

Nothing Hard about Soft Skills in the College Classroom

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### Abstract

Soft skills are defined, and reasons for teaching them in colleges are discussed in light of adult transformative and brain-based learning theories. Strategies for teaching soft skills are presented.

Results of a pilot study with a purposive sample revealed it is possible to teach and track the development of Listening, Teamwork, and Responsibility while teaching graduate Research Methods. All students demonstrated statistically significant ( $p < .001$ ) improvement in their soft skill ratings over the course of the semester. In order to teach the whole person, employ effective strategies that facilitate learning, and prepare students fully for their clinical and professional practice, professors are encouraged to teach soft skills explicitly.

### Nothing Hard about Soft Skills in the College Classroom

Soft skills have been defined a number of ways in the workforce literature. There is even some criticism of using the term *soft skills* as it may suggest the skills are “kind of fluffy, and they’re not really as important, and they’re kind of just a nice little add-on” (Schick, 2000, p. 25). Soft skills encompass a range of interpersonal skills such as courtesy, respect for others, work ethic, teamwork, self-discipline, self-confidence, conformity to norms, language proficiency, and behavior and communication skills (Career Directions, 2003; Career Opportunities News, 2002). Soft skills also include listening, teamwork, and responsibility (Dash, 2001; Gorman, 2000; Isaacs, 1998; NCATE, 2001; Schulz, 1998).

But what happens when professors perceive there are individuals in their college classroom who are deficient in their soft skills? When did it enter a professor’s job description to teach students fundamental courtesy, social graces, and collegiality while teaching the hard skills of inferential statistics? After all, aren’t professors to teach the specialized knowledge honed in their doctoral programs? Teaching soft skills with the hard skills recognizes that professors are teaching the whole person. They are teaching students statistical analysis; not teaching statistical analysis to students. The order of the words makes a fine distinction and suggests professors teach soft skills to engage the whole person in learning and for success in their future careers. Acquisition of soft skills is important to an individual’s success in a research methods class in activities such as Think-Pair-Share (Lyman, 1981), analysis of peer-reviewed journal

articles, writer's workshop, cross pollination of solutions to the various statistical analyses, and test-like events (Sperling, 2006). These activities require listening, teamwork, and responsibility and are designed to increase students' "ways of knowing" (Huitt, 1998). Application and synthesis of the new terminology is foundational to a quantitative research class; thus, active participation is important. Students need to be responsible in reading the text and making an effort to come to class prepared to contribute, ask questions, and apply the concepts presented. Beyond the classroom, a lack of soft skills is more likely to get an individual's employment terminated than a lack of cognitive or technological skills (Behm, 2003; Lawrence, 1998), and Human Resource directors, school principals and their interviewing teams, and university Search Committees consider candidates' soft skills when determining whether individuals "fit" the organization (Jaschik, 2006; Lawrence, 1998; Liu, 2005). Fit is two-way, as practicing teachers consider whether their schools and the teaching profession are the right fit for them; it is a factor in the retention of new teachers (Liu, 2005). Even if professors decide to teach soft skills concurrently with the hard skills of their course content in an attempt to teach to the whole person, is it possible to effect change in the soft skills of students in one semester?

In order to investigate whether the explicit teaching of soft skills results in behavioral change in students in the college classroom, a pilot study was conducted with a purposive sample of 10 students of varied levels of teacher education endorsement enrolled in a private university's Master of Arts in Teaching (MAT) cohort and a quantitative research class. One purpose of the

study was to investigate the effectiveness of teaching the soft skills of Listening, Teamwork, and Responsibility in addition to quantitative research methods (hard skills). Secondly, the study investigated if it was realistically possible to track soft skills while teaching and to collect preliminary data as to whether the operational definitions extracted from the literature of the three soft skills examined were adequate in terms of specificity when observing and subsequently rating student behaviors. Listening was behaviorally defined as providing cogent responses to colleagues or the instructor as evidence of hearing with intention. Teamwork was defined as production of a response or product resulting from joint responsibility of the collaborating team members. Responsibility was defined as participants turning in assignments on time, completing assigned reading prior to class, and taking responsibility for one's words and behaviors as evidenced by the lack of demonstration of thinking errors in verbalizations (Hyslop, 1988; Penn State University, 2004; Colorado Springs School District, 2004). A theoretical foundation for this study was formed by examining literature on soft skills, trends in today's college student population, and characteristics of adult learners.

#### *Theoretical Foundation*

Soft skills comprise a cluster of personality traits, social graces, facility with language, personal habits, friendliness, and optimism which individuals acquire as they grow and mature. Other soft skills are active listening, negotiating, conflict resolution, problem solving, reflection, critical thinking, ethics, and leadership skills (Dash, 2001; Gorman, 2000; Isaacs, 1998; Schulz, 1998). In teacher education, the soft skills of social justice, caring, responsibility, and

fairness are called dispositions and are part of the triad of knowledge, skills, and dispositions competent teacher education candidates should demonstrate according to the National Council for the Accreditation of Teacher Education (NCATE, 2001). College students have changed over the last several years, and these changes are suggesting a need to teach soft skills concurrently with the other curriculum. Teaching soft skills with methods consistent with adult and brain learning theories maximizes learning (Sousa, 2001).

### *Changes in College Students*

The changes in college classrooms have occurred for a variety of reasons. There are a larger percentage of older students who could be called nontraditional students, mature students, or adult learners. Thirty years ago university classrooms were filled with students who were predominantly white and under the age of 25. Now, the age-25-and-older student accounts for about a third of the students, and approximately 28 percent of students are of color. Adults enter classrooms asking, "What is the reason I should learn this? What will I get out of this class, besides earning three semester hours and fulfilling a graduation requirement?" Adults bristle if they perceive assignments are busy work, and they want authentic assignments directly related to their career goal. Many of these older individuals have held positions of responsibility prior to returning to school, and they want to be shown respect for what they bring to the classroom; instructors are expected to know the needs of these individuals, make class pleasurable while minimizing threat, deal with possibly fragile or inflated egos, and understand these older students have a life outside of their college

classroom that could interfere with deadlines stipulated in the syllabus. This trend is only growing stronger with demands for retraining in a fluid work environment (Anderson, 2003). Political, economic, and societal changes, as well as changes in gender attitudes have coincided with an increase in women, minorities, and individuals with lower socioeconomic status attending college in greater numbers (Ogren, 2003). The U.S. Department of Education reported that almost 75 percent of undergraduates can be considered nontraditional as a result of their age, financial status, or when they enrolled in college (Evelyn, 2002). Today's students are motivated to pursue knowledge and skills useful in their life roles while maintaining a sense of self-esteem and pleasure (Boulmetis, 1999). This trend is being reflected campus wide.

The society in which these students have lived has also changed over the last twenty-five years. Adults bring emotional baggage from their childhood and adolescent years along with their textbooks. There are more college students who have experienced alcohol and/or drug abuse, domestic violence, mental health issues (i.e. anxiety, depression, suicidal ideation, personality disorder) or have family members who have experienced those problems. It is not uncommon for class members to share they are recovering from some form of substance abuse or that they come from a family where there has been generational poverty, child abuse, single-parent households, domestic violence, hospitalization of a family member for a mental health issue, or incarceration of a family member. A Kansas State University study of counseling center client problems of 13,000 students over a 13-year time period found students who had

been seen in the more recent years presented with more complex problems. The problems included the more traditional issues of college students, such as relationship difficulties and developmental struggles, as well as more serious diagnoses of personality disorders, depression, suicidal ideation, anxiety, and sexual assault. In fact, the number of students diagnosed with depression had doubled over the 13-year time period of the study, the number of students reporting suicidal ideation had tripled, and sexual assault-related issues had quadrupled (Benton, Robertson, Tseng, Newton, Benton, 2003). Some college campuses are now dedicating housing, sometimes called "Recovery Dorms," to support individuals' recovery (CNN, 2005). Additionally, the current upsurge in the prevalence and abuse of methamphetamines in many communities is touching the lives of students and their families and adds additional stressors to adults attending higher education that could be behaviorally demonstrated in their classes. The results of all of these societal issues have been changes in methods and curriculum from what was used previously with the traditional college student. Instructional formats require more active student participation and cooperative learning as they move away from primarily lectures. This brings to light the importance of students demonstrating soft skill competencies in the college classroom along with competencies in the core curriculum (hard skills). This research endeavored to investigate the effect of explicitly teaching soft skills in a quantitative research methods class.

### *Method*

This research emerged from data collected in the form of field notes at several recent national conferences (The Association of Independent Liberal Arts Colleges for Teacher Education, 2004, 2005; Teaching Professor, 2005, 2006; American Association of Colleges for Teacher Education, 2005, 2006), where individuals discussed issues associated with today's adult learners in informal table talks and in conference sessions (Arwood & Waggoner; 2005, 2006; Waggoner & Eifler, 2006; Waggoner & Wollert, 2005a). Session attendees were teaching professors and administrators of public and private teacher education programs and of disciplines in the College of Arts and Sciences. The data were classified and summarized to identify themes and patterns. Themes emerged suggesting the days were gone when most every student came to class on time, without cell phones (turned on), and without beverages and/or food. Some instructors reported students brought their infants or older children to class, and it was common to hear the ring of a cell phone at least once while teaching. This sometimes was followed by the student answering the call and engaging in conversation or walking out of the class talking while the class was in session. Text mailing is also on the upsurge in college classrooms. Terms such as *demanding, combative, emotional, outspoken, and less respectful* were recorded in field notes. In one conference session (Waggoner & Wollert, 2005a), it was stated that students saw themselves as consumers buying a product in the higher education setting. They want their money's worth, and they are willing to lodge a consumer complaint if the service or "goods" do not meet their expectations or are perceived to be of poor value for their money. Those

teaching in private institutions said it was common for students to remind the professors how much money they were spending pursuing their degree. While statements made in conference sessions were not necessarily authoritative, they were consistent with the literature (Benton, Robertson, Tseng, Newton, Benton, 2003; Boulmetis, 1999; Glater, 2006) indicating a change in today's student. The changed student population suggests a need to adapt classroom environments to accommodate the savvy and more vocal consumers of education and the adults who demonstrate difficult behaviors (Anderson, 2003; Benton, Robertson, Tseng, Newton, Benton, 2003; Boulmetis, 1999; Evelyn, 2002; Ogren 2003).

### *Which Soft Skills?*

It was necessary to determine which soft skills would be the focus of this research. These skills vary depending upon the needs and characteristics of the students attending the various universities, but there are some skills that may be common to many universities. Corporate scandals have brought to light the continued need to address ethics in all of our classrooms (Bunker & Wakefield, 2004), and the literature on the ideal employee frequently mentions the importance of the individuals who are respectful, flexible, courteous, and are good listeners and effective problem solvers (Dash, 2001; Gorman, 2000; Isaacs, 1998; Schulz, 1998).

For this study, the data were brought to the class as gifts from the students in previous quantitative research classes. With the research class format changed from primarily lectures to more active student participation, individuals with emotional baggage had a variety of opportunities to reveal their

personal issues during class. It was more evident when students appeared to have an authority problem, a chip on their shoulder, struggled with teamwork, or had difficulty managing their moods. While the aforementioned behaviors are not necessarily new to college classrooms, it is now more common to have them demonstrated by more students more frequently and more intensely. Other issues were easily identified in those awkward moments when a student said something others perceived as rude, or when the same person had interrupted class for the fourth time. The skill deficit was also apparent when students had not completed the assignment prior to class, were not listening to each other resulting in the same question being asked again that was just answered, and when cooperative learning strategies failed due to students being uncooperative.

In reviewing some of the more common and essential soft skills that might be taught in college classrooms concurrently with the course content (hard skills), some natural choices such as respect, listening, problem solving, teamwork, flexibility, responsibility, and interpersonal competence emerged from discussions with other colleagues at the professor's university and in the Assessment Committee in discussions of dispositions. As a result, Listening, Teamwork, and Responsibility were chosen to track. In an effort to obtain reliable measurements, the professor had trained on *Assessing Educator Dispositions Manual* and achieved .90 reliability on *Post-test Materials Set #1* ([www.educatordispositions.org](http://www.educatordispositions.org)). The professor was also a member of the School of Education's Assessment team and had worked with faculty on a dispositional rating scale. The question still remained in terms of the implementation of this

study whether soft skills could be taught in a quantitative research course concurrently with the course content.

It has been argued that soft skills or dispositions are acquired through inculcation, are developed early in life, and are difficult to excise and replace with others. Therefore, it can be seen as misguided and too late to transmit and assess them with adults (McKnight, 2004). Given the encouraging literature on adult and brain-based learning, however, there is a belief by others that adults can improve their soft skills as part of their lifelong learning journey if there is a classroom community that fosters such growth. Adult transformational learning theory is based on the concept of lifelong learning, is consistent with brain plasticity, and purports adults are capable of changing the way they see themselves and their world (Clark, 1993). The business world is so convinced that adults are capable of improving their soft skills that there is a whole consultation industry devoted to improving soft skills of engineers, informational security majors, Information Technology specialists, health care providers, and others in a variety of fields. There is even a coalition of business organizations and state leaders who are members of the Equipped for the Future Work Readiness Credential Project that is suggesting creation of a uniform certificate or credential that would be recognized in several states attesting to an individual's mastery of certain soft skills (Cavenagh, 2005). Since the literature has suggested that it is possible to teach soft skills, this premise was tested in this pilot study.

*Teaching Soft Skills*

The professor began the quantitative research course by discussing the relevancy of consistent demonstration of soft skills in different settings. Students generated examples of soft skills, described how a particular skill is manifested behaviorally, and gave examples of instances when a lack of soft skills created problems. Soft skills were discussed when reviewing the syllabus as were learned outcomes to be evaluated. Additionally, the instructor took care to model soft skills and give consistent, specific reinforcement for positive demonstrations of soft skills. Lifelong learning is part of the conceptual framework of this university and was referenced in discussing the importance of soft skills with the participants.

Mezirow (1991) suggests using a “disorienting dilemma” (p. 168) which leads to reflection and reevaluation of assumptions individuals possess upon entry to the course. Therefore, students were led to experience cognitive dissonance, which is a psychological phenomenon describing the discomfort felt when there is a discrepancy between what an individual knows or believes and new information (O’Keefe, 1990). This discomfort led to productive discussion of their new perspective. Students were encouraged to monitor their thinking and engage in metacognition (ability of one to control one’s own cognitive processing) by actively processing what they learned, how they learned it, and reflect and analyze interpersonal issues (Waggoner & Wollert, 2005a). The disorienting dilemma used in this study involved students examining the theory of Type I and Type II errors and instrumentation in decision making. They were presented with a scenario after which they were asked to make a decision about the civil

commitment of a sex offender. (The theory of Type I and Type II errors was addressed in more detail later in the course.)

The scenario explained the process of civil commitment of sex offenders deemed Sexually Violent Predators. Students discussed in small groups the implications of making a Type I or Type II error in the civil commitment decision. After they had come to a decision regarding civil commitment of the sex offender, the methodology for developing the Minnesota Sex Offender Screening Tool-Revised ([MnSOST-R]; Epperson, D. L., Kaul, J. D., & Hesselton, D., 1997), which is an actuarial test for the prediction of sexual recidivism of convicted sex offenders (Waggoner & Wollert, 2005b), was reviewed. Students were then asked to determine what effect, if any, the information regarding the MnSOST-R had on their decision.

Students and the professor also engaged in spontaneous role plays during the semester to add authenticity to discipline-specific issues. One role play explored varied voice tones to answer a question regarding whether to reject or not reject the null hypothesis when given output data of a paired-samples t-test. Another role play asked students to enact how they would explain a z-score to a faculty member at their schools. It is possible to have fun with these role plays, as the instructor and students become more comfortable throughout the term.

An important consideration was being consistent in teaching and reinforcing soft skills throughout the course. When the professor dropped emphasis on soft skills, students also slacked. One instance of soft skill slacking was when the students in one research section that was taught in a computer lab

began instant messaging each other while the professor was speaking. When confronted, students said “the computers distracted them,” blaming their behavior on the computer. That teachable moment led to a discussion of thinking errors—specifically blaming versus taking personal responsibility for one’s actions originally discussed in Yochelson & Samenow, Volume 1 as cited by Colorado Springs School District, 2004. Some humor was used in suggesting the computer did not “make” the students do anything and that bright Master’s candidates should be able to generate a solution to being distracted by the big, mean computer. The professor asked for solutions, modeling a strategy the teachers could use in their schools when there is undesired behavior and waited until solutions were put forth. One student suggested he could move the keyboard atop the monitor and another said he could turn off his monitor.

Involving the students in developing a culture where these soft skills were as important to practice as the other course content provides the repetition and consistency needed for skill acquisition. The professor asked students to “please rephrase” verbalizations if they were perceived as spoken in a whining tone or were less than courteous. Veiled aggressive comments or put-downs to colleagues made in a “joking” manner were also confronted and discussed as a possible indication of passive-aggressive behavior. Another valuable tool was the pre-correction, whereby the professor began class with a reminder about cell phone courtesy and respectful class interactions. The collegial culture resulted in students giving feedback to each other without intervention by the professor.

Soft skill instruction was also an excellent time to incorporate movement into the lesson and to provide an academically-based break from teaching a hard skill, which is consistent with brain-based learning. “By getting up and moving, we recirculate [that] blood. Within a minute, there is about 15 percent more blood in our brain” (Sousa, 2001, p. 32). In fact, just standing up may increase one’s heart rate by ten beats per minute, which is beneficial to the human brain and its ability to think and remember (Teele, 2002). After students were explained the theory of rejection of the null hypothesis in relation to calculating an analysis of variance, they were asked to move to form a group with others with whom they normally did not work and complete “test-like events” on the material (Sperling, 2006). Students’ concentration on hard skill material was enhanced by periodic movement and academically-based breaks that focused on soft skills of teamwork and listening. These breaks were similar to walking a bit after jogging at a fast pace for an extended time period, as the brain can assimilate a limited amount of strenuous content at any one chunk of time. Content and activities requiring movement were clumped into 20 minute intervals in order to keep the brain refreshed and active. The teamwork environment built during soft skill acquisition (Knowles, 1970, 1980) contributed to a positive classroom climate and rejuvenated learning readiness for tackling the Chi Square.

The teaching of soft skills was embedded in each lesson with think-pair-shares (Lyman, (1981), teamwork (Abernathy & Reardon, 2002; Knowles, 1970, 1980), test-like events (Sperling, 2006), and positive reinforcement of desired soft skills. These activities were a daily routine for the semester, removing any

novelty effect, and involved student movement consistent with brain-based learning (Sousa, 2001), as students formed groups for these activities and for academically-based breaks. As research proposals neared completion, writers' workshop was implemented. Students were responsible for bringing drafts of their research proposals to class and for exchanging papers for peer review and editing. A signed peer-reviewed draft was required before submission of the draft to the professor.

### *Sample*

The sample selection was purposive in order to have some diversity in age, gender, and ethnicity and, in an attempt to reflect characteristics of the Master's cohort (62 students in cohort), achieve a sample greater than 10% of the cohort for the pilot study, and explore treatment effects on a varied (though small) sample. The sample consisted of five males and five females ranging in ages from 24 to 55 providing an equal gender split and a wide range of participants' ages. The participants were predominantly European American (purposely chosen for gender and varied ages), a Latina student, and two students of Pacific Island ethnicity. At the time of selection and initial rating of soft skills, the researcher had not previously taught any of the students. Soft skills' initial ratings were assigned after six contact hours with the researcher in which observational data were collected in field notes. The instruction in soft skills was infused in the standard research methods curriculum with such activities as role plays, test-like events, direct instruction, writers' workshop, and student

collaborations. This was consistent with the professor's usual teaching of this research course and was not specially introduced for the sake of the pilot study.

### *Limitations and Delimitations*

There were obvious limitations to this pilot study. It was a small, purposive sample, conducted with one semester of Masters in Teaching students. Given the nature of soft skills, different operational definitions of the terms could yield different ratings. The same rater was used for both the pretest and posttest. If there was inflation or deflation of scoring, it should have operated equally upon the pretest and posttest, not affecting the mean difference between the measures on the dependent variable. Observational data were converted to an interval scale after synthesis and holistic analysis, which could introduce error. As with any rating, it is possible the ratings could be subject to researcher bias. Since students were enrolled in several classes as part of their degree program and were engaged in field experience in local schools, it is not possible to attribute all the increase in soft skill ratings to the explicit teaching of soft skills in the research methods class. The results are not generalizable to other populations and may be subject to other interpretations.

### *Ratings*

The MAT students were rated on an interval scale of one to five with one indicating "lacking" the skill (low descriptor), and five representing "exemplary" demonstration of the skill (high descriptor) at the beginning of the semester and at its conclusion. The middle descriptor, three, corresponded with "developing." This scale was adapted from information presented at the Symposium on

Educator Dispositions (2005). These ratings were assigned after the coded field notes from the observations were synthesized and analyzed. The three soft skills rated were Listening, Teamwork, and Responsibility. Positive and negative examples of the targeted soft skills were recorded with narrative phrases and marks indicating positive and negative demonstration of soft skills. These data were synthesized and converted to interval scale soft skill ratings on the pretest and posttest after six initial contact hours and at the end of the study. The recording sheets were kept in the professor's possession throughout the ratings to assist in maintaining focused attention while rating. A new sheet was used each class so that prior ratings did not influence subsequent ratings.

All cohort students were given the explicit notice that the instructor would be monitoring and collecting data on Listening, Teamwork, and Responsibility as a regular part of the course, and data collected would not be included in the final grade for the course. Although the targeted soft skills could be components in the students' semester grades (students do not earn full or partial assignment points if the assignments are missing or late), these soft skills ratings were calculated independently of the semester grades and were analyzed anonymously three weeks after the semester grades were submitted to the university. Students were not aware which 10 students' data would be chosen for data analysis in an effort to protect against researcher effect. Separate spreadsheets were used to record daily field notes that were converted to pretest and posttest ratings. The instructor did not review the pretest rating when assigning the rating for the

posttest. For the data analysis, all names were removed, and numbers were assigned to each subject. The numbers were then randomly reordered.

### *Results*

It was concluded it is possible to assess the soft skills of Listening, Teamwork, and Responsibility in addition to teaching the course content (hard skills). The operational definitions were adequate in terms of possessing limited intrinsic ambiguity and sufficient specificity for identification of the targeted skills when recording observational data and to convert the observational data to an interval scale. Likewise, six initial contact hours were sufficient for students to demonstrate behaviors recorded in field notes, synthesized, and converted to soft skill ratings after holistic review when students were given specific activities that would require them to demonstrate those behaviors. Examples of activities used in this pilot study were a “disorienting dilemma” (Mezirow, 1991, p. 168), role plays, teamwork on research exercises, test-like events (Sperling, 2006), periodic movement, academically-based breaks, and collegial behavioral feedback. Collecting data on 10 students required focused attention on the specific soft skills, but this was not overly time consuming when a coded sheet was kept in the professor’s possession throughout the class to assist in maintaining focused attention while recording observations. Many of the observations were made during times students were working in groups or independently. Data collection and analysis were ongoing throughout the semester. It is estimated it took less than a minute to review and record participants’ behaviors during any one observation.

The 10 participants were rated by the professor on the soft skills of Listening, Teamwork, and Responsibility at the beginning of the semester and again at the end of the semester. The coded observational field notes were converted to an interval scale after holistic review. Although this case study did not meet parametric assumptions for calculating paired-sample t-tests (Gay, Mills, & Airaisan, 2006), statistical analyses of the means were conducted to include additional information beyond descriptive statistics. The mean pretest rating for Listening and Teamwork were each 2.6 (SD = .516), and the mean rating for Responsibility was 2.7 (SD = .675). At the posttest, all students' soft skills ratings improved. The mean rating for Listening was 4.1 (SD = .738), the mean rating for Teamwork was 4.3 (SD = .675), and the mean rating for Responsibility was 4.4 (SD = .843). All two-tailed, paired sample t-tests ( $df = 9$ ) were statistically significant at  $p < .001$ , indicating the results are unlikely to have occurred by chance, and the observed difference between the pretest and posttest ratings is probably a real one. The effect sizes for Listening, Teamwork, and Responsibility were 2.36, 2.67, and 2.23 respectively.

### *Discussion*

Though this was a small pilot study with limitations in design, and the results have low external validity for generalization of findings, it was encouraging to examine and note improvement in students' Listening, Teamwork, and Responsibility over the course of a semester. It should be examined whether it is possible that if several professors explicitly teach soft skills that there could be a synergistic effect from multiple treatments. Adult

learners bring specific, defined characteristics to the university learning environment. Although the aging process can increase the vulnerability of brain connections, it also has the potential to assist the growth of neural networks, resulting in the adult brain becoming more responsive to absorbing information and new learning (Clark, 1993; Fishback, 1998-1999). The challenge is to maximize that growth of neural networks by teaching in a way that is compatible with adult learning theory. Over 30 years ago, Malcolm Knowles (1970, 1980) wrote one of the pioneering books addressing characteristics of adult learners. The andragogical model of Knowles referenced adults' needs for a suitable physical and psychological climate, cooperative learning activities, and elements of self-directed learning. The learning environment created in this investigation was compatible with adult learning theory by implementing activities that increased ways of knowing and produced a positive learning climate when students worked together. Adult transformative learning theory (Clark, 1993; Dirks, 1998; Elias, 2000) and brain-based learning theory (Fishback, 1998-1999; Knowles, 1979, 1980; Reardon, 1998-1999; Weiss, 2000) have provided guidance for teaching adults in ways that maximize their learning potential, recognize the unique characteristics adults bring to a learning community, and minimize behaviors that can be detrimental to the student, the learning community, and to the individuals in clinical and professional practice. Learning involves the creation of neural networks and synapses (Fishback, 1998-1999), and brain plasticity, which enables the brain to be molded and reshaped, continues throughout one's lifetime (Zull, 2004). This knowledge suggests it is

possible to improve students' soft skills by embedding soft skill instruction in courses.

The Implementation of think-pair-shares (Lyman, 1981), cross pollination of answers, writers' workshop, role plays, disorienting dilemmas (Mesirow, 1991) and the use of test-like events (Sperling, 2006) are more successful when students have strengths in soft skills, as these activities involve listening, teamwork, and responsibility. Incorporating movement and chunking content and activities are consistent with brain-based learning. These activities also help build a collaborative and psychologically safe learning environment where students are more comfortable to take risks and ask for assistance when interpreting the statistical significance of data calculations. This is consistent with adults' needs for a suitable physical and psychological climate and elements of self-directed learning in their quest to be lifelong learners, which is integral to the theory of adult transformative learning (Knowles, 1970, 1980).

An extension of this study would be to explore the effect of giving students self-scoring guides to monitor their personal growth process. This would be consistent with adult transformational learning theory, which purports adults are capable of changing the way they see themselves and their world (Clark, 1993) and self regulation (Paris & Paris, 2001). These assessments would be a visual reminder for students of the desired soft skill competencies and would increase the active engagement of students in their personal growth. This would also encourage a student to become a self-regulated learner "who monitors, directs, and regulates actions toward goals of information acquisition, expanding

expertise, and self-improvement” (Paris & Paris, 2001, p. 89). It would be fascinating to compare student ratings with those of the professor to determine the level of agreement. If there was a large discrepancy, the data could be reviewed for meaningful dialog regarding the difference in perceptions.

This study should be replicated with a larger sample and in varied courses to determine if the results are similar, since the sample size of 10 in this pilot study was small and purposive. Although data could be collected without undue burden on the researcher with 10 students, what would be the effect of collecting data on a class of 35 to 40 students? Would doing so interfere with teaching the course content?

Another option would be to collect pretest data on the entire group of students but only target the outliers who demonstrated fewer or particularly troubling soft skills for continued monitoring and intervention.

Given the changes in society and in the behaviors of today’s college student, it is necessary to teach soft skills explicitly for students to be successful upon graduation. As Glater (2006) remarked,

While once professors may have expected deference, their expertise seems to have become just another service that students, as consumers, are buying. So students may have no fear of giving offense, imposing on the professor’s time or even of asking a question that may reflect badly on their own judgment. (¶17)

Not only will strengths in soft skills enrich the classroom strategies employed to increase students’ ways of knowing (Huitt, 1998), but faculty will find that classes

are more enjoyable for everyone when there is a climate of courtesy and respect. Students will acquire or refine those skills that have been identified as key factors to an individual's future success when he or she leaves the world of academia (Behm, 2003). When challenging soft skills are identified in students early in their Master's degree program, timely intervention and scaffolding of growth experiences can be implemented to assist the student in choosing to make changes in his or her soft skills. Faculty could implement staffing of the struggling students, so that they can work as a team with the student to improve the targeted issues.

The rating scale in this pilot study should be subjected to further analysis of its construct validity as well as the process of converting field notes to the interval rating scale. While the process operated satisfactorily for this pilot study, it could have been an artifact of the researcher's training, experience, and prior knowledge. As with employing any rating scale, individuals should be trained and achieve interrater reliability.

A cautionary note is that there are some issues that students need to address through professional counseling and possibly medication. Individuals who display major depressive disorders, suicidal ideation, bipolar disorder, and other serious mental health issues need to be referred to the university's counseling center for additional services. It is important that professors make appropriate referrals for the safety and security of troubled individuals. When in doubt, it is best to err on the side of safety, and to make a referral according to the university's policies and procedures.

Rather than lamenting the changes seen in some of today's college students, professors can welcome the challenge to teach the whole student and assist in the adult student's transformative learning. It can add enjoyment and enhance learning for students to take an academically-based break from calculating a correlation coefficient individually to working in teams or with their "2 p.m. appointment" to determine which test of significance is appropriate for a set of interval data. Hard times demand soft skills, and universities can help with the acquisition of soft skills by embedding them in course curriculum and explicitly addressing them throughout each semester.

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