrades to give all users appropriate access may be an unpleasant surprise.

Frustration with online plagiarism detection services is also expressed by faculty who questioned the service’s reliability. Because the service does not detect outright fabrication and often lists matches like “United States of America,” these instructors felt that it was less useful. We found that with practice, we could sift through the extraneous matches and find the substantive problems very quickly, so this was a minor irritation. The failure to detect outright fabrication hardly seems to condemn the technology; on the contrary, the engineers at the online source detection service could find far more lucrative venues than this for a technology that could detect lies in written documents.

Other rejections of the service came from faculty members who felt that they did not need the service at all or did not want to see what the service might show them. Some faculty members contend that they do not have a problem with plagiarism in their courses. After reviewing the literature on academic dishonesty on college campuses and reading our own survey responses, we can only hope that these instructors are very lucky exceptions to what seems to be the prevailing trend in higher education. In addition, some faculty members resist the “bad guy” role that would be thrust upon them if they had clear evidence of academic dishonesty. Not wanting to upset the precarious communities they have built in their classrooms, they prefer to presume integrity on all sides.

In addition to the resistance to online plagiarism detection services we found among our own faculty, it is significant that professional groups, such as the Intellectual Property Caucus of the Conference on College Composition and Communication (CCCC-IP), have issued statements that delineate the ways in which online plagiarism detection services “compromise academic integrity” (2006). The “CCCC-IP Caucus Recommendations Regarding Academic Integrity and the Use of Plagiarism Detection Services” points to five issues in particular: the imbalance of power under which students are coerced to submit their work, the presumption of guilt and its effect upon students, the potential for fostering a “hostile environment” when students do not want to participate, the dependence upon computers over human instructors for making these critical distinctions, and the violation of student privacy (2006). Statements like this one are essential to our profession’s task of determining the value and place of this new technology.

**Recommendations for Using Online Plagiarism Detection Systems**

Among those who do choose to use online plagiarism detection systems in their classes, we found that the instructors who are happiest with the service are those who take
advantage of its full capacity as a course management system. Systems that offer rubrics, peer review capability, and grade book functions can become an integral part of a course, so that students see online plagiarism detection as just one of the site’s many course functions, as opposed to a process conspicuously separate from the rest of their class activities. Ideally, academic integrity concerns can be just that for all of us: a single issue integrated into our job’s many concerns, as opposed to a process conspicuously separate from the rest of our teaching activities. If and when academic integrity is woven into the fabric of our universities’ cultures, online source detection services will have to peddle their wares based on their classroom management modules, because we won’t need their help so desperately in fighting plagiarism and teaching students how to manage sources. Until then, though, we don’t have a better answer. In the meantime, using online detection services thoughtfully and responsibly can alleviate some of their inherent problems and protect the atmosphere of mutual respect and inquiry in our classrooms.

To this end, based upon the results of our study, we offer the following recommendations for those who are considering the adoption of an online plagiarism detection program or who are addressing academic dishonesty on a campus-wide level. To address academic dishonesty on a campus-wide level:

1. Make sure that you have top-level support. Endorsement by senior-level faculty as well as administrators is crucial.
2. At the same time, invite student leaders or representatives to be a part of the policy-making process. Buy-in by faculty is important, but without some student buy-in, any new policies will be difficult to implement at the classroom level.
3. Encourage all instructors to include written policies concerning academic honesty on their syllabi and announce them on the first day of class.
4. Encourage your department and institution to develop a unit-wide policy, creating clear guidelines and procedures that incorporate numerous tools, such as your institution’s definitions of academic dishonesty, a public policy outlining the consequences of academic dishonesty, straightforward procedures for faculty to follow in cases of academic dishonesty, an honor code, and possibly online plagiarism detection.
5. For campus-wide approaches to academic dishonesty to be effective, and to gauge whether they are effective, they must be applied consistently.

If your institution is integrating online plagiarism detection technologies into your institution’s approach to academic integrity, we also make the following recommendations:

1. Provide frequent training sessions for faculty, but be prepared for one-on-one guidance and support well in advance. For spring semester participation, for example, offer plenty of training throughout the fall semester.
2. All computer operating systems must be current in order to run online plagiarism detection programs effectively.
3. Advise all instructors to provide written policies in their syllabi as well as announce the use of an online detection service on the first day of class.

4. Choose the drafting feature to use the process as a teaching tool. Doing so will assuage student fears and offer them visual demonstrations of the concepts involved.

5. As a part of a policy on academic integrity, encourage instructors to discuss the implications of an online detection service and to create policies for students who object to the use of online detection.

6. Make sure that instructors are comfortable using all of the functions of the program so that it maximizes its potential in the classroom.

The best tool for attacking academic dishonesty is and will always be an atmosphere of accountability and responsibility. Fostering such a climate requires a campus-wide effort and the adoption of a student code of ethics. For this reason and some of those mentioned above, we stop short of recommending the use of online plagiarism detection services. We believe that they can be a powerful educational tool when conscientiously used within a larger context of academic integrity, but they introduce ethical (and potentially legal) problems that are too serious to be overlooked. In addition, unless they are thoroughly integrated into an overall course plan, they can be obtrusive and do hold the potential of altering classroom relationships. Because we do not have sufficient answers to these questions, we cannot endorse the use of online plagiarism detection without these major reservations. However, because we also lack sufficient answers to the problem of academic dishonesty, neither can we dismiss online plagiarism detection out of hand. More research in academic dishonesty, from rates and motivations of occurrences to trends and technologies for new approaches, may be our best hope for better understanding, better strategies, and better teaching.

References

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