

Sound Instruction Series

Ready to Use Classroom Practice
Volume II

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Sound Instruction
Ready to Use Classroom Practice Volume II

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Preface

Sound Instruction: Ready to Use Classroom Practice Volume II is just the beginning of a collaboration between researchers and practitioners across the country and the world. Educators from Hong Kong to Minnesota and from Nevada to Scotland were invited to participate in the dissemination of their research through this collection of qualitative papers, case studies, and research projects. This collection of work provides an important framework for a discussion of key issues in instruction.

The content in Sound Instruction: Ready to Use Classroom Practice Volume II focuses on three areas of education that are of critical importance to all aspects of the field: assessment, consultation/collaboration, and online learning. In this volume a group of authors address a wide variety of sub-topics within these areas. It is our hope that this book can be used as a resource for practitioners in the field of education, for college students training to be educators, and for community members seeking greater knowledge about educational assessment, consultation/collaboration, and online teaching and learning. In addition, many of the submissions allow for an examination of student and teacher perceptions regarding these valuable topics. The articles selected for inclusion in this collection include those that we felt make an important contribution to furthering our understanding of sound instruction.

The focus on assessment at all levels of education has increased dramatically over the past several years as accountability and reporting have become more data-driven. From determining appropriate academic levels of students to determining effective teaching practices, to the analysis of the validity and reliability of specific assessment tools, proper assessment is necessary. As such, many different aspects of educational assessment are covered in this chapter. Sound Instruction: Ready to Use Classroom Practice Volume II begins with this chapter since assessment provides a key foundation for all instruction and program analysis. The selected articles include both formative and summative assessment as well as discussions of both classroom-based and self-assessment techniques. Many articles in the following chapters also address issues of assessment, but this chapter is specifically designed with a collection of work for which the assessment was the primary focus.

A total of nine articles have been selected for inclusion in this chapter on assessment, and while the topics covered are not exhaustive, we feel that they do address many important aspects of sound assessment practice and analysis. We acknowledge that the process of assessment is important to the examination of student, teacher, and program outcomes. Furthermore, it is important to note that assessment can be used to measure outcomes while also being used to guide teaching or to examine beliefs and perceptions. If used efficiently and effectively, assessment can be a valuable tool. Therefore, it is our hope that you find ideas, procedures, and practices in this chapter that will help strengthen your use of the assessment process.

The second and largest chapter in this text includes articles that address research on consultation and collaboration among professionals, international collaboration projects, partnerships between schools and universities, and analysis of specific elements within a specific course. It is not a surprise that this constitutes the largest section of this text, with seventeen invited submissions because collaborative relationships are of critical importance to successful instruction. Included among these rich and diverse studies are articles that focus on preparing teachers for collaboration. Addressing collaboration reform is highlighted in several different sections of this chapter. In addition, research on specific methods to consult in a business environment,

collaboration in inclusive classrooms, and an analysis of different models of co-teaching are also included. We hope that as you search for effective ways to provide instruction, to improve student learning and enhance program outcomes, you look to collaborative and consultative relationships.

The final chapter in this text includes a selection of work that focuses on online learning and technology. We are pleased that Dr. Ben Varner has joined us as the chapter editor for this valuable collection of work. *Sound Instruction: Ready to Use Classroom Practice Volume II* ends with this focus since online learning and instruction has become one of the aspects of instruction that is quickly changing and becoming of increased importance at all levels of education. As more and more learning is taking place within an online experience, it becomes critical that educators examine not only the best practices in online instruction but also participate in program evaluation of online programs, examine student perception of online learning as well as course design and student and teacher expectations.

In this chapter you will find valuable information that will help guide your future online learning and teaching experiences. Dr. Varner describes these submissions by stating that “Web-based instructional delivery has resulted in an explosion of ‘online learning’ initiatives, technological innovations in education, and creative uses of the Internet. This focus is on ways of delivering instruction through asynchronous or synchronous methods either through online courses or by ‘hybrid’ or ‘blended’ courses.” Therefore, the selected articles expand on this instructional delivery.

We hope that *Sound Instruction: Ready to Use Classroom Practice Volume II* can be used in a variety of ways. First, it should serve as a resource for faculty and staff as they use assessment, consultation/collaboration, and online learning in their instruction of students and analysis of practice. We do not think that these three topics occur in isolation---but for the purpose of this text, we offer the works as small collections or chapters. Sometimes the lines between the topics blur since many articles present a study or concept that may overlap another topic in this volume. Above all, the information will hopefully serve as a guide to improve practices in these areas. Secondly, it is hoped that the collection of articles can be used as a text for pre-service and in-service coursework for those who desire to improve their craft by delivering sound instruction.

Finally, this volume of *Sound Instruction* could not have been published without the dedicated educators who are conducting research and writing in the areas of assessment, consultation and collaboration, and online learning. Their expertise, work, experience and thoughts combine to make this text a useful tool. This volume, then, is the ultimate collaborative endeavor.

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Chapter One: Assessment

Our probing measurement of the learning process in all its diverse forms and contexts has enabled significant advances in educational theory and practice at all levels and in all fields. Effective assessment can play a vital role in appropriately placing students, diagnosing learning problems and progress, improving and enriching teacher performance, and in achieving and maintaining academic standards. Assessment can be at the level of the individual learner, the class, the institution, or the educational system as a whole.

In addition, research demonstrates that the process of assessment is important to the examination of student, teacher, and program outcomes. Assessment can be used to measure outcomes while being used to guide teaching or examine beliefs and perceptions. Assessment is a valuable tool if used efficiently and effectively. Various procedures for assessing students, classrooms, teachers, schools, and programs are presented in the following chapter.

Formative assessment, or that ongoing assessment that drives instruction is examined in three articles, whereas strategic assessment design is examined in others. Student practices in assessment are examined as well as challenges to assessment and particular models of assessment practice.

A variety of different articles that focus upon these important assessment issues is included. Other topics selected for this chapter include service learning and self-assessment. We hope that you will find the topics and projects examined by authors in this issue valuable in your use of effective assessment across a variety of learners and settings.

Challenges to Effective Assessment of Learning

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Introduction

The importance of systematically and continuously assessing student learning in higher education has been widely discussed. Seybert (2002) notes that assessment of student learning has become a major issue for higher education for multiple reasons, including accreditation, accountability, and performance indicators for funding. Angelo and Cross (1993) define assessment in this context as the multidimensional process of appraising the learning that occurs in the classroom. Pascarella and Terenzini (1991) note that the enhancement of student learning is central to the mission of colleges and universities. Clearly, systematic, meaningful assessment of student learning helps an institution determine if its core mission – the education of students – is being achieved.

Although the jargon of assessment varies somewhat from one expert to the next, the underlying concept is simple. Assessment of student learning means answering several important questions. What are our students expected to learn? What information can we collect to determine if that learning is occurring? What decisions can we make about our program after we review that information? Banta, Lund, Black, and Oblander (1996) note that assessment is not an end in itself but a vehicle for continuous improvement of the educational process.

Norton and Dudycha (2001) note that systematic assessment of student learning can be valuable to programs and to institutions in multiple ways. It can provide information that is essential for continuous improvement of academic programs. It is also essential for an institution's accountability to various stakeholders, including prospective students and parents, accrediting agencies, and administrators who make decisions about resource allocation. Yet despite the potential value of assessment, implementing and maintaining a viable assessment process is often fraught with challenges.

The purpose of this paper is to identify some of those challenges and discuss ways to surmount them. These challenges reflect concerns commonly expressed by both faculty and administrators during the author's experience as Director of Academic Assessment at a regional public university in the Midwest, United States. The author, also a Professor of Human Resource Management, has worked extensively with administrators and with faculty from across the university to discuss, design, implement, and monitor assessment efforts.

How do we know what our goals should be?

Determining the learning goals is at the heart of systematic assessment of student learning. Decisions about how to assess learning – e.g., what measurement approaches should be used – are secondary to decisions about what the learning goals should be. Oftentimes, however, faculty are uncertain about what their program's learning goals should be, and how learning outcomes can be identified. In some cases, a learning outcome was chosen largely because that outcome could be measured. This is obviously contrary to the essence of assessment. Ideally, the focus should be on what students ought to be learning and then on how to assess it.

This question was asked frequently on the author's campus, and it was clear that some faculty were unsure about how to determine the goals of their programs. In reality, faculty are often the best judges of what should be addressed in their programs. Therefore, it is helpful for faculty to be familiar with some of the ways to identify learning goals. In some cases, the program may be accredited by an external agency, and often such agencies have specific requirements about program/curriculum contents. For example, many business programs seek to earn and/or maintain accreditation from the AACSB International (the Association to Advance Collegiate Schools of Business). Newly-adopted AACSB standards include both specific learning outcomes and more general learning outcomes. While relying solely on an accrediting agency for identifying learning standards may be too formulaic (cf., Dill, 2000), it may at least provide some guidance in terms of what a program should address. [Note that virtually all accrediting agencies, whether program-specific or institution-wide, require systematic assessment of student learning. Indeed, Hatfield & Gorman (2000) note that the requirements of accrediting agencies are one of the reasons that assessment has gained additional urgency.]

Another way of identifying learning goals is to review programs at other universities. Faculty in a physics program, for example, may compare their program (course offerings, prerequisites, policies, etc.) to physics programs at other universities. The faculty may then decide to use similar goals or they may decide to use at least some unique goals. Both approaches have value. In the former, the similarity ensures that stakeholders will recognize that the program is consistent with offerings at other universities. This may be important in fields of study such as Accounting, where a student may eventually wish to pursue professional certification, which depends partially on completion of a standardized course of study. In the latter, the uniqueness may help create a niche for a program – e.g., “here is what is special about this program of study at our university as compared to other universities.”

Still another way to identify learning goals is to determine what external stakeholders (e.g., employers that recruit students) consider valuable. The rationale is that if prospective employers need employees with specific skills, then the program can be designed to incorporate those skills. Faculty from a program might discuss desirable learning goals with prospective employers via surveys or focus groups. Norton and McArthur (1995), for example, described a process where faculty from a business program collected performance appraisal forms from approximately two dozen area employers. Those forms were carefully reviewed by a faculty committee to identify skills that were consistently mentioned by employers. The resulting list of eleven learning outcomes became an important part of the program's curriculum.

While this is not an exhaustive list, it may help address the original question. There is no “one size fits all” set of program goals, and there is no one best way of identifying appropriate learning goals. Indeed, a meaningful discussion of how to identify appropriate goals/outcomes for a program can be an immensely valuable part of the assessment process.

Aren't grades meaningless for 'real' assessment?

The essence of this question is what grades in a course really mean. In the author's experience, faculty in many disciplines routinely express concern that grades are not a

valid measure of student learning. Whether this concern is legitimate depends largely on the instructor's – and the program's – philosophy of grading.

Too often, grades are merely normative – e.g., a student receives a passing mark or a grade of “excellent” simply because that student has outperformed a certain percentage of the other students in the course. While normative grading may be acceptable for some purposes – e.g., for the instructor to provide a final mark for each student – it is much less helpful for other purposes. For a prospective employer, for example, knowing that a student received a mark of “outstanding” in a course because that student was in the top ten percent of a class says little or nothing about what that student actually knows or can do. Indeed, the tendency to grade normatively may be a reason why grades are often viewed with suspicion in assessment. In many of the author's discussions about assessment, it was obvious that many faculty were convinced that “real” assessment had to be burdensome and time-consuming and had to involve activities totally separate from the grading process, thus creating significant additional work for faculty and implying that the course grades themselves provided no relevant information about student learning. In some cases, in fact, faculty added additional work that was not counted towards the course requirements, such as an extra writing assignment to assess students' writing skills.

Before concluding that grades have little or no value in assessment, however, another perspective may be helpful. The author has often reassured faculty that they have always assessed student learning; an instructor has to do so in order to give students grades. Also, the work a student actually does as part of the requirements for a course is probably the most realistic information about student learning in that course. A student may have little if any motivation to do his/her best on an exercise that will have no bearing on grades or degree completion.

Rather than ignoring grading as a measure of student learning, the emphasis could be on ensuring that the grades themselves are meaningful. On many campuses, letter grades are used. Generally, a grade of A connotes outstanding performance and a grade of F connotes failure. Faculty are typically required to provide a final letter grade for each student in a course. Rather than assigning such grades normatively (e.g., a grade of A means that a student was better than everyone else in the class), it would be helpful to articulate the actual meaning of a specific grade. For example, if the instructor has identified ten specific goals for a writing course, he/she may then decide that only students who demonstrate proficiency on all ten goals will earn the grade of A. Students who demonstrate proficiency on eight or nine goals might earn the grade of B, and so on.

This approach to grading could serve several purposes. First, it “piggybacks” on the fact that faculty are grading student performance anyway, thus reducing the need for a great deal of extra effort on the part of the instructor. Also, as noted above, it involves work that the student is actually doing for that course rather than artificial exercises outside the context of course requirements, which may not be a very realistic picture of student learning. Finally, it would provide much more meaningful information. A prospective employer, for example, would know that a student who earned an A in a writing course had mastered specific writing skills.

Aren't we required to use standardized testing for 'real' assessment?

This question is somewhat related to concerns about grading. Many faculty believed that the only type of assessment that counted was the administration of a standardized

test of some sort. Certainly, there are standardized tests available for a variety of purposes. Whether or not a standardized test is an appropriate means of gathering information for assessment depends primarily on the fit between the content of the test and the learning it is meant to assess. In some cases, the learning goals (which, as noted above, should be the first priority in assessment) can be meaningfully assessed by a standardized test. In other words, there may be a test that matches the learning goals, in that it adequately assesses those goals and does not include additional, unrelated goals. In that case, use of a standardized test could, under the right circumstances, make sense.

Another important consideration in standardized testing is the logistics of test administration. Faculty should be cognizant of how the testing might be perceived by students. If it is perceived as an extraneous exercise unrelated to their coursework or degree completion, their motivation to perform well might be affected. Test results, then, are unrepresentative of the actual classroom performance and learning. On the other hand, if a standardized test can be administered in a way that the results are important to the students – e.g., it will become part of a grade in a course – it may provide valuable information about student learning.

Don't we have to make changes in our curriculum in order to prove that we really did assess student learning?

As noted above, assessment is a process, whereby we ask three questions. What are students meant to be learning in this program? What information can we collect to determine if that learning is occurring? What decisions do we make about our program as we review that information? Obviously, continuous improvement of a program is an important reason to assess student learning. And change may be called for after faculty review information collected about learning goals. Faculty may decide to add courses, delete courses, change the way a course is taught, change the sequencing of courses, change course prerequisites, etc., after reviewing and discussing information collected in assessment.

There may be times when faculty review the information collected about learning goals and conclude that the program is accomplishing what it is meant to accomplish. In that case, arbitrarily changing something is contrary to the real purpose of assessment. The idea is not change merely for the sake of change, but engaging in assessment on an ongoing basis. This proved to be a big relief to faculty from several different programs on the author's campus. In each case, the program faculty had systematically identified appropriate learning goals and had collected information about whether those learning goals were being achieved. Though they concluded that the goals had, indeed, been achieved, they felt that they had somehow failed in the assessment process because they had decided not to change anything in their respective programs. Not only had they not failed; their efforts represented the essence of assessment. As Walvoord (2004) points out, the ultimate value of assessment comes from "closing the loop."

We'd like to do more for assessment, but we don't have the resources.

This is a common, ongoing concern and, in view of the budgetary crises affecting many universities in the United States, is often a reflection of a lack of administrative resources. In many programs, faculty express the wish to use multiple sources of information in their assessment efforts, including surveys of alumni, focus groups with alumni and other important stakeholders such as area employers, standardized testing

where appropriate, etc. Using multiple sources of information in assessment is widely recommended by assessment experts (cf., Angelo & Cross, 1993). Often, however, faculty are concerned that they lack the time, expertise, and/or administrative support for such activities.

Ideally, this concern can be addressed by making assessment a high priority in terms of university resources. Availability of funds for activities such as alumni surveys or focus groups with outside stakeholders will allow collection of information from multiple sources. It is also important to ensure that expert support for assessment is available internally. For example, it may be helpful to identify key individuals on campus who will receive specialized training in assessment and who can then take that training and expertise back to their institutions to assist faculty from various programs in their own assessment efforts. This internal expertise can be especially important for assessment activities such as surveys or focus groups. In the author's experience, faculty often feel that they themselves are not adequately trained for such activities. Therefore, the ready availability of experts who do have appropriate training would allow faculty to focus on their own role in assessment.

Another potential solution to the challenge of scant resources is to leverage available technology where possible. For example, one program at the author's university designed a web-based system for managing assessment data. In this case, the D2L – Desire-to-Learn – package was used. This package is widely available and in fact is already in use at many campuses as a teaching tool.

Why should we do this? What's in it for us?

This is a common and very understandable question, especially if faculty view assessment of student learning as simply another chore in addition to the existing demands of teaching, research, and service. There are multiple ways to address this concern. The simplest is to communicate regularly with faculty so they are encouraged to engage in assessment and rewarded for doing so. On the author's campus, we developed a very simple way to do this. Each academic year, the Director of Assessment and the appropriate dean select approximately a dozen different programs for assessment visits. At these visits, the program faculty discuss their assessment efforts, including the learning outcomes and how they were identified, information collected about those outcomes, and any decisions that have been made about the program as a result. These meetings allow the university to closely monitor assessment efforts. They also provide an opportunity for faculty to raise questions and concerns about assessment.

Another response to this concern is to continually educate faculty about the benefits of assessment for ongoing improvement of their program. It should not be viewed as something done only to satisfy external stakeholders such as accrediting agencies. Likewise, it need not be viewed as simply another burden dreamed up by administrators. Regardless of the presence of accrediting agencies or the demands made by administrators, systematically assessing learning is valuable in its own right. Here again, regular communication with program faculty is essential. On the author's campus, regular assessment forums are scheduled, where faculty from all disciplines are invited to participate to discuss issues related to assessment. Also, the university maintains an assessment "resource room," which houses literature on assessment, samples of assessment plans, Internet resources, etc.

Finally, it is important for administrators to formally acknowledge the efforts made by faculty in assessment. Certainly, the process works best when multiple stakeholders in an institution are actively involved. Ultimately, however, much of what is valuable about the assessment process comes directly from faculty. They typically have a great deal of input into identifying appropriate learning goals, and as noted above, determining what a program is meant to accomplish is at the heart of the assessment process.

In addition, faculty on many campuses are largely responsible for collecting the information that will help answer the question of whether the learning goals are being met. On the author's campus, assessment efforts have become part of the university's administrative and reward structure. At the university level, information about assessment of learning is considered in resource allocation decisions. For example, if a program requests additional faculty, a university-level committee considers that program's assessment efforts as part of making a decision. Also, an individual faculty member's contribution to assessment efforts for his/her respective program is formally reviewed during the biannual merit review process to ensure that faculty are evaluated partially on their assessment efforts.

Conclusion

In sum, careful, systematic assessment of student learning is essential in determining whether a university's core mission is being accomplished. Braathen and Robles (2000) contend that, rather than view assessment as something done to instructors or to students, it should be viewed as a vital component of effective instruction. Although such assessment can create numerous challenges, these challenges can often be addressed by careful communication, adequate resources, and overall administrative support. Given the potential value of a viable assessment program, it is worth understanding and confronting these challenges.

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Peer Assessment and Role Play: A Winning Alliance

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Introduction

Good faculty members are constantly seeking ways to both involve students in classes and increase learning. Long lectures can be boring for students, and studies consistently show that discussion-oriented teaching methods result in increased student engagement and learning. Role play, or simulation, is an established teaching methodology that has been used in education for many years (Bernstein, Scheerhorn, & Ritter, 2002; Taylor & Walford, 1978; Van Ments, 1983). It is viewed as a particularly powerful strategy because it can create learning experiences that are varied and realistic. In role play situations, students are active participants rather than passive observers. Participants must make decisions, solve problems, and react to the results of their decisions. Collier (1998, 2000) has written about the emotional experience for the student and the increased learning as a result of this level of participation.

With the recent increased emphasis on assessment in higher education, a logical extension of using role play or simulation as a teaching method is to use it as an evaluation of student learning. However, a drawback to using it as an assessment tool is the extensive amount of time that is required for the faculty member to review and appraise the performance of each student (Bernstein, Scheerhorn, & Ritter, 2002). Peer assessment as a method to evaluate student performance has increased substantially over recent years as a way to reduce faculty time, and some studies have reported that it can increase the understanding of students conducting the assessment as well (Bangert, 2003). Peer assessment typically involves students exchanging assignments and providing feedback to their peers through the use of rating scales or checklists (Airisian, 1996; Topping & Ehly, 1998). This technique has been used to evaluate student performance in a wide variety of disciplines such as psychology (Haaga, 1993), mathematics (Bangert, 2003; Earl, 1986), biology (Falchikov, 1986), geography (Mowl & Pain, 1995), and computer science (Marcoulides & Simkin, 1991). The project described in this paper combined role play and peer assessment into one assignment used in an education course.

Peer Assessment to Evaluate Role Play

The purpose of the project/assignment described in this paper was to explore the use of peer assessment to evaluate role play in a graduate level higher education administration course. By using peer assessment, I hoped to increase the feasibility and benefit of using role play as an assessment instrument in the classroom. This paper describes the assignment, feedback from students about the value of the project, and lessons learned, and then provides recommendations that faculty can use to implement this technique in their own classes. Feedback from the students was obtained through a written questionnaire completed immediately at the end of the activity.

Description of the Project/Assignment

As a faculty member in an Adult and Higher Education Graduate Program in a 4-year institution located in a rural environment, I decided that our program would provide a good arena to explore combining role play and peer assessment. Students are typically

nontraditional age with job experience, and some travel distances of over 100 miles to take courses in the program. Most courses are taught in 3-hour evening time periods or in a weekend format. The assignment was used in “Resource and Program Management,” a required course for students in the program, and a variety of topics are covered throughout the semester. Managing human resources is an area of emphasis, and students are presented with principles of listening and communication skills. As an active learning activity, students are given an exercise designed for practicing communication skills as a manager or supervisor in a role play situation. In the past, students were divided into groups of three and asked to practice a scenario involving an employee with problems on the job. One student acted as the manager, another as the employee experiencing difficulty on the job, and the third student was an observer of the role play. Sessions were video taped and reviewed by each group, and then the experience was discussed as a class. No grade was given to the students.

While students reported learning from the practice sessions, I sought to use the simulations as an assessment of student learning of the listening and communication skills presented in class. In an attempt to convert the activity to an assessment technique, in subsequent semesters I tried grading the role play of each student. However, reviewing and evaluating each tape for a grade was found to be too time intensive to be feasible. A review of literature describing the successful use of peer evaluation to assess student learning motivated me to combine the two into one assessment activity. The role play assignment was first used during the spring semester of 2004. Revisions were made to the assignment based upon student reports and my own evaluation of it, and the assignment was given again during the spring semester of 2005.

To begin the project, students were divided into groups of three and given a five-page handout containing all the material needed to complete the assignment. The cover sheet described the activity in detail and delineated how the project was to be graded. The remaining pages included the observer assessment sheet, the self-assessment sheet, the role play scenarios, and, finally, the student evaluation of the project.

The directions explained that one person in each group was to be the manager, another the employee, and the third the observer and time keeper. The person acting as the manager was to practice the listening and communication skills discussed in class in response to the scenarios acted out by the employee. The observer was to take notes during the role play, lead a critique of the session during a replay of the taped session, and complete the observer assessment sheet. The role of each student rotated so that each individual had the opportunity to be a manager, employee, and observer. Students were instructed that each role play was to last a minimum of 5 minutes and a maximum of 8 minutes.

Fifty percent of students’ grades was derived from their performance as managers, and 50% was based on their observer roles. The manager portion of the grade was determined by both the actual acting out of this role and the self-assessment. In other words, if a student was dissatisfied with her performance in the role play, she could write up what it would take to improve her performance, and this assessment would be factored into her “manager” grade. The observer role was graded in order to motivate students to give serious and quality feedback. It was also hoped that students would learn how to improve their own behavior by critiquing others.

The observer form was a one-page sheet containing a column that listed each desired behavior (e.g., creating a positive atmosphere, paraphrasing, using open-ended questions, probing statements to encourage additional information, etc.). To the left of each desired behavior were four columns that described various levels of performance exhibited for each behavior. Rather than providing a likert numerical rating, each column provided a short description of the behavior in a rubric style, such as “creates positive atmosphere by beginning with friendly small talk,” “begins session in a friendly manner with the business at hand,” “begins session with business at hand in a condescending manner,” and so forth. During the session and after the group critique, the observer circled the words that best described the behavior of the manager. At the bottom of the page was a space where observers were asked to provide examples of statements made by the manager during the role play. Also, the observer was asked to describe the primary “plus” of the interview as well as a “wish.” This feedback structure was designed to keep critiques constructive and to create a positive experience for students.

The manager self-assessment sheet asked the manager to describe “what I did that was a plus” and “my wishes for another time.” Students were required to list at least two pluses and one wish so that they were forced to identify positive aspects of their behavior. Three distinct scenarios were provided for each group, and from these, students were to choose one to use for each role play; alternatively, they were allowed to create their own scenario of a similar nature. The scenarios that were provided were based upon real-life experiences of the author in previous administrative positions.

The evaluation form was a survey that asked for student feedback about the project itself. Students were asked to rate eight statements using a 5-category likert scale of “Strongly agree,” “Agree,” “Neutral,” “Disagree,” and “Strongly disagree.” The eight statements included the following assertions: “This activity helped me to practice the listening skills discussed in class,” “this activity helped me to improve my listening skills by practicing them,” “this activity should be used in future classes,” and “the observer sheet worked well in assessing how I did.” The student evaluation sheet was anonymous and was handed in separately from the other sheets that were to be graded.

All sheets and tapes were collected at the end of class. Each tape was then reviewed in conjunction with both the self-assessment sheet and the observer sheet for each student.

Results

Combining peer evaluation and role play resulted in a positive assessment technique that both reduced the amount of faculty time required to grade students and was rated by students as a beneficial learning experience. I spent approximately 10-15 minutes grading each role play. In previous classes with no peer assessments, time spent grading each role play averaged 25 minutes and in some cases even longer. I found that the student observers provided excellent feedback to the student managers and, in many cases, gave much more in-depth information than I had in the past in my grading. The observers focused on the positive aspects of the managers’ behaviors; however, they were not reluctant to offer constructive criticism and ideas for improvement.

The students’ self-assessment of their own role play was thorough and well constructed. They provided specific examples of their “pluses” as well as what they “wished” they had said or done. However, they usually listed more “wishes” than “pluses,” so it was

important to incorporate the group critiques of the session to provide the students with a more complete listing of their positive behaviors.

Student evaluations of the assignment were positive. Likert scores were all in the “agree” or “strongly agree” ratings. All students either “agreed” or “strongly agreed” that the activity should be used in future classes. Specific comments from the students included the following: “I always like to put what I’m learning into practice,” “this was a good way to assess where my current skills are and what areas I need to improve,” “everyone should take this class and do this activity,” and “the critique sessions generated a lot of helpful discussions and gave me ideas that I had not thought about.”

Following are some of the student “wishes” that were expressed: “I wish we could have had the opportunity to do the taping again to see if we could incorporate the group’s feedback into another meeting,” “I think it would have been helpful to tape the critique, as this provided much more feedback on the pluses and wishes section, and then I could have reviewed it later.” Also, feedback from the first semester resulted in the observer sheet being reduced from two pages in length to one.

Lessons Learned and Recommendations

Faculty members in other disciplines can readily adapt this assessment technique to their own content areas. Important considerations and recommendations include the following:

1. Small class size is probably most feasible for this assignment for several reasons. First, since each group requires its own equipment, the number of available recording and replay devices should be determined before incorporating this tool into a class. Second, the noise level in the classroom during the completion of the assignment is considerable. During the first semester that I used the technique, some students reported that the other groups’ discussions were distracting to them. I found it helpful to use additional classrooms to reduce the number of groups in each room. However, making this an outside-of-class assignment could avoid both of these dilemmas. Third, since faculty still need to review each tape in order to maintain some quality control over the peer assessment, larger classes may be too time consuming. I used the assignment for classes with fewer than 20 students, thus minimizing the amount of time spent grading.
2. Time spent setting up the equipment and instructing students must be taken into consideration. I placed the equipment in the room and checked its operation before class began and needed some assistance from our media department in doing this. Students were fairly knowledgeable in the manipulation of traditional video taping and replay equipment; however, as colleges transition to digital recording devices, students may need additional instruction time.
3. Training and practice time to conduct a peer assessment is important. Before the students divided into their groups, I showed them a sample role play tape and asked them to practice completing a peer assessment. This provided them the opportunity to become familiar with the observer sheet and to ask questions.
4. Groups of four are helpful. Because of class size, I divided some groups into four. Students reported that it was helpful to have one person operate the equipment and another person to observe and complete the observer sheet.
5. Students prefer having the role play scenarios provided to them rather than constructing scenes themselves. The first time I made this assignment, I asked

the students to design their own situation to role play. In their evaluations of the project, they asked for the scenarios to be given to them. Subsequently, I wrote scenarios for them based upon my own life experiences.

6. Sufficient time is needed to complete the assignment. Students took approximately 2.5 hours to complete the project. They related finding the critique portion of the assignment very helpful, and they wanted plenty of time for this discussion. In some cases, they asked my opinion about the role play, and I found it helpful to be available to them.
7. Incorporating the role play self-assessment as part of the grade reduces some student anxiety. Students reported that my grading them on their self-assessments as well as on their role play eliminated some of their apprehension about being recorded. Since my objective was for students to learn what is good communication and listening skills, I was comfortable incorporating the self-assessment as part of the grade.
8. Role play tapings should be reviewed by the faculty member. I examined the tape of each role play along with the self-assessment and observer sheet in order to ensure an accurate grade for each student. I made several written comments of my own, marked the grade, and returned the observer sheets to the students.

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Assessment Strategies as Formative Evaluation

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Background

Using writing as an interdisciplinary method of learning and assessing has long been the focus of Writing Across the Curriculum programs. Once exposed to the general philosophies, faculty often find WAC methods logical and compelling ways to enhance student learning in their respective disciplines. Inevitably, the focus turns to assessment, and many faculty are stymied, looking for appropriate ways to evaluate student writing projects. As one study indicates, most writing assessment takes the form of written comments that often serve the rhetorical purpose of justifying the letter grade (Connors and Lunsford). We have all been programmed to think of standard assessment practices as summative evaluations that measure how well instruction has taken place. If we subjectively read student's written projects, write comments, and mark surface-level errors, then we are performing the traditional methods of summative assessment. The problem with this method is that it is part of a top-down, teacher-centered process that does not serve to help students become better writers and better thinkers, nor does it allow students to use their writing as a learning tool.

Moving Away From Standard Assessment

Unfortunately, we cannot do away with grading altogether. We are part of an institutional matrix that requires evaluating student achievement and assigning grades. Since we cannot step out of that role completely, we must alter our perceptions of the process and our reactions to it. At odds with the summative form of evaluation is the current pedagogical constructivist theory which "emphasizes problem solving, critical-thinking skills, engagement, and cooperation" and advocates the process of learning as more important than any of the products we create (Wolcott and Legg 9, italics in original). Brian Huot suggests that such a shift in pedagogy argues for a "new, shared discourse for understanding assessment as a positive force [...]" (165). Finding that shared discourse, however, is often difficult because we have not been trained to assess a process. Most of our training and understanding of assessment stems from a background where assessment functions as a final evaluation. However, in a new framework of learning which values the learning process, we are challenged to "develop valid performance assessments that capture these processes, and at the same time, allow generalizations to be drawn about students' understanding of a broad subject area" (Wolcott and Legg 9). Thus, assessment should be thought of in two ways: as formative evaluation that allows for improved instruction while learning is still taking place, and as performance assessment that allows students to demonstrate their knowledge through the actual performance of their abilities (Wolcott and Legg 4-5).

Additionally, assessment must take into consideration the recursive nature of the writing process and expound on the philosophy of writing to learn strategies. If we want to improve assessment, we must do it by shifting the philosophy of our grading. We do not want to get our students used to having somebody "fix" their papers or find their errors. We want students to be able to revise their writing based on comments that we make that would prompt revision, rather than justifying the grade we place. In essence, it becomes the difference between "grading" a set of papers and "responding"

to a set of papers (Bean 242). More than semantic choices, these are actually two competing philosophies. The first, an editing-orientation, would produce a marked paper with errors identified. On the other hand, a revision-oriented philosophy “concentrates on ideas and structure with the aim of evoking a revised draft exhibiting greater complexity and sophistication of thought” (Bean 68). Without the shift to revision-oriented philosophy, we can expect students to continue their erroneous thinking that writing is about supplying the correct answer rather than about employing intellectual thought (Bean 18). Given the assumption that writing is linked to thinking, using the editing-orientation condemns students to depend on others to see what improvements their thinking needs. Students need to be taught that writing is a means to an end; they need to be able to see what improvements they can make on their own. Thus, we must make students a part of the process, make them responsible for what they write, and more importantly, make them a part of the assessment process as well. This is a huge leap away from the traditional teacher-centered evaluation methods. What we need is a defining theory—a way to rethink our roles in the process. Liberatory pedagogy allows such a shift.

Liberatory Pedagogy

Also known as critical pedagogy or problem-posing education, this learning philosophy stems from Paulo Freire’s argument against the banking method of education in his seminal work, *Pedagogy of the Oppressed*. His banking analogy suggests that students’ brains are mere repositories for the wealth that teachers will deposit, until the teacher comes to make a withdrawal through a test or written response. Obviously, the teacher could expect to receive only what she has put in. The result, then, is that students are passive participants in their learning (Freire 52-67). That is an alarming thought—that one person would be responsible for making sure that every worthwhile thought related to a discipline is deposited into a student’s head. While we may agree that banking is not a valid pedagogy, if we scrutinize our assessment methods, we might readily see that many of our grading approaches stem from this banking philosophy and undermine any student-centered practices we may accept.

Building on Freire’s condemnation of the banking method, Ira Shor identifies the traditional zero paradigm, in which “knowledge and power are fixed from above, not negotiated or discovered from below,” (200) and the teacher serves as a delivery system to transfer knowledge. This method can do little more than remove students from the learning process “because knowledge comes at them in a one-way discourse [where] they have little need to interact with the teacher, with each other, or with the material” (201). He argues, instead, for the critical paradigm which acknowledges that “teachers and students are complex people in a position to make or detail transformative learning,” (201) and who each know things the other must learn. Acknowledging students’ cultural identities as more than hierarchical determinants, the critical paradigm “respects the knowledge, experience, and language of the students. It does not mythologize them as deficits. The first responsibility of critical teachers is to research what students, know, speak, experience, and feel as starting points[...].” (202) for their interactions with students in the classroom. This does not mean, however, that the teacher does not have a role in delivering information to the student. But rather than spoon feeding her own interpretations into the waiting minds of passive students, the teacher bears the responsibility for coordination and at times direction in the dialogic process.

Shifting Perspectives in Assessment

Our struggle now is to escape from traditional assessment methods and to develop methods that allow students to be as actively engaged in the assessment portion of the

classroom activity as they are in the other portions. The value of critical pedagogy's perspective is that it is an ethical response to the issue of assessment and one that acknowledges the respect of each participant in the learning process. In general, when we evaluate papers, we decide which ones have met certain criteria and thus deserve a "good" evaluation. However, "good" is too vague a concept to offer any real direction. Olympia Sibley, a composition instructor at a major research university, suggests that this slippery term can best be defined as "what is responsible." In evaluating papers, she leans on the belief that her response to students' writing must be responsible to their needs as students. So in our situation of attempting to implement critical pedagogy in our assessment practices, we can define acting responsibly as taking the time to ensure that writing evaluation is part of the learning cycle. We must extend the belief that the learning cycle does not end when students turn their papers in for grading.

Thus, another shift in perception is needed that allows for an action-oriented perspective of purpose. As Joan Wink asserts, students have to be able to take risks and teachers must shift their model from one that controls knowledge to one that allows students to take ownership of their learning and take the risks necessary to be able to apply their knowledge (123). Linking this audience-centered approach to assessment helps us keep in mind that our evaluative remarks on a paper need to have an action-oriented purpose. If we mark a passage on a page, it must be an active comment, perhaps one that requires the student to answer a question or one that provokes a response, not one points out a weakness. Research on the nature of teacher comments on student writing found that the more dialogic and formative the feedback, the better the written product ultimately treats the subject matter (Straub and Lunsford xiii). Thus, if we expect students to learn from the material they have created, we have to give them the opportunity to assess that material from the perspective of formative feedback. We must adopt an interactive approach that does not exalt our accumulated reading and writing experiences and condemn the ignorance of students.

From a course management perspective, teachers will find adopting a more critical approach in our pedagogy:

- takes the onus away from the instructor to always be the person who has to supply the information. Critical pedagogy allows for more substantive interaction with the course content.
- puts the responsibility back where it belongs, on the students. Teachers are available to serve as facilitators for learning and students are unable to sit back to simply assimilate information. When students are helping to shape class content, they must become more active. At first students may resist as they are mired in a system that has traditionally placed teachers as fountains of knowledge and students as receivers; however, once the initial discomfort of having to participate is overcome, students enjoy finding their own way through the content.
- serves to teach more than just course content. Active participation helps develop thinking and communication skills.
- moves our role from one of transmission to one of facilitation—a better place to be for enjoying course content.
- builds on the notions of the social construction of knowledge and of collaborative learning communities (see, for example, Bruffee; Weiss).

How to Link Assessment to Critical Practices

Without too much shift in the way courses are framed, faculty can institute practices that reflect a student-centered, critical perspective, which ultimately lead to the ability to use critical assessment techniques. It begins with making students responsible for their learning from the first day the class meets. Syllabi should list specific learning activities, the purpose of the activities, and the due dates. When students are given this

information on the first day of class, they can schedule their personal lives around their lives as members of the class. Structure each session so that students must prepare themselves for each class session, participate in that session, or risk being left behind.

It is also important to give detailed explanation of projects before they are due. Make sure the students know the learning objective and supply them with enough models so that they may see what constitutes an effective final product. However, faculty should not define the criteria for assessment. Students should analyze models to figure out why they are or are not representative of good work; thus, students develop their own criteria for evaluation. After they see the models, they should be able to collectively quantify the characteristics and appropriate them for their own uses. Using guided invention strategies, where faculty guide students through a brainstorming session, students typically create the same criteria faculty desire. Through the guided invention process, students will have a sense of ownership in the criteria being used for evaluation. When they create the characteristics of a good final product, they are much more likely to include those characteristics in their own writing project.

Another important component is to rely on peer evaluations and assess student writing only after it has been through at least one cycle. Keep in mind, however, that students need to be taught how to evaluate; they must know that they are not copyeditors but that they are measuring each other's work based on the criteria they have selected as appropriate. Students have to be convinced they are knowledgeable enough to evaluate. Most often, they understand it after practicing a few times. Students should also be required to include reflection letters or memos as part of their projects, as suggested by Freire's notion of action and reflection. Expect a brief written analysis of how students think they performed on the task. Encourage them to provide any information, such as difficulties they encountered, which may be helpful for the instructor to know as he or she begins assessing the project. Often, students know when they have not done what has been asked of them. They understand how their work did or did not measure up to the criteria they set for themselves. Requiring reflection also helps students make those necessary connections to the activity and the course content—another writing to learn strategy.

If any one revision in our writing/assessing activity is paramount, it is the notion that we give students time to use their writing skills. If we believe writing through a process approach builds the quality of writing, we must give students an opportunity to use that process. Do not ask them to use writing in a false situation, such as timed written exams. Essays written outside of class will include better content and will reflect the links between writing and learning that we are teaching our students to value. Ultimately, we will be receiving a culmination of student learning rather than what information remained in their heads as they entered the classroom. Making the assignments as specific as possible and using plagiarism detection software, such as that available at Turnitin.com, can help alleviate the possibility of students not doing their own writing. Tying the writing assignment to specific classroom activities and topics of discussion helps to assure that the exam topic does not exist on Internet paper sites.

Benefits

Students react favorably to this shift to critical practices and critical assessment, as research (see Bean, Shor, Straub and Lunsford, and Wolcott and Legg) and personal experience support. In end-of-term reflective responses students acknowledge that they feel their writing has improved, that they feel better prepared to apply their skills to other courses, and that the class had added value as they became more active

participants in the entire process. Although they might have initially been reluctant or intimidated by the new process, students indicate that they enjoy the active role and feel they have more power over their learning. In my own classes I have found that students who know what the assignment is supposed to teach and how their writing should reflect that new knowledge will produce higher quality writing, making it easier to focus on the global issue of content instead of being dragged down by surface errors. Ultimately, the grading becomes easier and I do not see as many of those hastily-created first drafts handed in at deadline thinly disguised as final drafts. Since assessment is no longer focused on the punitive, negative nature of the task, grading writing becomes a happier experience.

Conclusion

This paper argues for a shift away from traditional strategies of summative evaluation toward the more responsive role of formative assessment. Using liberatory pedagogy as a supporting theory, faculty can create a dialogue through their assessment techniques that allow students to retain an active role in their learning and writing processes—a role that does not rely on faculty to provide the right answer. This method of assessment supports current critical theories and supports a more active classroom environment, one that does not undercut the value of students’ thinking and learning. Using formative assessment techniques as part of a student-centered classroom helps to move the instructor’s role from one of final arbiter to one of a facilitator, which in turn helps make students more responsible for their own learning.

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Self-Grading for Formative Assessment in PBL

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Why formative assessment?

As educators we continually ask ourselves

- How do we know our students are learning?
- How do we know they are thinking critically?
- How can we follow their patterns of thought?

But the more important questions are:

- How do they know they are learning?
- How do they know they are thinking critically?
- How can they reflect on their patterns of thought?

Background

For nearly a quarter century I taught, discussed, assigned, assessed, and graded, in some order or another. I hoped and expected that students would read and reflect on all those comments and thought-provoking questions I so meticulously wrote on their homework and tests. As I learned to give more authentic assignments, I realized that much of what we (I) had taken for learning was really patterning. If I can be allowed to oversimplify, the best student's expectation would be, "Give me an example of how to think and do and I'll think and do like you." Students seldom evidenced their own ideas except during our Socratic questioning sessions, sessions in which formative peer- and self-assessment were part and parcel.

In the years 1991 to 1993, I had two sets of experiences that changed the way I teach. First I tried piloting a middle grades statistics book in a semester-long course for eighth graders. The only way I found to reach these students was through active learning and projects. Although some months passed before I learned to call what we were doing "problem-based learning" (PBL), the technique produced a deeper learning than even I had anticipated. After I left the middle school to return to the university, some of these students, working alone and without benefit of an advisor, produced a project which won the American Statistical Association's 1992 national project competition.

The second experience was teaching in a three-year program called Partnership for Excellence in which we modeled progressive techniques for in-service teachers. We attempted activity-based learning, guided discovery, cooperative learning -- every promising technique we could find or think up; and we used technology wherever possible. What seemed to work best, as evidenced by participants' test scores and opinion polls, were the activity-based strategies.

Informed by these two experiences, some of us on the mathematics faculty at the University of South Carolina Spartanburg (currently named the University of South Carolina Upstate) fashioned a problem-based version of our College Mathematics course for liberal arts majors. We began teaching the PBL version in 1995.

The problem

Our work began as a response to the realization that most of the students entering our math classes were and are products of pedagogical styles that depend on learning

algorithms, i.e. patterning, in order to be successful. (Ulmer, 1994; Kamii & Dominick, 1998; Cavanaugh, 2006) They bring with them no expectation that self-initiated thinking should be a characteristic of learning. There may be several reasons for this, including the following possibilities.

- Textbook dependence. One finding of the Third International Mathematics and Science Study (TIMSS) was the inclination of US grade school teachers to spend disproportionate class time using textbooks compared to such countries as Japan and Germany. Mathematics instruction in those countries was found to be more successful than in US schools (Peak, 1996). Although a decade has passed since TIMSS, the concern over textbook dependence has not (Mueller & Bentley, 2005; Goodlad, 2006).
- Out-of-context instruction. Mathematics instruction has, for some decades, been governed by a curriculum in which topics were included on the basis of their consistency with other topics. Applicability, a criterion deemed important by most students, has seldom been a consideration for those writing high school and college math books. (When have you factored a quadratic polynomial, rationalized a denominator, or used the FOIL method as part of solving a real problem? Problems I encountered in my earlier work as a laboratory statistician and in more recent work as an operations research and mathematics consultant bore little resemblance to those in the textbooks from which I taught.)
- Repeated curriculum. The seventh grade textbook had the same topics as the eighth grade textbook, which was much like the ninth grade textbook... There is the pattern again! This systemic problem has prompted the Committee on the Undergraduate Program in Mathematics of the Mathematical Association of America to recommend replacing the traditional college algebra course with one of several courses that break the pattern (MAA, 2004; Ganter & Barker, 2004). The recommendation has not yet been implemented at most institutions.

To encourage learner-initiated thinking, we decided to design the course without constructs that promote the patterning found in traditional courses. The problem-based version of College Mathematics at USCS used no required textbook. Instead, a packet of activities and project assignments accompanied a forty-two-page booklet designed to add structure to the course. The booklet contained too few textbook-style problems to support the faculty member who wished to spend class time in drill, practice and patterning. Fewer problems were worked than in the text-based version of the course, but, as other educators using active learning and PBL have found, "students appear to emerge with a greater store of usable knowledge" (Moore, 1997). Our in-course and subsequent performance assessment data supported that statement. We collected success-rate data from the fifty-five problem-based sections and thirty-nine textbook-based sections taught through Spring 2001. With "success" defined as making a grade of D or better (so a grade of F or a withdrawal is classified as "failure") we found the following: Students succeeded at a much higher rate (median = 75%) in the PBL version than in the text-based version (median = 53%) and those who took statistics the next semester succeeded there at a higher rate. For more detailed data, see <http://faculty.uscupstate.edu/mulmer/PBI_Index.shtml>. Only about half of the mathematics faculty members at USCS bought into the idea of PBL. Reasons varied:

- Some did not like the prospect of abandoning texts. This was especially important since our department had several very well respected textbook authors.
- Others did not wish to, or couldn't, give up control of the order, methods and styles of learning to the extent necessary for PBL to work. But most of all,
- PBL presupposes teaching for critical thinking; and so, requires a great deal of formative assessment. And that means a commitment of time and effort that some faculty members cannot or will not devote to the pedagogy.

Critical Thinking and Formative Assessment

Problem-based instruction requires the learner to rely on his or her own thinking (not patterning) in order to begin solutions to problems. The problems themselves call for thinking in order to complete activities and write associated reports. This necessity for thinking allows us as instructors to teach for critical thinking, which we might loosely describe as reflective thinking, or metacognition performed for the purpose of improving the quality of thinking. Early formative assessment activities serve to acclimate the learner to this need for critical thinking.

As an example of my own development toward teaching for critical thinking and the hurdles I encountered, consider one small topic from business calculus: that of distinguishing between the Absolute Rate of Change and the Relative Rate of Change. In days gone by, I asked students to distinguish between these concepts by stating the definitions. Some students, perhaps 30%, succeeded. As I tried to improve my teaching in subsequent terms, I gave a problem where they had to use the definitions to compute absolute and relative growth of some function for a given change in the independent variable such as time. A few more, perhaps 40%, succeeded. Some years later, as benefits of contextual learning became more obvious, I actually gave the following question: "Would the Absolute Growth Rate or the Relative Growth Rate be more important to someone who wants to buy stocks?"

To my delight, half the class got it right. But that delight lasted about as long as it took you, the reader, to recognize that a higher success rate than 50% was needed on a two-response question to indicate that any learning was taking place.

Later, when I got a chance to teach the course again, I began to use writing as a vehicle for promoting critical thinking. I gave the following assignment: "In one-half page or less, explain why the Absolute Growth Rate or the Relative Growth Rate (pick one) would be more important to someone who wants to buy stocks."

Realizing that for assessment to be formative, it must be timely, I graded and returned each submission with comments and tried to incorporate a consideration of common mistakes into a Socratic session. It was extremely time consuming. But even more frustrating was the realization that it was I -- not the intended learners -- who was thinking critically about their work. The students simply stashed my well-chosen comments in a backpack and left for history or psychology class.

The Technique

To provide opportunities for the learners to think about their work and receive timely feedback, I have used a self-grading technique comprised of the following steps:

- o Give an assignment requiring a short well-thought-out written response to a question. I call it a "ticket", indicating that it must be completed for admission to the next class.
- o Once in class, have students put away all books, papers, pencils, pens, etc. - except for their responses to the assignment. Hand out colored pencils for students to use for corrections and modifications to their work.
- o Solicit discussion from students about their perspectives on the assignment. Use Socratic techniques if necessary to steer the conversation. Ask all students to correct or improve their own responses as they evaluate the oral responses of their peers. Require additions or corrections to be made with the colored pencil.
- o Once discussion has revealed correct or reasonable responses, provide a rubric overhead by which the student can assign his or her own grade. Take up the assignment.

- Before next class, review the students' responses and self-reported grades for accuracy and for adherence to the rubric, and make necessary adjustments in a third color of ink. Record scores.

For activity examples with corresponding rubrics, and some additional activities see the course web site given above.

Advantages

Self-grading in this manner has significant advantages over traditional instructor-graded formative assessment. Using the latter, the instructor spends time -- often several hours per assignment -- reading and reflecting on student responses and preparing carefully considered feedback. Ideally, the student then reads the instructor's responses, thinks critically about the comments and prepares an improved version for the instructor to reconsider. When this process works, it requires the instructor to think critically about two submissions per assignment per student. The instructor thus hones his or her critical thinking skills far more than does the student. Impetus for thinking and learning is misplaced.

In my experience, however, instructor grading is even less efficient than this ideal. Students seldom think deeply about feedback they are given and seem quite content to address each instructor comment with a superficial correction. Thus instructor grading guarantees critical thinking only on the part of the instructor. In addition, two class periods are required for each assignment if discussion accompanies return of each draft.

The self-grading technique described above requires only one class period's discussion and appropriately directs the impetus for critical thinking. With self-grading, as with instructor grading, the instructor sees the learner's initial and second responses, but now the two responses are clearly delineated by different colors of ink and are available in only one reading. Additionally, the instructor sees that which the learner gleaned from the Socratic discussion and gets a measure of the learner's level of comprehension from her or his degree of adherence to the rubric. The time the instructor spends reviewing the submissions is significantly reduced since only small adjustments in learner understanding are generally needed.

The learner cannot avoid thinking critically in the process of self-grading. In order to formulate corrections to the initial response, the learner must reflect on the quality of his or her response and determine the degree to which it adheres to the range of possible appropriate responses generated in the Socratic session. Deciding upon and formulating corrections and improvements require additional thinking. When the graded assignment is returned from the instructor, the opportunity to think about the assignment is once again an option but so, too, is the option to stash the assignment in a backpack or portfolio. Fortunately, significant thinking has already been accomplished.

Quality and efficiency of formative assessment are both improved with self-grading as described here. The technique can be used in any disciplinary or multidisciplinary learning environment where writing-to-learn is used as a pedagogical technique. Problem-based learning, one such technique, is sometimes criticized for its propensity to allow too little content coverage. With improved efficiency derived from self-grading, concomitant improvements in content coverage of problem-based learning become realizable, and the complaint that the technique requires too much time becomes less easily supported.

Note

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Validity of the DIBELS Oral Reading Fluency Test

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Introduction

Set in motion by the current amendments to the Individuals with Disabilities Education Act to start using a Response to Intervention approach in schools there exists a great need to select valid and reliable measures used to gauge student progress. Several products have come on the market but little research exists looking at the validity of these measures. This article looks at the validity of a specific curriculum based measure, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (Good & Kaminski, 2003).

The response to intervention model uses measurement to determine the degree of a students' response to the present intervention. Decisions to either intensify modify, or change interventions are based on evidence rather than teacher report (Gresham, 2004). One problem with the current method of special education assessment is that children are not identified as having disabilities until they are functioning well below their age-peers (Good, Gruba, & Kaminski, 2004). With response to intervention, students are tested early and when the students' difficulties are identified, interventions are put into place before the student falls too far behind. These interventions are continually measured to ensure the student is making progress. In current special education practice, the student's case is typically only reviewed annually and rarely are changes made in the middle of that period. Thus, unnecessary achievement and skill disparities take root.

Reading has been a focus of response to intervention. Reading is essential to performing well in life and children who develop poor reading skills are more likely to have academic and behavioral problems (Schenk, Fitzsimmons, Bullard, Taylor, & Satz, 1980). In order to guarantee a solid measure of student ability, the curriculum based measurement needs to be reliable, valid, and have the ability to be repeated several times over a short time interval. These measures are used both to identify a child's academic weaknesses and to measure the effectiveness of the intervention. Three of the more popular curriculum based measures for reading are Mastery Measurement (Deno, 1985), Curriculum-Based Measurement (Fuchs & Deno, 1992), and the Dynamic Indicators of Basic Early Literacy Skills (Good & Kaminski, 2003). There are many positive and negative aspects regarding these three different methods. However, the focus of this article will be on the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency subtest. This test was chosen because of the recent increase in interest in this measure among schools. The Dynamic Indicators of Basic Early Literacy Skills website reports this subtest will be used with over 970,000 students this year ("Dynamic Measurement Group: Home of Dynamic Indicators of Basic Early Literacy Skills Training", n.d.).

Adams (1990) held the most salient characteristic of skillful reading is the speed with which text is reproduced into spoken language. Many believe that oral reading fluency is the best indicator of reading competence because reading fluency is a direct measure of phonological segmentation and rapid word recognition (Fuchs, Fuchs, & Hosp, 2001;

Fuchs, Fuchs, & Maxwell, 1988; Marston, 1989). Fuchs et al. (1988) found that oral reading fluency was highly correlated with other measures of reading comprehension.

The Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test is a standardized test of reading fluency with connected text (Good & Kaminski, 2003). This test is used to identify children in need of additional assessment and intervention and can be used to monitor progress. It consists of the student reading two passages, each for one minute, while the examiner records what words the student does not read correctly. It takes less than four minutes to administer and score the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test. The Dynamic Indicators of Basic Early Literacy Skills manual reports test-retest reliabilities for elementary students ranged from .92 to .90. Criterion-related validity greatly varied in coefficients ranging from .52 to .91 (Good & Jefferson, 1988). Since the literature has found that oral reading fluency is a good indicator of reading competence overall, this score should give a sound brief indication of how well a student is doing in the area of reading (Fuchs et al., 1988; 2001; Marston, 1989).

The purpose of this study is to investigate the test-retest reliability, concurrent validity, and the construct validity of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test.

Test-retest reliability refers to the ability of a test to produce scores at one point in time and produce similar scores at a later point in time (Bordens & Abbot, 2006; Gregory, 2004). For instance in this study, the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test will produce a fluency score at the beginning of a semester and should produce a similar score after in the future. Concurrent validity refers to the ability of one test to be highly related to another measure. In the case of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test, this study compared this test score and the scores from the Letter-Identification, Reading Fluency, Passage Comprehension subtests and the Broad Reading score from the Woodcock-Johnson Test of Academic Achievement (Woodcock, McGrew, & Mather, 2001) for students with and without learning disabilities.

Bordens and Abbot (2005) defined construct validity as the ability of a test to measure an indirectly observable theoretical construct. For instance, the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test is designed to identify children in need of additional assessment and intervention (i.e., the theoretical construct). The Dynamic Indicators of Basic Early Literacy Skills manual (Good & Kaminski, 2003) offers cut-off scores to determine if a student needs extra or intensive interventions. This study looked at how well the cut-off scores identified children with a reading problem. More specifically a comparison was made on whether these cut-off scores discriminated between students with an identified learning disability and children without. In addition, because states differ on their criteria for diagnosing a learning disability, this study examined if cut-off scores consistently identified students that obtained a standard score of 85 or below on the Woodcock-Johnson Test of Achievement Broad Reading subtest. A standard score of 85 or below is indicative of a student that reads in the below average range. To summarize, this study examined whether the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency test revealed high test-retest validity, high concurrent validity when compared to the reading subtests of the Woodcock-Johnson Test of Academic Achievement, and good construct validity in discriminating between those with a reading problem and those without a reading problem.

Methods

Participants consisted of students from a school district in a western state. Students were sampled from two populations. Fifty-seven learning disabled students were randomly selected from

students with reading disabilities from five separate schools. Seventy percent of the learning disabled students were males and 30 % of the learning disabled students were female. The sample consisted of 26 fifth grade students, 14 fourth grade students, 14 third grade students, and 3 second grade students. The average age of these students was 10 years, 0 months. Thirty-three non-learning disabled students were randomly selected from five separate schools. Fifty-five percent of the non-learning disabled students were males and 45 % of these students were female. This sample consisted of 13 fifth grade students, 8 fourth grade students, 11 third grade students, and 1 second grade student. The average age of students was 9 years, 9 months. According to the western state statutes, learning disabled students had to display a discrepancy between their ability and achievement in the area of reading.

Assessments

The Woodcock-Johnson Test of Academic Achievement. Only the three subtests that compose the reading scales were included in this study. This included the Letter-Word Identification, Passage Comprehension, and the Reading Fluency subtests. The Letter-word Identification subtest measures a student's phonetic ability. The Passage Comprehension subtest measures a student's ability to understand what they read. The Reading Fluency subtest gives a measure of the reading rate or reading fluency of the student. These three scores combine to form the Broad Reading Score. This score was also used in the comparisons. This test includes two versions (A & B). In this study, students received both A and B versions (Woodcock et al. 2001).

Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test. This test is a standardized test of reading fluency with connected text. The Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test is used to identify children in need of additional assessment and intervention and can be used to monitor progress. It consists of the student reading two passages, each for one minute, while the examiner records what words the students does not read correctly. If a student fails to say a word within 3 seconds, the word is supplied by the examiner and marked incorrect. The student is then given a score of how many words they were accurately able to read (Good & Kaminski, 2003).

Procedure

Testing day 1. Students were first administered the Woodcock-Johnson Test of Academic Achievement (2001) and the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test (Good & Kaminski, 2003). Testing took place during the beginning of the second half of the school year. Administration of the Woodcock-Johnson Test of Academic Achievement reading subtests took approximately 30 minutes, while administration of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test took less than 4 minutes. Either licensed school psychologists or intern students that were supervised by psychologists administered the tests.

Testing day 2. Six months following testing day 1, students were administered version B of the Woodcock-Johnson Test of Academic Achievement and a second administration of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test.

Results

Test-Retest

To assess the test-retest of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test, a simple linear regression was used. Both learning disabled and non-learning disabled students received the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test at the beginning of the semester then again at the end of the semester. This analysis tests the assumption that the initial testing of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test will predict a second testing (all data were prescreened for outliers, linearity, normality, and homoscedasticity as recommended by Mertler and Vannatta

(2002) and no violations of these assumptions were found.) The model significantly predicted scores on the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test, the regression coefficient equals to .912 and the adjusted regression coefficient equals to .911, the F value (1, 89) equaled to 911.62, therefore the p value was less than .001. The combined mean for the first test administration was 69.04 and the standard deviation was 34.738. The combined mean for the second administration was 81.3 and the standard deviation was 35.54.

Concurrent Validity

In order to analyze whether the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test has concurrent validity a bivariate correlation was conducted on the dependent variables of Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency test, Woodcock-Johnson Test of Academic Achievement Broad Reading test, Letter-Word Identification test, Reading Fluency test, and Passage Comprehension test (see Table 1 for means and standard deviations). The Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency score was converted to a standard Z-score to ensure standardization of scores across all age groups. These scores were significantly positively correlated with each of the four Woodcock-Johnson Test of Academic Achievement Reading Subtests (p was less than .01). Refer to Table 2 for correlation matrix of all measures.

Construct Validity

Two analyses that test the construct validity of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test were performed. First, to test the ability of this measure to identify learning disabled and non-learning disabled students, students were classified as learning disabled or non-learning disabled by the state and then students were classified as being at-risk or not-at risk based on whether their score was below or above the cut-off indicated in the manual (Good & Kaminski, 2003). Cutoff levels for at-risk students vary with grade level. These cutoff scores are reproduced in Table 3.

A Chi-Square for Independence was calculated on this data, in order to test whether the distribution of students classified as learning disabled or non-learning disabled was dependent on whether they were classified as at-risk or not-at-risk. This test yielded a chi square of 58.69 (degrees of freedom equals to 1), which was significant (critical two-tailed chi square equals to 10.83, alpha equals to .001). An effect size was calculated for this statistic using Cramer's Phi, which was 0.81. Cohen (1988) interprets Cramer's Phi as .10 is a small effect, .30 is a medium effect size and .50 is a large effect size. Thus, the effect size for this statistic is large. Therefore, whether a student is classified as learning disabled is dependent on whether they are classified as at-risk on the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test score (see Table 4 for contingency table).

A second measure of construct validity, tested the ability of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test to identify students as either below average readers or average and above. Students were classified as below average or average to above readers based on whether their standard score on the Broad Reading Score of the Woodcock-Johnson Test of Academic Achievement was 85 or below (for the below average) or above 85 (average and above). The students were classified as being at-risk or not-at-risk based on whether their score was below or above the cut-off indicated in the manual (Good & Kaminski, 2003). Refer to Table 3 for these cutoff levels for each grade level. In order to test whether the distribution of students classified as below average or average to above average readers is dependent on whether they were classified as at-risk or not-at-risk a chi square for independence was calculated. This test yielded an chi square of 42.27 (degrees of freedom equal to 1), which was significant (critical two-tailed chi square equal to 10.83, alpha equal to .001, Cramer's Phi equal to .69, large effect size). Thus, whether a student is classified as a below average reader is dependent on whether they are classified as at-risk on the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test (see Table 5 for a contingency table of this data).

Conclusions

The test-retest of the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test offers evidence that the test possesses solid test-retest reliability. The results found that over time this test continues to accurately measure a person's reading ability. This is an essential quality in an assessment that will be used with response to intervention since this measure needs to be sensitive to changes in reading achievement and it needs to be administered several times.

The results found the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test significantly correlated with all the reading subtests and the Broad Reading score of the Woodcock-Johnson Test of Academic Achievement ranging from .882 to .945. Further, it was found that the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test predicts up to 89% of the variance in the Woodcock-Johnson Test of Academic Achievement scores. Therefore, the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test offers a viable alternative to the Woodcock-Johnson Test of Academic Achievement. One benefit of using this test over the Woodcock-Johnson Test of Academic Achievement is the that it takes under four minutes to give and score where the Woodcock-Johnson Test of Academic Achievement takes over 30 minutes to administer and requires a computer program to score. Accordingly, there is a definite benefit in time. In addition, the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency test can be administered repeatedly where the Woodcock-Johnson Test of Academic Achievement is not designed to be used in this way with the exception of two administrations with the alternate forms. This makes the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test an appropriate and viable choice for measurement in a response to intervention situation.

The observation that the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test correlates so highly with the reading subtests of the Woodcock-Johnson Test of Academic Achievement and takes such a minimal amount of time begs the question why give anything else? Although this test offers a brief assessment of overall ability it really only offers a single score that does not have much explanatory power. The Woodcock-Johnson Test of Academic Achievement offers scores on several different factors that in some cases might elucidate why a student is having difficulty with reading. In addition, the Dynamic Indicators of Basic Early Literacy Skills offers only a raw score and cut-off criteria for whether a person is at-risk. This makes it difficult to compare this score to other assessments. In this study, the score was converted to a z-score for comparisons, but most psychologists would not go through the trouble. However, in the case of response to intervention this measure appears to be the better choice in that it is quick, offers a valid measure of reading, and can be administered repeatedly.

The results of this study also found that the cut-off scores supplied by the Dynamic Indicators of Basic Early Literacy Skills were highly accurate at discriminating between students with and without learning disabilities. This test was able to identify 97% of students with learning disabilities, but identified 18% of students that were not learning disabled as at-risk. It is possible that those students without learning disabilities had some reading problems or some lower reading scores and have not been identified as learning disabled. The criterion for a learning disability in this state requires a discrepancy between intellectual ability and achievement so it is possible the students that were identified by the test did not meet the discrepancy model because of a lower intelligence quotient. The Dynamic Indicators of Basic Early Literacy Skills was very sensitive to students with learning disability yet had some false positives for those that were not learning disabled. Since this is a screening instrument, it would be better to have more false positives than missing some students that were at-risk.

Overall, the results of this study found the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test demonstrated solid concurrent validity in that it correlated highly with all the reading scores on the Woodcock-Johnson Test of Academic Achievement. The test also demonstrated test-retest reliability over a 6-month period. Lastly, the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test demonstrated good construct validity in

that it was very accurate at discriminating those students with learning disabilities from those without. Further the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test was 100% accurate at identifying students that were reading in the below average range on the Broad Reading subtest of the Woodcock-Johnson Test of Academic Achievement. The only downside found was that the measure tended to be overly sensitive and identified 36% of students who did not score in the below average range. This suggests the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Test is a quick, reliable, and valid measure that meets the needs of schools using an response to intervention approach.

Note

Please contact author(s) for any mentioned tables and/or charts.

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Practice and Challenges of Formative Assessment

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Introduction

Black & Wiliam (1998) indicate that formative assessment is a powerful means to improve pupils' learning. In the international scenarios, formative assessment has already been practised in schools in western countries (OECD 2005). In Hong Kong, the recent assessment reform policy has encouraged the use of formative assessment in schools (CDC 2001).

While the positive role of formative assessment has been widely accepted in the educational field, there has been an absence of coherent research underpinning both the theoretical and practical development of formative assessment in schools (Black 2000). Torrance (1993) indicates that "if arguments in favour of formative assessment are to survive and prosper, they must be articulated more fully and explicitly, and built on more than taken-for-granted assumptions about what constitutes 'good practice'" (p.339). To support this view, Black & Wiliam (1998) has made a call for further research on and theorizing about formative assessment. In response to the above request, the OECD (2005) has examined exemplary practice in secondary schools in eight countries. However, the results mention nothing about the practice of formative assessment in the Asian region. Thus a case study was carried out in Hong Kong to address the issue of practicing formative assessment in school.

This paper aims to report the practice and challenges of formative assessment in the case study school. In the following, the concept of formative assessment is firstly examined. Then the approaches of formative assessment practicing in a Hong Kong primary school are described. Practical implications for school-based formative assessment are finally discussed.

What is Formative Assessment?

Assessment is the actions for collecting information about what the pupils have learnt. It should be an integral part of the education process (DES 1988; Shepard 2001). In school practice, assessments are formative when teachers provide information to pupils to enable them to improve their learning; and, on the basis of this information, teachers are able to adjust their teaching strategies to meet the identified learning needs of their pupils (OECD 2005). Bell & Cowie (2001: 82-91) propose two models of formative assessment in schools. They are planned formative assessment and interactive formative assessment (Figure 1). See Sound Instruction web page at <http://www.rapidintellect.com/AE/8book-si2008.htm>

These two models are cyclical in nature and the components involved are mutually related. Moreover, the purpose of formative assessment determines how the assessment information is collected and used. In the process of planned formative assessment, the teachers plan to use various assessment strategies to elicit information about pupil learning. For example, the teachers ask their pupils to write something on a piece of paper or to make a physical model. They interpret the collected information with a pre-determined set of criteria and make judgement on pupils' achievement levels. Then the teachers act on the interpreted information to improve pupil learning by providing their pupils with different tasks or materials to work with. Interactive formative assessment occurs during pupil-teacher interactions. Unlike planned formative assessment with pre-determined assessment activities, interactive assessment arises out of a learning activity. The teachers are unable to plan the details of this kind of formative assessment because they cannot predict what exactly the pupils would be doing. In the actual process of interactive formative assessment, the teachers firstly get information which is verbal (e.g. pupils' answers) or non-verbal (e.g. pupils' body language). This sort of information is short-lived and in progress. The teachers recognise the significant levels of this information and determine its

implications for their pupils' learning. Then the teachers make response to the information so as to improve pupil learning.

According to OECD (2005), schools have benefits in using formative assessment. At the classroom level, the quality of teaching has been improved. Teachers have developed their abilities to scaffold learning goals for pupils and to adapt instruction to meet individual learning needs. They also pay closer attention to those teaching approaches that work well and put them into practice more often. Their relationships with pupils and parents are stronger. Parents know specifically on what their children are learning and pupils have greater involvement in the learning process. Moreover, pupils take more responsibility for their own learning and thus produce better work products. At the school-wide level, schools have moved from failing to exemplary status due to the practice of formative assessment. Such dramatic changes in school performance are based on: pupils have improved 'learning to learn' skills, pupils' have better achievements, pupils have increased retention and attendance, and teachers have greater attention to the weakest pupils.

Teachers generally accept the concept of formative assessment, but they have difficulties to put it into regular practice. The major obstacles are the big class size, extensive curriculum requirements (OECD 2005), and the lack of resources in developing formative assessment process (Shorrocks-Taylor 1999). When formative assessment is used within the classrooms, teachers may vary in their interpretation and application of the same performance criteria – either among themselves or with different pupils or classes (Kellaghan & Madaus 2003). Teachers may develop various impressions of pupils on the basis of incomplete information or stereotypes. As a result, they may give high marks to pupils who are more like themselves and make negative judgements of pupils from different cultural backgrounds or with different communication styles (OECD 2005).

With an understanding of the concepts and models of formative assessment as well as the benefits and obstacles for the implementation of formative assessment in schools, the researcher has conducted a case study in Hong Kong to explore how the teachers use formative assessment to improve pupil learning.

Research Methodology

The objective of this research is to investigate the practice of formative assessment strategies in school and the challenges the teachers have encountered in organising formative assessment activities. A Hong Kong primary school in which formative assessment was formally implemented was chosen as a case study. In this case study school, interview and documentary analysis were the two main research methods. Fifteen personnel received individual, face-to-face interview in the school. These personnel include the principal, the vice principal, the curriculum leader, 2 senior teachers responsible for academic affairs and teaching affairs, 4 subject panel heads and 6 subject teachers (Chinese, English, Maths and General Studies). Twenty pupils were also interviewed in groups. In addition, assessment documents such as subject assessment policies and assessment tools were collected from the subject teachers.

Formative Assessment in Practice

The practice and challenges of formative assessment in the case study school are analysed in terms of the key formative assessment strategies used in the school and the challenges the teachers have met in the process of using these strategies. Prior to the analysis, a brief introduction to the school background is firstly provided. The case study school is situated in a newly developed but highly populated area in Hong Kong. It has been operated for over six years and is regarded as an outstanding school in the community. When the research was done in November 2005, there were 32 classes with 994 pupils and 60 teachers. The school used a small class teaching approach (i.e. a class of 40 pupils was split up into two groups and each group was taught by a teacher) to

teach English, Chinese and Maths, and all teachers taught one class level only. The school had been working on school-based curriculum development since its commencement. The recent change to the use of formative assessment approach was the outcome of this curriculum development initiative, and this assessment approach was mainly implemented at primary 1-4 levels.

Key Formative Assessment Strategies used in School

For improving pupils' performance continuously during the year, the teachers used two major assessment strategies: (1) the achievement plan with follow-up work, and (2) individual oral feedback in class. The implementation of these two strategies is discussed in the following.

1. The achievement plan with follow-up work

In September, the school management group pre-determined pupils' passing rates in Chinese, English and Mathematics. Pupils were also asked to set their own target marks for achievement in these three subjects. Having finished the regular tests, the teachers had two days for reviewing the test papers while pupils had their holidays.

On the first day, the focus of discussion was on pupils' performance in individual subjects. Subject teachers of the same class levels marked the test papers together and discussed pupils' learning problems. On the second day, the focus was on pupils' performance at the class levels. Teachers reviewed the teaching content and the teaching strategies used in class in relation to pupil performance in the tests. They also analysed the test items in comparison with pupils' strengths and weaknesses in the subjects. Additionally, the teachers looked at the overall performance of pupils and determined the provision of remedial activities.

After the review work, the test papers were given back to the pupils so that they could know exactly what they had done and whether they had achieved their target marks. Pupils would get award from their teachers if they could achieve their target marks. Individual subject teachers then used two to three periods to follow up pupils' performance in their subjects. For example, in Chinese, when the teachers found that their pupils were generally weak in reading comprehension, the teachers would organize activities to strengthen their comprehension abilities. For some of the weak pupils, the teachers would recommend them to formally join the remedial groups in which remedial activities were carried out after school.

The achievement plan with follow-up work had important effect on pupils' learning and teachers' teaching. In identifying their shortcomings in the tests, pupils could pick up the missing part or unlearnt part easily in the follow-up remedial activities. In understanding the strengths and weaknesses of pupils' learning, teachers could modify their teaching content and strategies to meet the specific learning needs of their pupils in the next phrase of teaching.

2. Individual oral feedback

Individual oral feedback was generally practised in Chinese, English and Maths lessons at P.1-2 levels. For the upper class levels, the use of oral feedback would depend on individual subject teachers who felt it as necessary and appropriate. In these subject lessons, the teachers gave class work to the pupils after they had finished teaching the topic. They then moved around in class to record which area their pupils had learnt and which area they had not. In addition, the teachers gave feedback to individual pupils. For those low achievers, the teachers gave advice on how to improve their work or even re-taught the unlearnt items. The following scenario was described by an English teacher:

In primary 1 English lesson, we helped individual pupils to improve their sentence structures... After individual pupils finished their sentence making, we asked them to come out and gave them feedback on the use of capital letters and punctuation marks. If necessary, we would modify the sentences with them.

Almost all teachers agreed that individual oral feedback was very effective in helping pupils to learn and perform better. Just giving back the marked assignments to the pupils could not help them to improve because pupils often paid attention to the marks without taking much notice of their mistakes. In the process of individual oral feedback, pupils would be able to explain why they did it in such a way. As a result, their explanation skills would be better. When the teachers helped them to correct their mistakes, the pupils would know exactly why and how they were wrong. Thus they were willing to work harder. In return, the teachers would have more confidence in helping their pupils to learn further in the next stage of teaching.

Challenges Encountered in School

In the implementation of formative assessment, the school had encountered a number of challenges in the process. As there were often new teachers joining the school in the new academic year, some of them might not have the professional knowledge and skills in formative assessment. Some others might not agree with the use of formative assessment or would not be willing to change their mind-set unless they saw its good results. The school thus had to allow adequate time for these new teachers to establish their relevant concept and practice. Moreover, the existing teachers needed to have the professional knowledge and patience to help the new colleagues to understand and to use the formative assessment approach.

Due to the fact that assessment design in the school was based on class levels, each class level would have different modes in their assessments. Subject teachers who used to teach primary 4 classes would not know what was happening in primary 2. Coordination between class levels therefore appeared to be important. Besides, teachers often had differences in their marking of pupils' work. So they needed to have consensus about the marking criteria. In order to ensure the appropriate use of these marking criteria, the teachers picked one or two papers for pre-marking. At the end, when the teachers found some test papers with very high marks, they would ask other colleagues to mark the same papers again. If the marks were different, they would suggest a change of the marks. Similar work would be done for those test papers with low marks.

Concerning individual oral feedback in class, teachers needed to spend more time on and be careful of what to record in the lessons. They also needed to know when they should record the data. Moreover, they needed to have special skills in passing the message to the pupils who were serious in doing the assessment tasks. Additionally, giving and writing comments on individual pupils was time consuming. Those teachers who practised individual oral feedback in class had to prepare themselves for heavy workload.

Discussion and Conclusion

This case study has provided an understanding of the characteristics of formative assessment practised in a Hong Kong primary school. The two major assessment strategies employed by the case study school were the achievement plan with follow-up work and individual oral feedback. The teachers regarded these strategies as useful in helping their pupils to improve continuously in learning. In the implementation process, challenges were met including teachers' lack of professional knowledge and skills in formative assessment, the inconsistencies of assessment modes used at various class levels and in different subjects, and the heavy workload resulted from individual oral feedback.

The teachers in this case study school followed the two models of formative assessment (i.e. planned formative assessment and interactive formative assessment) identified by Bell & Cowie (2001). In the process of implementing the achievement plan with follow-up activities, the teachers firstly set the passing rates of their pupils and then used test papers to elicit information about pupils' performance in their subject areas. They marked the test papers and interpreted the results with reference to the passing rates set for their pupils. They then acted on the interpreted data by providing their pupils with the required remedial activities. This assessment process is therefore closely associated with the model of planned formative assessment. For individual oral feedback in class, the teachers had contact with individual pupils and noticed what they had done.

When they recognized their learning problems (e.g. using a wrong punctuation mark), they immediately made response by suggesting appropriate ways for improvement. This assessment process is indeed similar to the model of interactive formative assessment.

Significant insights are obtained from the findings of this case study. The first significant insight is related to the professional development of teachers. With reference to the case study school, the teachers had been involved in developing school-based curriculum materials with the associated assessment methods before the launching use of formative assessment. Thus those schools which plan to use formative assessment should equip their teachers beforehand with the required knowledge and skills in assessment design and implementation. Moreover, the teachers need to have collaborative abilities in analyzing the assessment results and the skills to provide immediate and constructive feedback to their pupils. School-based professional development is the appropriate approach to achieving these ends. The second significant insight is the conditions conducive to the organization of formative assessment. In the case study school, the teachers adopted a small class teaching approach at the lower class levels where interactive individual oral feedback was used. This was regarded as the key to success because through using a small class teaching approach, the teachers would have the time and space to understand and respond to the learning needs of individual pupils.

Assessment reform policy which encourages the adoption of formative assessment approach has just been introduced into Hong Kong. Its successful implementation at the school level will highly depend on the provision of adequate professional development activities for teachers and the support of effective school management and organization.

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Please contact author(s) for any mentioned tables and/or charts.

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Self-Assessment: Grading or Knowing?

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Introduction

By posing the question “How do they know they know?”, adult educator Jane Vella (Vella, Berardinelli, & Burrow, 1998) challenges those of us in professional educational settings to closely re-examine our assessment practices. This question suggests two points: it is ultimately the learner who truly knows what he or she knows, and it is the responsibility of the instructor to ensure there is a means of making such knowledge possible on the part of the learner. This question also begs another question: “How satisfied are they with their level of knowing?” This further question can be addressed adequately neither by an instructor-assigned grade nor by a self-assigned grade. This further question requires explicitly asking learners to reflect on their learning and level of competence, and to clarify or to authenticate such learning and competence not merely for purposes of grading but for performance beyond the classroom. For learners to determine whether or not they are satisfied with their levels of knowledge and skills, they must participate in some form of self-assessment.

This theoretical paper is intended to lay the groundwork for reconciling student self-assessment with instructor grading, particularly in professional programs. Students assess their own level of understanding or skill for specific objectives, indicating whether they are competent in it, they are not competent in it, or if they need more work. They do not assign grades to themselves. Instructors assign grades only on tangible student products or upon demonstration of a skill. This proposed alternative is intended to provide educators and students with a more appropriate means of measuring learning in that it will clarify for the learner his or her own status. Further, the implementation of this practice may help learners to take more ownership of their learning and thus transfer their classroom-developed skills beyond the classroom. Specifically, this paper will 1) briefly review issues with grading as a form of assessment; 2) examine the practice of self-assessment in professional programs; and 3) describe a methodology by which student self-assessment may co-exist with instructor grading.

Issues with Grading as a Form of Assessment

Grading is the ultimate form of assessment of student knowledge in formal education. It is a problematic but ubiquitous practice, bolstered by a strong accountability movement (Sirotnik & Kimball, 1999; Webb, 2005). To paraphrase Winston Churchill’s famous pronouncement on democracy, grading is the worst form of assessment, except for all others that have been tried. Key criticisms of standard grading practices include the following: an inability to recognize the individuality of the learner (Sirotnik & Kimball, 1999), poor reliability and poor validity (Guskey & Bailey, 2001), their use for sorting and classifying (Kohn, 1994), and low correlation between grading and later occupational performance (Samson, Graue, Weinstein, & Walberg, 1984). Further, despite Michaelides’ and Kirshner’s (2005, para. 11) contention that “graduate education is structured differently from earlier levels and has other goals,” grading practices in graduate education do not differ markedly from the K-16 level, even in professional programs (Gonnella, Erdmann, & Hojat, 2004; Kaufman, 1994).

Inconsistent grading practices at the graduate level are particularly problematic because many graduate programs serve as gateways to the professions. In addition, graduate education in some professions, such as education and accounting, must address the needs of students who are already practitioners. Researchers have found poor predictive power of grades in professional programs. Knight (2002) argues that in these situations, “the achievements that grades or degree classes signify may not be very transferable” (p. 280).

Such disparate findings have resulted in a widespread dissatisfaction of instructor grading as the sole means of assessment. Consequently, there is a growing movement to have students assess their own levels of knowledge and competencies, particularly in professional programs.

Self- Assessment in Professional Programs

The importance of self-assessment in professional programs has been explored and documented by several investigators (Fitzgerald, White, & Gruppen, 2003; Jackson & Popovich, 2003). In academia, self-assessment is often viewed as a means to increase responsibility on the part of the learner for his or her own learning. It is enacted through a wide spectrum of techniques, from individual learning contracts to portfolios to formal surveys. Because student self-assessment is thought to shift some of the responsibility for assessment from the instructor to the learner, it may also be thought of as a technique used to further authentic assessment.

Self-assessment in professional programs is clearly aligned with the proliferation of competency-based programs. These programs seek to produce individuals who can think and perform as novice professionals. Such programs emphasize case-based and problem-based instruction (Ryan & Marlow, 2004). The development of case-based and problem-based curricula seeks to embed learners in situations that resemble, as closely as possible, the environment beyond the classroom. For according to Frank and Barzilai (2004), “the real learning is often in the doing or in the process leading up to the product” (p. 44).

Professional competence and expertise are difficult to attain, and it is unlikely that the utilization of case-based and problem-based curricula alone are enough to ensure their attainment. Nieweg (2004) asserts that “professionals have to be able to control and assure their own quality” (p. 207). If we agree with Nieweg, that students in professional programs must learn to assure their own quality, then these students must be given ample opportunities to do so. They must be given opportunities to control and assure their own quality through practicing self-assessment.

Traditionally, self-assessment in professional programs—and in formal educational settings in general—has been inextricably linked to self-grading. Often, studies focus on how closely students’ self-assessments match those of their teachers (Fitzgerald, White, & Gruppen, 2003; Pope, 2005) or of their peers. The results of such studies have been inconsistent. Per Pope (2005) on student self-assessment and peer assessment, “both these forms of assessment are highly correlated with faculty-awarded marks” (p. 60). Yet, Regehr, Hodges, Tiberius, and Lofchy (1996) maintain that, “educators find it troubling that researchers who have attempted to establish the validity or accuracy of self-assessment have often come to the conclusion that people’s ability to self-assess is quite poor” (p. 52). Establishing the validity or accuracy of self-assessment by

correlations with instructor grading evades the crucial issue of control. By eliminating the element of self-grading from self-assessment, we can facilitate students control and assurance of their own quality in professional programs.

Student Self-Assessment and Instructor Grading

It is unlikely that grading will disappear from professional programs in the foreseeable future. It is possible, however, to encourage students' assessment of their satisfaction with their own knowledge and skills and to encourage simultaneous performance-based, formative and summative assessment by instructors.

Rather than asking students to grade themselves on projects or performance, we can ask them to remark on their own progress toward competencies. Using a simple form listing the competencies to be progressed towards, we can ask students to periodically indicate whether they are competent in it, they are not competent in it, or if they need more work. This periodic reporting positions student self-assessment as both formative ('How am I doing?') and predictive ('Could I perform this task on the job?'). In addition, we can ask them to provide open-ended comments on their ratings, encouraging further reflection. Instructors would assign grades only on tangible student products or upon demonstration of a skill. (Figure 1 shows a proposed progress-tracking sheet for a graduate course in instructional design.)

The following considerations should be taken into account when implementing this proposed self-assessment practice: 1) clarity of purpose; 2) the use of feedback; 3) and the mechanics for implementation. First, students must understand that their self-assessments do not influence the grades they receive. Instructors must spend ample time at the beginning of a course ensuring that this concept is clear.

Second, though there is general agreement that feedback on student performance is extremely important (Guskey & Bailey, 2001; Hampton, S. & Reiser, R., 2004), it is unclear how instructor feedback would influence this proposed self-assessment practice. Taras (2003) asserts that "traditionally, student self-assessment (SA) has not included feedback, either from tutor or peers, as an integral part of the process" (p. 549). In a study on enhancing the self-assessment skills of medical general practitioners through feedback, Jansen, Grol, Crebolder, Rethans, and van der Vleuten (1998) conclude that "self-assessment is more closely related to generalized self-attributions and only minimally influenced by external feedback" (p. 150). If we want students to take responsibility for their own learning and to measure their own level of satisfaction with that learning, it is prudent for instructors to refrain from commenting on students' tracking sheets. Instructors should merely note whether tracking sheets have been received or not. At the start of a course, instructors should explain to students that they will not be receiving feedback on their tracking sheets; students must come to understand that only they can measure their satisfaction with their own learning.

Third, to help ensure the successful implementation of this practice, the following recommendations are offered. The frequency for collecting progress-tracking sheets depends on the competencies being gained as well as the timing for instruction related to those competencies. When planning the frequency of collecting progress-tracking sheets, instructors should remember the recommendation of Boud (2000): "frequent self-evaluation is highly efficacious in enhancing student achievement" (p. 157). Instructors should supply students with an electronic template on which to record their

progress; this places the emphasis on the content, not on the format. Additional benefits of using a template include the elimination of having to interpret poor handwriting, and the potential for electronic storage and for subsequent review and data analysis by individual students and instructors alike.

Conclusion

There is little doubt that student self-assessment fosters learning. However, to foster learning beyond the course and beyond the classroom, separating self-assessment from self-grading should be explored in professional programs.

The value of this proposed student self-assessment practice must be substantiated by rigorous research, initially of a qualitative nature. At a minimum, we must ascertain and document the following: how students determine whether they are competent or need further work for a particular skill, and what plans, if any, students make to ameliorate their lack of competency. Only by obtaining the answers to these and additional questions, can we build an effective model for self-assessment that strives to authenticate student knowledge for the student, not for the instructor or institution.

Note

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Service Learning and Student Performance

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Introduction

Service learning projects impact student performance and different subjects are better learned by actively engaging the students. Fredericksen (2000) showed that mean reading scores for students who participated in service-learning projects were higher than those who did not participate in service-learning projects. Improvement of student learning through service learning has been of considerable interest in recent years. There is also extensive discussion about the importance of service learning as it relates to student learning (Kamuche, 2005a, 2005b; Kamuche and Ledman, 2005). This concern for service learning and student performance is the foundation for this study. For many parents, educators, researchers, and instructors, direct experience results in deeper levels of understanding and long-term memory (Kamuche 2005a, 2005c; Renner, 1996). This is what sets service learning apart from other types of assessment tools routinely used in courses, such as tests, quizzes, and homework assignments. According to Neil Merrell, director of the Center for Public Policy and Service at Mesa Community College, “service learning is the blending of academic study and community service.” At Mesa, says Merrell; “our goal is to encourage students to become lifelong, active participants in the community” (Berson, 1997: 23). In this study, service learning is defined as learning by engaging in activities that are with structured opportunities intentionally designed to promote student learning (Fredericksen, 2000: 64). Students in my Basic Statistics class were asked to engage in service-learning projects, as volunteers to teach Advanced Placement (AP) Statistics in selected high schools in the community. In those high schools, the college preparatory pupils have the option to take AP Statistics for future college credit.

Service learning occurs just from doing the work. For example, after a month working alongside a sheriff, a student has surely learned some important lessons about how to increase public safety, and something about what it means to be a good citizen (Berson, 1997). Active learning occurs whenever a student gives the knowledge acquired to someone else or draws connections between the knowledge acquired and other experiences (Kamuche, 2005a; Renner, 1996). Programs that encourage active learning from service experience may even have greater impact on knowledge. These issues are addressed in the following literature review and theoretical framework for the study.

Literature Review and the Theoretical Framework

In an era characterized by accelerating technological change, increasing economic uncertainties, low student achievement, and growing demand for accountability, educational institutions are challenged to prepare students to function successfully in their chosen careers (Kamuche, 2005a). The above concern makes it imperative that administrators of educational institutions find ways to improve student learning. Many reasons are advanced for the concern such as the complications attributed to not understanding the materials, not attending class, and/or taking corrective measures as defined or identified by service learning (Kamuche, 2005a). With service learning projects, activities and their reviews, it is easier for an instructor to know how well the students understood the subject matter or course materials. The best learning occurs

when the instructor actively engages or involves students in learning by doing the service learning. It will likely enhance their learning and supposedly, they will perform better.

As noted by Beets and Lobingier (2001) pedagogical research needs to begin to assess learning. Evaluations need to go beyond grades and test scores to assess understanding (Kamuche, 2005a). This study evaluates the impact of service learning on student performance among Basic Statistics students. The evaluation specifically assesses whether students who were exposed to service learning also have a better understanding of course material. Several studies have suggested the need for a meaningful assessment (Astin and Sax, 1998; Barr and Tagg, 1995; Berv, 1998; Chanlin, 1999; Cunningham, 1997; Evangelopoulos, 2003; Figlio and Lucas, 2004; Fredericksen, 2000; Giddings, 2003; Jacoby, 1996; Markus et al 1993; Marsh and Roche, 1997; Rice and Brown, 1998; Romack, 2003; Sax and Astin, 1997; Saunders and Saunders, 1999; Schaffer and Peterson, 1998; Sophos, 2004; Strange, 2001; Thompson and Serra, 2005; Warren, 1998). These studies indicate that for the specific case studied, the change in systems did have a positive effect on performance. Most education research have confirmed that service learning does yield benefits. For example, Strange (2004), Romack (2003), Sophos (2004), Thompson and Serra (2005) compared test results of service-learning and non-service-learning students in different kinds of courses. They found significantly higher scores for service-learning students and concluded that service learning influences performance. The mean scores for these students were significantly higher than for non-service-learning students.

Sophos (2004) and Romack (2003), in one of the published studies of service learning and performance, also reported on different kinds of courses. They also concluded that service-learning projects had a beneficial and significant influence on student performance. They further found that the positive effects on performance increased as the number of service learning projects increased. Fredericksen (2000) also examined effects of service learning on student performance in an American Government course over three semesters. She found that service learning projects and activities were a determinant of a higher student performance. These studies clearly suggest that there is added value to service-learning students. If service-learning students outperform non-service-learning students, it seems reasonable to conclude that something is occurring as a result of students who were exposed to service learning. That conclusion leads to the primary objective of this study. Therefore, the investigator hypothesized that service-learning students would not only perform better on tests but also would learn more. If the ultimate goal is to increase student learning, the question is, can student performance in Basic Statistics be improved as a result of service learning projects? A review of research on behavior modification found that, on average, performance improved 17 percent when behavior modification techniques were used (Ledman and Kamuche, 2003; Stajkovic and Luthans, 1997). This study extends that research, to assess the impact of service learning on student performance and to assess the relationship between student test performance and the student's ability to demonstrate an understanding of the topic, as suggested by Kamuche, 2005a; Kamuche and Ledman, 2005; Ledman and Kamuche, 2002. The null hypothesis for the study was that service-learning students would not have higher scores on an achievement test than non-service learning students. Therefore, the operational hypothesis (alternate hypothesis) for this study was that service-learning students would have higher scores on an achievement test than non-service learning students.

Research Method

Sample

The sample in this study is from students in the investigator's Basic Statistics classes for more than three academic years at Morehouse College. The classes constituted both students who opted for the service learning project and those who did not. The service learning students were required to teach AP Statistics to selected high school pupils in the community and kept journals of all their activities. The typical enrollment in the classes was thirty-five students per class section with two or more sections being taught each semester. The total enrollments in the Basic Statistics courses each year ranged from 125 in the first year to 100 in the second and third years. The total enrollment for the Morehouse College was approximately 3000 students during the years of this study.

Data Collection

College policies required faculty (like in most colleges and universities) to maintain complete and accurate student attendance and tests records. These records served as the data sources for this study from 1997 to 2005. The final year of data collection was the end of fall semester 2005. The sample size was 325 students.

Procedures

Student enrollment records were maintained during the study years. To test student performance, the students in the course were given the same treatments (faculty, syllabus, texts, course preparation materials, and tests) for all years of the study. By using the same instructor for all sections, the author controlled the variations in instruction, lecture material, topic coverage, and students' abilities. The academic records of 325 students who completed a Basic Statistics lecture course with or without a service-learning requirement were examined, to compare grades earned by the service-learning and the non-service-learning students. Journals of the activities (e.g., lesson preparations and topics) kept by the service learning students were constantly monitored and evaluated by the instructor. Test scores of both students enrolled in Basic Statistics classes were collected. Test scores for the first and second semesters were used. The test scores for each class were averaged to get a mean for each class. The experimental group ($N = 165$) was service-learning students whereas the control group ($n = 160$) was non-service-learning students.

Results

An independent t-Test was used to analyze the data with the t score being $t=2.28$. The mean score for service-learning students was 82.1, while the mean score for non-service learning students was 76.4. The standard deviation of the service-learning students was 10.8 and the standard deviation for the non service-learning student was 14.8. At the .05 level of significance, the null hypothesis was rejected, indicating that students who did service-learning projects scored higher than the students who did not participate in the service learning projects.

Discussion

Based on the results of this study, service-learning students scored better than non-service learning students. This study provides evidence that faculty may engage in service learning for their students. Based on the results, service-learning projects are quite relevant to student performance in Basic Statistics since they learned a great deal of statistical concepts during the tutoring of high school pupils. The journals they kept of their activities during the service-learning further supported that the process helped them better understood the subject matter. Most students indicated that the lesson preparations and actual exchanges between them and the pupils in the classes helped them understood the Basic Statistics concepts. Clearly, the author can say that service-

learning participation caused better performance. Further studies are needed in different courses apart from the Basic Statistics, especially in light of the findings of this study. These findings clearly suggest that service learning is important to student learning in general and in particular, the Basic Statistics.

Conclusions

This study evaluated the impact of service learning on student performance among the Basic Statistics students at Morehouse College from 1997 to 2005. The students who were taking the Basic Statistics course were required to tutor selected High School pupils in AP Statistics. The students were required to keep journals for all their activities during the service-learning. Their experiences from the preparation and teaching of the High School pupils are believed to have helped the Basic Statistics students understand the Basic concepts and subject matter of the course. It was hypothesized that service-learning students would have higher scores on achievement tests than non-service learning students. The academic records of 325 students (sample size) who completed the Basic Statistics course with or without a service-learning requirement were examined, to compare grades earned by the service-learning and non-service learning students. The experimental group (N = 165) constituted the service-learning students whereas the control group (n = 160) constituted the non-service learning students. The tests scores for each group were averaged to get a mean score for each group. The mean score for the service-learning students was 82.1, while the mean score for the non-service learning students was 76.4. It was concluded that service learning projects were quite relevant to student performance in Basic Statistics. Nevertheless, in order to generalize the result, further studies are needed in other courses, apart from the Basic Statistics.

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A Model for Comprehensive Assessment in the College Classroom

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Historically, assessment at the college/university level has been used to judge the quality of student work and assign grades (Guskey, 1988). While this is a necessary function in most institutions of higher learning, it should not be the only one. Assessment in the college classroom must have the fundamental purpose of improving student learning. For this, assessment must be an ongoing process, one in which both the student and the teacher are actively involved (Angelo & Cross, 1993; Gibbs & Simpson, 2004-5; Rouseff-Baker & Holm, 2004). If the goal is to improve student learning, a more comprehensive view of assessment is essential. Comprehensive classroom assessment places assessment throughout the learning process to determine the impact and future direction of instruction. Did students learn what was intended, and what must be done next to ensure student success? This article presents a model that will help university faculty address these questions.

Research on teaching and learning strongly supports the movement toward comprehensive and non-traditional assessment. There is overwhelming evidence suggesting a need to shift from relying solely on traditional summative assessments, such as written tests and term papers, to using throughout the instructional process alternative assessments, such as simulations, portfolios, case studies, performances, and projects.

Change in how assessment is viewed is closely linked to increased understanding about how students learn. The current understanding is supported by research on learning styles (e.g. Dunn & Dunn, 2000; Tomlinson & McTighe, 2006), multiple intelligences (Gardner, 2003; Kornhaber, Fierros & Veenema, 2004), and brain-based learning (Sousa, 2005; Wolfe, 2001). The research and theories indicate that teachers need to employ a variety of teaching strategies to meet the diverse learning needs of students. As professors utilize a variety of instructional methods, they begin to see the benefit of comprehensive classroom assessment.

Individual efforts in implementing alternative and comprehensive assessment techniques have been documented by college and university teachers throughout the world (Banta, Black, Kahn & Jackson, 2004; Black, Harrison, Lee, Marshall & Wiliam,

2004; Jenkins, 2004-5; Schneider, 2006; Wolcott, 1999). These include diagnostic, formative and summative assessments as well as a variety of scoring tools. Angelo and Cross (1993), concerned about improving college teaching, compiled over 50 ways to assess learning in the classroom. These methods actively involve students in the assessment process and are linked to learning outcomes and the levels of thinking used in instruction. Clearly, there is movement on campuses to experiment with different types of assessments to meet the diverse learning needs of college students and to improve university teaching.

The evidence is in, but how do college campuses put a more comprehensive view of assessment into practice? The purpose of this article is to share the East Stroudsburg University comprehensive classroom assessment model (ESU Comprehensive Task Force, 1999) and the inquiry process used to construct it.

The Process

In the fall of 1997, the ESU Center for Teaching and Learning secured a Strategic Planning Grant that brought together sixteen faculty members from ten different departments to begin a three-year inquiry process of designing a university classroom assessment model. The inquiry process had four phases:

- Research: review of current research and literature regarding university classroom assessment and the characteristics of university learners.
- Design: synthesis of research findings and design of a framework for selecting assessments to match course outcomes and learner characteristics.
- Review: internal review of the model by faculty across campus and external review by an assessment authority to finalize and publish the model.
- Dissemination: presentations of the model to multiple audiences (university, school, department) in a variety of ways and inclusion of the model in the university teacher education conceptual framework.

The Model

Information gleaned from the research phase yielded a common language and led to the following definition: Comprehensive classroom assessment is the gathering and synthesizing of information about student learning over an extended period of time and using a variety of data gathering methods and tools (ESU Comprehensive Task Force, 1999, p. 1). The synthesized research also led to the development of a list of characteristics of comprehensive classroom assessment (p. 2) (Figure 1). Based on these characteristics, a model outlining a five-step implementation process was developed in the design phase (Figure 2). This model can be used by faculty to make informed choices about assessing student learning as they move away from the more traditional, almost exclusive use of summative assessment. The scope and complexity of comprehensive assessment made it critical to design a model that was systematic, informative, and relatively easy to use. A description of each step details this.

Step One: Determine the purpose of the assessment - Comprehensive classroom assessment incorporates diagnostic, formative, and summative assessment. Diagnostic assessments are important for determining what students already know so that instructional decisions about content and time frame can be made. Formative assessments are important throughout instruction to determine if students are learning what is being taught so that the appropriate instructional adjustments can be made. Summative assessments, occurring at the end of instruction to determine mastery of outcomes, include a range of traditional and performance-based options.

Step Two: Match assessments to outcomes and level of thinking - Many colleges and universities, including ESU, are now using outcomes to help define learning. If instruction is to be goal-directed, it is imperative to link assessment to outcomes. Attention also needs to be paid

to appropriate levels of thinking (i.e. recall and comprehension, application, problem solving, and reflection) in order to ensure that the assessment method matches the level of thinking practiced during instruction and required by the outcome.

Step Three: Determine the class demographics - Demographics include a variety of elements, the age and experience level of the student, documented physical and learning needs of students, diversity characteristics and individual needs based on learning styles. Fortunately ESU was able to build upon a prior initiative related to learning styles. First year students at ESU have routinely completed the Dunn and Dunn Learning Style Preference Survey (Dunn, Dunn & Price, 1991), which provided information for students and professors about individual and class learning style needs.

Step Four: Choose the assessment method - Assessments are chosen based on what is known about the students, course outcomes, and what the goals are in terms of thinking levels. A planning grid for each type of assessment was designed to help the professors make these decisions (Figure 3). While the list is not exhaustive, it does offer choices in all three categories of assessment: diagnostic, formative, and summative.

Step Five: Determine the scoring tool - Not only must assessment be viewed differently, but so must scoring. A simple grade at the top of a paper or test is insufficient. A tool must be chosen to fully communicate with the student the critical attributes for mastery. Included in the model disseminated to ESU faculty were samples of scoring tools already in use by their colleagues, such as rubrics, rating scales, and checklists, that allowed for thorough and meaningful feedback. (Figure Three)

The Model Into Practice

During the review phase the model went through substantive changes as task force members met with representatives from their departments to obtain feedback on content and usability. In addition, suggestions were given for supporting resources that would aid their implementation of the model. An external review was then conducted by Dr. Jay McTighe, the director of the Maryland Assessment Consortium and co-author of *Understanding by Design* (Wiggins & McTighe, 2005).

The task force decided on a "grass-roots" approach for the dissemination phase, conducting small group sessions about the model as a whole and on the specific steps, such as developing scoring tools. Different task force members also presented the model at university, state, and national forums. Assessment information, including executive summaries of research and sample methods and tools, was made available through the Center for Teaching and Learning website and professional library. The purpose of this widespread dissemination effort was to engage faculty in critical dialogue about assessment as well as to foster ownership of the model university-wide.

Lessons Learned

Upon reflection and evaluation of the model-building process, the task force ascertained three important elements that should be considered whenever the university undertakes a campus-wide innovation.

1. Be open to assessment knowledge available in areas beyond the university. The assessment team expanded the literature search to include basic education and adult learning in venues, such as health care, to gain useful data and practical ideas.
2. Be open about the amount of effort the change will consume. Comprehensive classroom assessment is time-consuming and challenging. Professors are discovering that there are many practical issues that surface when they move toward comprehensive assessment,

not the least being how to store all the projects that can be submitted in a single day. Although not all hurdles can ever be predicted, if the task force had anticipated some of those specific obstacles, a section of the handbook could have been developed to provide suggestions regarding logistical issues. Currently members of the task force attempt to problem solve by providing suggestions during dissemination and support sessions. Although the growth process remains a struggle and the development of comprehensive assessment methods and tools takes more time, professors are beginning to reap the tangible reward of co-investment in student learning, increased student achievement, and positive student evaluations.

3. Do not avoid the “sticky” issues or at least have a plan to address them at a later date. The external reviewer on the project, Dr. Jay McTighe, challenged the task force about the absence of information on two issues, grading and review practices. Neither are popular topics on a university campus, and the task force was concerned about adding more controversy to the document. However, the task force did develop a plan to address the issues, including follow-up seminars and a campus-wide retreat. These two topics continue to generate lively debate and are not yet ready to be included as an addendum to the assessment model. However, campus members are uncovering their beliefs about these topics, a first clarifying step, toward inclusion in the model.

New Directions

Faculty members at East Stroudsburg University are at various levels of implementation of the comprehensive classroom assessment model (ESU Comprehensive Task Force, 1999). As more faculty embrace and experiment with the model, a fifth phase of inquiry focused on validation, has begun to emerge as the conversation about assessment filters into daily practice. The validation phase affords the potential for various inquiry projects and action research in the college classroom. Research paths include surveys of current practices, policies, and structures on campus, case studies, and comparative studies to determine the impact of assessment on student achievement. Responsive action in designing new assessment methods and evaluation criteria can then be taken. Achieving Academic Excellence: The ESU Model for Comprehensive Classroom Assessment (ESU Comprehensive Task Force, 1999) continues to provide a catalyst for scholarly activity and continuous improvement in teaching and learning, thus contributing to a body of rich documentation for accreditation and for the university mission of academic excellence.

Note

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Chapter Two: Consultation and Collaboration

Educators are no longer able to work in isolation from one another. K-12 schools and universities embrace the need for collaborative efforts among and between faculty and staff. Interdisciplinary collaboration, in which faculty from various disciplines work with one another to promote connections between otherwise separate curricula, is one of the ways in which educators are making these efforts. This chapter includes a collection of articles examining these important issues.

Several articles present collaboration as it relates directly to teachers. These include studies that examine both practice and attitude as we examine collaborative and consultative activities. Some key pieces include *Lessons on Literacy: An Experience in Co-Teaching and Telling Stories of our Collaborative Practice*. We hope that from these examinations of practice you can improve your own collaborative and consultative experiences. Other investigations addressed specific successful program analysis such as (1) *School Collaboration Research: Successes and Difficulties*, (2) *Collaborative Voices: One University-School Models* and (3) *Business Liaison Collaboration: A Case Study*. These types of analyses are beneficial to consider since we all are challenged to increase accountability in practice, and this is best served through appropriate analysis and assessment of our collaborative and consultative processes.

Additional articles are included that address issues in the field of professional development and teacher attitudes and include *Improving Teachers' Assessment Knowledge and Successful Preparation of Teachers of Students with Disabilities*. Others clearly identify the overlap between the issues presented in this volume and examine a combination of assessment, collaboration and online experiences.

These are just a few examples of the wide range of topics on collaboration that are included within this chapter. It is our hope that you enjoy this engaging issue full of useful, practical, and creative ways to better integrate effective consultation and collaboration into your and your students' educational experiences.

Collaborating for Information Literacy

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Introduction

With the boom in information technology, there has arisen the widespread practice of plagiarism and the use of essentially Internet sources for research assignments (Liles & Rozalski, 2004; Cheney, 2004). Study conducted by the Center for Academic Integrity finds levels of cheating and plagiarism remain high, with 70% of students admitting to some cheating (McCable, 2005). Although students today have access to vast sources of information, many lack information literacy and library skills to find, critically evaluate, synthesize and apply information in a meaningful way (Cooney & Hiris, 2003; Fitzgerald, 2004; Lampert, 2005). Violations of academic honesty on the one hand, and the opportunities offered by the library of having access to sources of doing work of a high quality now require that librarians and faculty work together.

To have the most effective impact, librarians need to collaborate with faculty in integrating information literacy into the curriculum (Lampert, 2005; McCulley and Hare, 2005; Ward, 2006). The benefits of such collaboration have gained a lot of attention in recent literature. Raspa and Ward (2000) showed how librarian-faculty collaboration on information literacy initiatives led to increased communication, greater alignment, and improved learning outcomes. Lampert (2005) presented a faculty-librarian collaborative model for incorporating information literacy instruction into pre-service programs for future educators that fosters information literacy and life-long learning. Auer and Krupar (2001), and Lampert (2004) emphasized the need for faculty-librarian collaboration in developing effective approaches to educate students about plagiarism. This article describes how a faculty from education department joined forces with a librarian to build an effective teaching alliance to help students develop information literacy and complete a literature review paper for a capstone education research course.

Planning

The faculty and librarian began to plan the library instruction program prior to the Fall 2005 semester. Course requirements, learning objectives, and students' characteristics were discussed. The course required each student to conduct a literature review on an educational technology topic. Students were required to select at least 15 research-oriented journal articles to support their research paper and write the paper in APA format. The main objectives of the teaching alliance were to help students conduct effective research using library resources and avoid plagiarism. To help achieve the objectives, the faculty and librarian decided to implement these strategies:

- Integrate information literacy and library instruction into the course curriculum.
- Develop course-specific library resources and incorporate them into the Blackboard course website.
- Provide two library instruction sessions that covers the use of library databases, Turnitin plagiarism prevention system, and APA style.
- Use Blackboard, especially its discussion board feature to facilitate learning outside class.

The main components of the library instruction sessions; planning, implementation and evaluation of the faculty-librarian collaboration are discussed below:

Online Resources and Support

The faculty and librarian worked together to develop a Blackboard course website that contained course content and course-related library resources. They included library databases related to education, writing resources, APA style guides, plagiarism prevention resources, as well as flash animated tutorials to help students to access library resources from home and register for the Turnitin system. The students were able to access these resources within the course website under Library Resources folder. Various online discussion forums were also created to provide opportunities for students to discuss and ask questions related to the course and the research paper. Both the faculty and librarian were responsible for moderating the discussion forums.

The First Library Instruction Session

The objective of the first library session was to teach students how to use the library's subscribed databases to locate peer-reviewed, research-oriented journal articles. This session was scheduled in the fourth week of the semester so that the students would be better prepared. By the fourth week, the students were introduced to the fundamental principles of educational research and developed potential topics for their research paper. To help students distinguish between using Internet search engines and library databases, the faculty asked the students to search for articles related to their research topic using the Internet before attending the first library session.

During the first library session, the librarian guided the students to the Library Resources folder. Following the links in the folder, the librarian introduced the students to different resources and services, then she moved on to show the class how to use different library databases like Wilson Education full-text and ERIC. After the demonstration, students conducted research on their own topics in class. The librarian would be available to assist them throughout the semester online via the course website and in-person at the library.

Through the experience of searching the Internet and the library databases, the students were quick to see the advantages of using library resources for research assignments. They learned from experience that they were able to locate a large number of research-oriented journal articles for their papers only by searching the library databases. Providing the students with opportunity to experience both the Internet and the library databases helped them better understand the need for verifying and critically evaluating information found on the Internet.

The Second Library Instruction Session

Timing was an important factor for offering the second library session, which was scheduled in the tenth week. The objective was to teach students how to cite sources properly using APA style and how to use Turnitin to avoid plagiarism. At this point of time, all students had completed the first draft of their research paper. The experience of locating sources and writing their papers helped them understand the reasoning for using sources and giving credit to those sources that had helped them develop their papers. As the students were working on their final papers, they started to ask how to develop the references section of their papers. This second session was offered just in time to answer these questions. The librarian developed a resource page, Avoiding

Plagiarism, and uploaded it into the Library Resources folder. The webpage had two parts. Part one contained resources for preventing plagiarism, including links to the University's academic integrity policy, guidelines for citing sources in APA style, and Turnitin's research resources on preventing plagiarism. Part two contained information about Turnitin: what Turnitin is, why we use it, and how it works.

When the class started, the librarian took the students to the Avoiding Plagiarism page on the course website. Following the links to various topics related to plagiarism, the librarian discussed with the students what plagiarism is, the different kinds of plagiarism, and how to use APA style properly and compile their references list. After that, the librarian introduced the students to Turnitin, a plagiarism prevention system subscribed by the College. Turnitin is an online system that can help identify papers containing suspect plagiarized materials. The system works by checking submitted paper against Internet content, Turnitin's database of submitted student papers, and commercial databases of journal articles. Any matching text found by the system is detailed in an Originality Report and sent to the instructor, as well as to the student if the instructor chooses to do so. The librarian made sure that the students understood that the purpose of using Turnitin in this class was not to "catch anyone", but to help them identify potential sources of plagiarism so that they could correct it. Guided by the librarian, the students registered with Turnitin and submitted a sample paper to the system. This was to prepare the students for submission of their final papers to Turnitin. Before the class ended, the librarian told the students that library instruction would continue via Blackboard, and she encouraged the students to post their questions to the online discussion forums.

Evaluation

Pre-Assessment

At the beginning of the semester, a pre-test consisted of ten questions adapted from Diana Hacker's (2004) online research exercises, "Avoiding Plagiarism in APA Papers" was given to the students to assess their prior knowledge of plagiarism and APA style manual usage. The test asked the student to read a passage and the information about its source, and then decide whether each student sample is plagiarized or used the source properly. The pre-assessment revealed that the class had a low level of prior knowledge regarding plagiarism and APA style manual. The students were not clear about what constituted plagiarism, and had difficulty paraphrasing or determining whether plagiarism was committed in the student samples. In addition, the survey at the end of the first library instruction session revealed that sixteen out of twenty students had no prior training in conducting educational research utilizing library resources, especially using the library databases.

Post-Assessment

After a semester-long faculty-librarian collaboration to help students learn to conduct research using library resources, and to avoid plagiarism by citing sources properly, students showed significant gains in database search skills, as well as their ability to avoid plagiarism. The students' final research papers demonstrated not only a good selection of research-oriented journal articles in their references, but also their ability to integrate sources into their papers and cite them correctly. Overall, the faculty found that the quality of papers submitted by this class was higher than those submitted by classes in previous semesters. As part of the course requirements, all the students submitted their final paper to Turnitin to be checked for plagiarism. After careful examination of the Turnitin Originality Reports on the students' papers, the instructor concluded that no students committed plagiarism. One student paper, however, was found containing four suspect sources. Closer inspection of both the student paper and the suspect sources found that the Turnitin system failed to tell properly attributed quotations in her paper from two suspect sources. The other two suspect sources were due to improper citing of sources. The instructor met with the student to go over her paper, and helped her understand and correct the problems identified by Turnitin. As stated by many students in the class, the course not only

helped them improve research skills and avoid plagiarism, but also allowed them to use the knowledge and skills they gained to educate their students about plagiarism and how to avoid it.

Discussion

With plagiarism on the rise, instructors need to commit to a “new form of education – one that incorporates ethics, vigilance, collaboration, and technology” (Bowman, 2004, xi). Educators should focus more on plagiarism prevention than punishment, spend more time helping students improve their research skills, and make sure that they understand what plagiarism is and how they can avoid it. In recent years, there are more articles encouraging librarians to take on more active roles in plagiarism prevention, and to form partnerships with faculty to integrate plagiarism education into the curriculum (Auer & Krupar, 2001; Jackson, 2006; Lampert (2004); Wood, 2004). The studies by Burke (2006) and Martin (2005) confirmed our belief that students’ awareness of plagiarism prevention system such as Turnitin and its use by faculty and students could serve as a deterrent to plagiarism. However, we believe that careful pedagogy is the key to preventing plagiarism. The library instruction session on plagiarism and Turnitin described in this article represents a joint effort by librarian and faculty to educate students about plagiarism and how to avoid it instead of policing them. In light of the fact that these students are teachers themselves, it becomes even more important to give them the tools and resources so that they can help their students understand what plagiarism is, why it is wrong and how to avoid it.

The implementation of course management system such as Blackboard on college campuses has created new opportunities for librarians to collaborate with faculty to integrate library resources into the curriculum (Cox, 2002). As more faculty use Blackboard to enhance traditional college courses, having a library presence in these faculty-created course websites becomes strategically important (Cohen, 2002; Shank & Dewald, 2003). Shank and Dewald recommended that librarians be “proactive in inserting links to library resources within the courseware domain.” (p.38). They proposed two methods of involvement for librarians: Macro-Level and Micro-Level Library Courseware Involvement. At the Macro-Level, librarians would be working with software developers to incorporate “a generic library presence” into the system. At the Micro-Level, a librarian would collaborate with a faculty to develop “a customized library instruction and resources component for the courseware-enhanced course.” (p. 38). This is exactly the method the librarian and the faculty took for this course. Library instruction components and course-specific library resources were incorporated seamlessly into the course website, and the students were able to access these resources anytime from anywhere. Instead of relying on Internet search engines to locate sources for their research papers, the students used the library databases placed within the course website to locate scholarly journal articles. Although the class met only once a week, the use of discussion board allowed the students, the faculty, and the librarian to stay in touch and continue working on the papers. By the end of the semester, a total of 187 messages were posted on the various discussion forums in Blackboard. Implementing Blackboard helped to facilitate the development of effective faculty-librarian teaching alliance and enhance students’ learning experience.

Students also found the support from both the faculty and librarian important in developing and writing their research papers. Out of the twenty students in the class, sixteen were first-time users of library databases. Having the faculty who acted as their content expert and the librarian as their library liaison made them feel more comfortable to use library’s resources or seek help. Students commented that it was nice to have a librarian dedicated to work with them, and to have both the faculty and librarian readily available to assist them not only in class, but also through e-mail, online discussion boards, and one-on-one consultation. All students went above and beyond the course requirements for having 15 research articles to support their research paper.

Conclusion

Successful faculty-librarian collaboration helps students learn research skills and methods to prevent plagiarism. In contrast to giving students a one-time library instruction and trying to teach them all the concepts within one session, the building of the faculty-librarian teaching

alliance has enabled the students to learn, practice and apply information literacy and research skills successfully to their research papers. This is made possible because of the planning process prior to the semester, the collaboration between faculty and librarian throughout the semester, and their commitment to helping students succeed. The use of Blackboard, especially its communications tools, have allowed faculty and librarian to have continued dialog with the students, to provide research assistance at students' point of need, and to adopt a more collaborative approach to learning and teaching. All of these components have contributed to the successful completion and high quality of the students' research projects. Through pre-semester planning, providing online resources and support, and library instruction, the objectives of building a faculty-librarian teaching alliance for information literacy were achieved.

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Global Competency: An Interdisciplinary Approach

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Introduction to Global Competency

The importance of educating US citizens to be internationally aware and knowledgeable first emerged in response to national security needs during the cold war era when congress passed the National Defense Education Act of 1958 (National Defense Education Act, 1958). This legislation provided government funds to institutes of higher education in support of enhanced study of foreign languages, history, geography, and economics. More recently and in response to the economic, political, technological, and environmental changes being brought about by globalization, the importance of internationally-attuned education has taken on renewed vitality as is evidenced by the global competency initiative issued by the Council on International Education Exchange in 1988 (Council on the International Educational Exchange [CIEE], 1988). In general, the report recommended an increase in the number of students studying abroad, greater participation of students from under-represented academic and social groups, more experiences in developing countries, and internationalization of curricula and the university atmosphere.

Since then a variety of definitions for global competency, global citizenship, and global awareness have appeared. As Hunter (Hunter, 2004) points out, no one in particular is viewed as the standard and this has at times complicated research in the field. Among the definitions presented in his comprehensive review is that of Curran (Curran, 2003, p.10), who defines global competence as an “appreciation of other cultures and the ability to interact with people from foreign lands. It is the ability to become familiar with an environment, not causing a rift while experiencing something new, and reflection upon the experience at its completion.” Alternatively, The Stanley Foundation (Stanley Foundation, 2004) states that, “Globally competent citizens know they have an impact on the world and that the world influences them. They recognize their ability and responsibility to make choices that affect the future.”

Despite that lack of consensus on a specific definition, global competency is often viewed in terms of three attributes: knowledge, attitudes, and skills (Green & Olson, 2005). In brief, a globally competent person is one who demonstrates knowledge of world geography, conditions, and events. It is someone who has an awareness of the complexity and interdependency of world issues and events and an understanding of the historical forces that have shaped the current world system. In terms of attitudes, a globally competent person has a sensitivity and respect for personal and cultural differences. It is someone who is capable of empathy and can handle ambiguity and unfamiliarity. Regarding skills, a globally competent person has critical thinking and comparative skills, including the ability to think creatively and integrate knowledge. Also, it is person who has effective communications skills including an understanding of intercultural communication concepts (Green & Olson, 2005).

Given the importance of these attributes in preparing graduates who can function as world citizens and who are ready to join the global workforce, the question for educators is how to best provide students with opportunities that nurture this type of learning and awareness. The model presented in this paper, a multi-disciplinary

international service-learning project, may offer such an opportunity and has the added benefit of requiring minimal changes to administrative infrastructure.

Defining International Service-Learning

Service-learning is a pedagogy in which students engage in activities designed to enhance learning by integrating appropriate community-based projects into their coursework, and by reflecting on the experience in order to promote their own development (Jacoby and Associates, 1996). Study abroad is a form of experiential education and is promoted by the CIEE initiative as key to developing global competency. At its best, it engages students in meaningful interactions and relationships with a variety of people while also addressing traditional academic endeavors. In reality however, study abroad can result in isolated programs where students remain in insulated groups, interacting only with peers from their home institution or with other international students. Framing the study abroad experience within a service-learning context can provide the sometimes missing meaningful relationships to the community. Thus, by pairing these two pedagogies, students may be able to experience the maximum benefits from both approaches.

Current trends in U.S students studying abroad

Recent statistics show that the five most popular destinations for American students studying abroad are the United Kingdom, Italy, Spain, France and Australia (Institute of International Education [Opendoors], 2005). This shows the disparity between current practices and the CIEE goal of sending students to destinations less frequented by Americans and where English is not the first language. Additionally, certain disciplines have historically had fewer students go abroad. Engineering, Mathematics, Computer Sciences, and Agriculture, are the least represented majors in study abroad (Opendoors, 2005). Part of the problem stems from the rigid and heavy academic course load associated with the sciences and math, making it difficult for students from these disciplines to spend a semester away from their home institution. This makes the CIEE goal of increasing the number of study abroad participants from under-represented academic fields such as these, all the more challenging.

Recently, and perhaps because of the pressure students feel to graduate as quickly as possible, there has been an increase in the number of students participating in short-term study abroad (programs of eight weeks or less) in recent years, from 3.5% in 1995-1996 to 8.9% in 2003-2004. (Opendoors, 2005). Short-term experiences are a feasible way for many students to experience a foreign country and may be attractive to some because they can be embedded within regular credit-granting course work and implemented by the regular course instructor from the home university. The proposed model addresses these unsatisfied CIEE objectives. It uses short-term travel in order to reach students who may not otherwise participate in study abroad (such as those in the sciences). And, while it is possible to confine projects to English-speaking areas or to rely on English-speaking contacts onsite, the current model promotes destinations where English is not the first language and asks students not to rely on the English speaking skills of others.

The Synergy of Collaboration

The opportunities brought on by international service-learning projects can be enhanced by using a collaborative approach. Global competency is interdisciplinary by nature and the learning experience should reflect this. Service-learning projects can be more comprehensive when the needs of the community partner are addressed from more than one perspective. Engaging different disciplines also means that students learn to see situations from multiple perspectives. And on a very practical level, collaborations can increase funding opportunities. In short, the whole becomes greater than the sum of its parts.

The University of St. Thomas Model

Beginning in 2003-2004, the University of St. Thomas (UST) has offered courses in engineering, communication studies, and French which have been structured to include interdisciplinary collaborations with an international service-learning component in the developing world. These classes are part of the regular course work associated with each discipline and are conducted as regular classes. The only structural difference is that the subset of students involved in the international community based project meet weekly for a seminar-style meeting and the three groups of students travel (ten to fourteen days) to an international destination. Senior capstone and independent study classes have been used and lend themselves to the model because they incorporate inquiry and are by nature project-based. The supplemental seminar meetings are used to study the country's culture and current political and economic situation, to exchange project information between teams, and to discuss trip logistics. By working together in the seminars and on-site, the students are introduced to different disciplines and skill sets. The collaborative team works well within the senior capstone model because the students involved have the relevant disciplinary expertise to work independently on their portion of the project and are mature enough to appreciate different disciplinary perspectives. Important 'soft skills' such as teamwork are learned and practiced.

These projects have the added benefit of internationalizing the atmosphere at the home campus. The non-traveling students enrolled in the capstone courses who opt to work on more traditional projects, hear about the issues of a resource poor country, issues not usually covered in the traditional curriculum. In order to better understand the model at work, a detailed description of one of the projects is presented. In addition to the project presented here, other project themes following the same interdisciplinary collaboration model have included improving the yield of local food sources in the Caribbean, and solar water purification in Mali.

The Mali Project - Overview

In order to better understand the model at work, a description of the Mali Project is presented here. The focus of this project emerged from a grant opportunity to work in Mali and a subsequent fact-finding trip. During the trip a discussion with a Peace Corps volunteer emphasized the benefits an increase in rural women's income could have on the health and education of the community. From this conversation, contact was made with a U.S./Malian non-profit organization, Shea Yeleen International (SYI). The mission of SYI is to improve the economic situation of women in Mali, Africa by helping them form co-operatives in order to produce high quality shea butter. Shea butter is a local commodity with both a domestic and export market (Chalfin, 2004) and is used as a food product or as an ingredient in cosmetics. SYI also provides Malian women with production, finance, and business training. A partnership was formed between the University of St. Thomas (UST) and SYI. The major goal for UST was to find ways to support the SYI mission.

From the outset, the project was informed by the community partner's needs. The engineering students began to explore ways to increase the efficiency of the current production means by devising a hand-powered mixer that was culturally appropriate and sustainable. The design was to be based on simple technology using materials available in Mali at an affordable price. Just as with any engineering senior design project, the students examined alternative solutions, built and tested a prototype, and fulfilled both user and engineering specifications. Engineering students at UST are part of a program that promotes sustainable and responsible engineering and this project called on them to put these skills to use.

The communication studies students approached the situation from a different angle. They focused on the value of information sharing and looked for ways to inform Malians about the benefits of forming a women's co-operative. They were tasked to produce three informative videos to enable co-operative formation. The videos were produced in Bambara, the market language of Bamako and its surrounding areas. The guiding principle which shaped the videos was "Malians informing Malians". The videos featured women from an established, successful shea butter co-operative, government officials, civil servants, and a shea butter merchant. The women talked about what it was like being a member of a co-operative and discussed the benefits they experienced. The merchant explained the financial implications of being able to sell in the larger quantities produced by co-operatives (as opposed to the smaller quantities produced individually). The civil servants were from the governmental offices which legislate and oversee the laws governing the formation and management of co-operatives. They discussed the procedures involved in founding a co-operative.

The French team took on the role of cultural liaison and focused on the cultural barriers and opportunities for entrepreneurial women in Mali. Their job was to teach the other students about important cultural information about Mali and to assist with language needs. Additionally they researched how the history of Mali manifests itself in the present as part of their term paper. In tandem to the shea butter project, the French students also worked at Minnesota Advocates for Human Rights where they provided office and language assistance to refugees and immigrants from sub-Saharan Africa in particular. By doing this, they learned more about the areas of conflict and/or famine in Africa from real people, they learned about a variety of cultures in Africa, and they became familiar with the different French accents and linguistic nuances of people from francophone African countries. Another goal associated with their work at the centre was to reinforce the experience of a global world by broadening their perspective, working with Africans in the United States and in Mali. Once onsite, the French students functioned as translators and facilitated communication between their team members and the local people.

Additionally, prior to departure, students in the project had e-mail contact with Shea Yeleen and a shea nut importer in Olympia, Washington as well as face-to-face contact with local Malians through friendships and other professional ties. Each team focused on its responsibility throughout the first half of the semester in preparation for the onsite work which would take place over a ten-day period, mid-semester during spring-break. Once onsite, the nature of the project required students to work with a broad cross-section of people and develop new community partners. The engineering students focused on building and testing their prototype in a rural village. They verified the local availability and price of parts to ensure affordability, manufacturability, and maintainability of their mixer in the Malian environment. They received input from local blacksmiths, the village mayor, Malian scientists from the Institut D'Economie Rurale (IER, equivalent to the USDA), Malian members of the non-profit, as well as the village women (or end-users).

The communication studies students worked with the same rural women and members of the non-profit in addition to interviewing government officials, local merchants, and members of an already established and successful co-operative. The French team interacted with all the community partners through their work as language facilitators. The feedback from community partners was invaluable and made the reasons for needing a specified outcome (in product design or service) much more tangible and personal.

Follow-up Activities

During the second half of the semester, each team continued its work back on campus. The engineering team made the needed adjustments to the manual mixer and delivered the design instructions to SYI. The communication studies team edited their video

footage and engaged local Malians to supply voice-overs in the appropriate language. The educational videos outlining the procedures and benefits of founding women's co-operatives are now available in Mali at thirteen Community Learning and Information Centers (CLIC's), 21st century learning centers funded by the U.S. Agency for International Development in Mali (USAID-Mali). The French team presented a paper to the university's women's center focusing on relevant women's issues in Mali.

Engagement

The UST projects of the last few years are part of a bigger effort that began at Montana State University seventeen years ago and has since grown to involve five universities. This current project was the first year of a three-year grant (2004-2007) funded by USDA (United States Department of Agriculture) Higher Education Challenge Grant and CSREES (Cooperative State Research, Education, and Extension). The purpose of this funding was to increase interest and awareness of agricultural issues as well as provide meaningful mentored research to undergraduate students. Subsequently, the educational goals for the project were to provide undergraduates with the following: an opportunity to successfully complete a first field-based experience, an understanding of subsistence farming issues, experience in giving professional presentations, cross-cultural skills, an awareness of global perspectives, and an opportunity to consider careers in the developing world.

A second project funded through a separate three-year grant (2004-2007) provided by ALO (The Association Liaison Office for University Cooperation in Development) was designed to work in conjunction with the first. The second project provides funding for the education of a group of Malians who will subsequently start an entrepreneurial centre. This entrepreneurial centre will focus on small business enterprises which incorporate the products produced by the first project. The model for this small business centre is different from a US or European model. It is a development model that derives from cultural strengths and recognizes cultural weaknesses of the specific, potential entrepreneurial group in mind. In this way, projects such as the one described in this article are ultimately guided, informed, and in the service of the community partner's objectives and as such are more likely to be sustainable, meaningful, and successful.

Results of the Student Experiences

While no one definition for global competency exists, certain key elements are consistent. A globally competent person is someone who is aware of the world around him and who knows how to interact with people from other cultures. A globally competent person understands the interconnectedness of today's world and the importance of responsible decision making. The effectiveness of this and similar projects in terms of educating for global competency can be examined on two levels: 1) the substantive learning objectives associated with the course content and 2) the affective change and growth brought on by reflection on the personal and community experience. In order to stimulate and document reflection, students were asked to keep a trip log which was guided by a set of questions based on the activities in Maximizing Study Abroad (Paige, Cohen, Kappler, Chi, & Lassegard, 2002). The logs were collected after returning from the service-learning journey. Learning in the area of global competency involves unique and personal experiences that can not be easily captured by objective instruments, thus insight into student awareness is provided through these trip log entries. Trip logs from all the projects over a three year period, including two trips to Mali and one trip to the Caribbean, were examined for evidence of growth.

On Global Awareness

The projects in which UST engages are meant to increase understanding about issues in resource poor nations that affect the two thirds of the world not often included in traditional coursework. By their very nature, the projects expose students to a population, history, geography and culture of a different area of the world.

“Even though we were only there for two weeks, I feel like I learned a lot more, not only about the people in Mali, but also about myself and where I come from. This was the first time out of the US for me, and I realized that this trip was the first time I went around calling myself an American.”

“Before I had rarely thought of the politics or economics of Caribbean countries –they were just vacation destinations.”

“After this trip I am more aware of what is happening in other parts of the world. I tend to pay more attention to international news.”

“I learned a lot about Malian culture and appreciate a country that nine months ago I didn’t know about.”

“Prior to our trip, I researched Mali’s history, politics, and culture extensively. However, it wasn’t until I witnessed firsthand the daily lives of Malians that I finally grasped all that makes up Malian culture.”

On Interacting with Other Cultures

Encouraging students to engage with people from other cultures heightens their awareness of the subtle complexities of being globally competent. Working with a wide assortment of community partners provides experiences for thoughtful interaction.

“While we were eating I noticed how quiet it was. I learned that it is considered rude to talk while you eat. I think when the Malians are silent during eating they are showing respect for the women who cooked the meal. When you don’t talk, you are able to fully participate in eating and really sense the flavor and scents of the food.”

“I never imagined Mali to be anything like the US, so I guess I see more similarities than differences.”

“I looked at the chalkboard when we walked in (at the village school) and I was surprised to see molecular structures from chemistry and physics shift equations.”

“I saw a small rhesus monkey chained to a table. Although it was entertaining, I thought it seemed unfair. It’s weird how different cultures sympathize with different animals. Sometimes, I wonder who decides what is appropriate.”

“...A camel was traveling on the busy streets of Bamako with his Toureg owner. Interesting how these minorities (Toureg) adapt to the changing world yet are still confined with tradition –somehow reminded me of the Amish people.”

On Seeing Ones Role in an Interconnected World

Providing these unique learning opportunities for students helps them realize that there is a place for every professional to work on ensuring global sustainability and issues of social justice.

“I was made aware of the practicalities and necessity of speaking French.”

“The Mali project also broadened my awareness of the francophone world. The French language, though spoken by millions throughout the world, is too often associated only with the French.”

“I am more interested in engineering that has a positive impact on life”

“I feel like I am actually doing something important. I guess it makes me feel useful.”

“It has helped me decide what I want to do as a career.”

“The trip made me realize how important this project is to the women in Mali, at least to the women of Dio. I think I stopped thinking of it as “my senior project” and more as the project for the women in Mali...”

“Seeing who was actually going to use the machine helped me realize how much this could improve their lives by adding some more income.”

The Value of the Model

This paper introduces a unique curricular model that enables students to experience meaningful exposure to global issues. The collaborative nature allows faculty and students to learn about each other’s work while using their skills in the pursuit of important, appropriate, and real goals. This model can be adapted to most undergraduate institutions and can involve any disciplinary major with minimal restructuring. Students from majors with time constraints or majors that

seldom have opportunities to travel abroad can participate. The model requires enthusiasm of faculty, administrative support for international travel, and support from a local community.

The collaborative nature of the project may provide access to funding support. Students from majors with budget constraints such as the funding-poor humanities are connected to projects in disciplines with stronger financial support, such as the sciences or engineering. The interdisciplinary nature of the projects strengthens the student experience. Just as today's global issues can not be encapsulated and treated individually; global education should reflect the interdependent nature of the real world. Solutions are approached from many perspectives. Collaborations occur within and between the classes and go beyond the university borders as connections are made to community partners both locally and internationally.

The approach promotes the goals associated with education for global competency. Students are able to experience countries less frequented by Americans where English is not the first language. Cultural exchanges connecting a variety of people are made possible. Curricula and home institutions are internationalized as participating faculty and students disseminate their knowledge throughout the university. Course content shifts to incorporate issues facing resource poor countries. Students are reminded of their impact on the world and the importance of the outside world on them. Through the project lens, students examine issues of cultural diversity, social justice, and human rights and are more prepared to work as partners in a globally diverse reality.

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A Partnership for Literacy

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Introduction

Family literacy is one important aspect of education, deserving of attention by schools, universities and researchers. Morrow (2004), as President of the International Reading Association recently stated, "Schools need to view families as partners in the development of literacy." Morrow's statement and institution of a "parent coordinator" for every New York City school as one of the first acts by New York City's school chancellor are indications of the importance and attention paid to parent influences on children's school success. Chen and Dym (2003), describe a school and community project in which desire to learn computer technology was the motivating force for parent participation and ultimate school improvement. Recent calls for schools and teachers to collaborate in literacy efforts are not the first of their kind. For example, ten years ago, Handel (1994) called attention to family literacy and school-parent partnerships.

Initiatives in which parents become involved in school improvement take many forms. Chen and Dym (2003) report on a program in which they addressed parents' desire to learn English and to develop word processing skills, based on parents' experiences in the job market. Chen and Dym found that as parents learned about computer technology, they were stimulated to get more involved in school governance and voice their opinions and concerns (p.234).

Collaborations between educational institutions designed to be effective in meeting challenges of global competition include literature describing the benefits of professional development schools (PDS) for school improvement and teacher development (Goodlad, 1990; Holmes Group, 1990; Darling-Hammond, 1994; NCATE, 2001). School-university partnerships have "many faces," (Ravid & Handler, 2001). While the faces may change, Ravid and Handler classify school-university partnerships into models, including professional development schools, consultancies, one-to-one collaborations for research, and umbrella models that facilitate multiple projects and maintain multiple strands of connection. Wilburg and Lozano (2001) wove Darling-Hammond's (1998) principles of restructured schools into a model in which they indicate community outreach as an aspect of successful efforts at collaboration (p.168). Family literacy projects and school-university collaboration have taken many forms, including school, parent, and university collaborations such as the one described herein.

Setting

The school that took part in this collaboration is a typical urban public school with typical urban problems, located on the same block as a large urban renewal public housing project, in the shadow of a bridge, the dominant architectural structure of the neighborhood. The children who attend the school mostly come from the surrounding community. Families in the neighborhood are lower middle class, working poor, and receive public assistance. Of the school's current population of approximately 650 students over the past three years, the percentage of children eligible for free lunch has hovered around 90%. The ethnic breakdown of students reflects the composition of the neighborhood. The school's enrollment is 4% White, 19.2% Black, 33.7% Hispanic, and 43.1% Asian and others (NYCDOE, 2005, p.2). Sixty-four students, approximately 10% of the school population, are classified as English Language Learners. The school receives Title I funding, and implemented district literacy initiatives such as Reading Recovery, among other academic improvement efforts, with corresponding increases in test scores. Current school data indicate that between 2002 and 2004 the percentage of children in grades 3-8 who took the

English Language Arts testing met or exceeded the standards was 62% (138/222 in 2002) and 64% (100/169 in 2004) (NYCDOE, 2005, p.3).

Method

A long history of student teaching placements created a sense of mutual respect and trust between this school and the geographically nearest university, which is a necessary feature of high quality school-university relationships (Borthwick, 2001). Beyond student teaching, these relationships included participation field experiences in which the University used state funding to provide stipends for cooperating teachers and other research initiatives and grant funded projects. Proximity, the historically multiple strands of connection, and familiarity with administrators and teachers made it desirable for professors and education student teachers to think of the school as a convenient and desirable placement venue.

The project was developed when a funding opportunity was presented to the university. By involving the school's administration, staff and parents, it was determined that the University would offer its computing resources as a draw to parents, who might then become more active in the school's literacy goals. The proposal provided for separate but coordinated series of workshops for parents – one to introduce computer skills and word processing at the University's Computer Center, and the other at the school to familiarize parents with concepts and techniques being used for literacy development. Parents who wanted to learn about computers and technology were invited to attend free Saturday morning computer workshops hosted by the University's teacher education program. The second workshop series was designed to support classroom volunteers with training in classroom literacy methods at the school. After-school workshops met from 5-6 PM, when the parents picked up children from the after-school center. Student teachers were selected as tutors based on their demonstrated abilities in English Language Arts, and Business Education, Spanish or Chinese translation abilities, availability, and desire to teach.

Saturday computer workshops provided valued information about computers and technology that parents would not otherwise access. Workshop goals were for knowledge of computer concepts to support their children's computer use, and use of computers for the parents' personal and career development. Experiential learning theory (Kolb, 1984; Encyclopaedia of informal education, 2005) and adult learning principles, including Mezirow's (1978) conception of transformative learning, (cited by Imel, 1998), were considered in the planning process.

To gather initial information about the interests and needs of the parents, a questionnaire needs analysis, was administered during each year's first computer workshop session. This self-report survey provided information about the parents' educational attainment and current work status, their native language and facility in English, and their familiarity with computer applications, and their reasons for participating. The University liaison and the school's parent coordinator collaborated on an observation and interviewing strategy to keep informed of the parents' interests and issues that needed intervention with the computer lab staff. Parents responded anonymously in weekly evaluations which asked what they had learned, whether the workshops provided computer skills, and what they felt was the best and worst aspect of their experience in the workshops. Informal contacts and interviews with the parent participants, the tutors, and the school personnel also contributed information about the effectiveness and results of the program.

Outcomes

Based on the needs assessment and questionnaire results, the content of the series of ten to twelve computer workshops each year included a basic introduction to computers, file management, word processing skills, and access to the Internet. The request for children's compositions as practice material prompted the principal and parent coordinator to suggest that the parents who were participating in the computer workshops produce the school's literary magazine using the desktop publishing equipment available through the University. Class sets of compositions were submitted by teachers and served as typing and editing practice materials for parents. Topics

about the school's approach to teaching writing and the iterative writing process were purposefully integrated with file management, typing, and editing tools. Informal education in computer skills and English literacy ensued from adults and tutors discussing how to improve children's writing.

The computer workshops showed the parents how to edit documents using spelling and grammar checking tools, and how to highlight errors or enter comments and offer suggestions without changing the child's written work. The parents typed suggestions for editorial changes and elaborations on the content of compositions at the bottom of the page. As parents became comfortable with word processing, they experimented with other desktop publishing tools, like the scanner. The number and quality of the illustrations increased, and scanned artwork allowed the early childhood classes to contribute drawings and stories written in invented spelling.

As parents gained greater expertise in the word processing production arena, they also felt increasingly empowered to make content and theme decisions. Each issue contained messages from the Principal, the parent coordinator, and the University liaison. After the first year's issue, when the parents began to control the contents, each issue had a theme such as, "everyone is a writer," "memoirs," and "our community." Some of the workshops focused on the processes for making choices about the compositions to be included in the magazine, such as making sure that the selections were representative of each class in the school and that the selections supported the school's inclusive goals. Contributions were purposefully drawn from each class, from a representative ethnic mix of authors, and from parents and supportive staff. Since the literary magazine offered the school an opportunity to recognize its graduating students, the magazine devoted a special section for the eighth grade class' personal remembrances and messages of appreciation.

During computer skills and family literacy workshops each year, the individual pages were formatted as two columns, each column representing a separate page when printed in landscape. The pages were placed in order, a cover page was designed, and a mock-up created. Then the pages were duplicated and stapled at the center seam to create a booklet. At the end of the school year, the workshop's publication was distributed to students and parents. Copies were distributed by the school's parent's association. For each of the five years of its publication it served as the school's yearbook, placed on each seat at the June graduation ceremony.

Discussion

The parents' literacy levels covered a broad spectrum from non-completers of high school and GED students to those who had Associate Degrees. Most parents were originally Chinese and Spanish native speakers, who varied in English facility. The Chinese parents were not fluent in spoken English, often needing translation services. A few parents could touch type, but others had never used a keyboard and were literally afraid of the computers. It was apparent through the recruitment effort and through the questionnaire responses that curiosity about technology and recognition that word processing was an important economic skill were prime motivators for the parents' participation. At the beginning there was high interest, resulting in over-subscription by parents. The initially full classroom was reduced by attrition to the classroom's workstation capacity as the demands of jobs, other commitments, and the need to find babysitting services became onerous for some parents. As the three hour schedule on Saturdays became more regular, only parents who felt they were gaining valuable skills and knowledge and had a role in the project continued to participate regularly, until there were twelve persistent attendees. One indication of success was that of parents who persisted and came to multiple workshops, even the least able were successful in typing and printing short poems or stories. Over five years of production, a small core group of approximately six to twelve parents continued their involvement. These parents gradually assumed greater control over the form and content of the magazine. They determined the annual theme, selected and collated the documents to be published, and brought together the pages to organize the magazine.

As an example of collaboration between the school and a University in which all parties benefited, each segment of the school community was impacted by the project. Parents who participated in this project gained English language knowledge, computer skills, and empowerment through making a material contribution to the school's academic life. Engaging in this effort provided enhanced attention to their own and their children's literacy by participating parents and whole school community. The project helped return parents to the workforce or further education. Parents said that they felt their participation helped the school, and helped children gain in reading and writing ability. Of the twenty plus parents who participated, about half continued throughout the five years. There were parents who used the word processing, resume writing and Internet sessions to implement job search plans. Two parents successfully returned to work while participating in the workshops. There were parent participants who reported that they planned to return to college, and one parent reported taking and passing the test for a general education diploma (GED). Of the group of persistent parents, at least four became active in the school's Parents Association, taking on leadership roles. One of the most active parents over the five years of the project became a school aide. This project embodied the concepts of parent participation in that it gave the parents opportunities to make substantive contributions to the school. Their activities offer evidence of success in promoting parental empowerment.

While external funding supported the first year's program, during the following four years the University supported the tutors and hosted the program, and the university and parent liaison voluntarily ran twelve to fourteen workshop sessions each Spring at the University's Academic Computing facility, and a similar number of workshops in the after-school center. For the University, this project represented a way to contribute substantively to a K-12 school, advocating for its teacher education program by taking advantage of its facilities. The Dean became aware of the historical relationship with the school, and was inclined to support the continuation of the project, highlighting it as part of presentations to trustees. Student teacher placements grew over the five year period in which the parent project continued.

The student teachers placed at the school were aware of the project's existence, with many acting as tutors in the after school and Saturday sessions. The student tutors gained experience in teaching parents and in developing family literacy through computer skills training. The project provided reasons for increased visits to the school, a more substantial presence of student teachers and pre-service field experiences, and greater communication between all members of the school community with the University's faculty and administration. As education faculty, I organized and administered the project, and secured continuation funding from the University when the initial foundation funding ended. I developed personal and professional relationships with school personnel. The project was instrumental in my involvement in the School-University Collaborative Research Special Interest Group of the American Educational Research Association (2001, 1998). In multiple ways, the outreach from the university to the school provided means for improved relationships.

Conclusion

This account is meant to offer ideas for developing greater parental participation in literacy education within a school community and provide insight for those who are involved in collaborative projects involving schools, parents and universities. In all, this project provides an example of how a school and university collaboration creatively met the needs of its constituents.

The content of our educational effort was to include parents in support of their school's process writing approach by publishing the school literary magazine. We ultimately produced five issues, in which the children, teachers, administrators and parents had the opportunity to publish their stories, poems, memoirs, and artwork. The project also produced lasting relationships between teachers and faculty, school and university administrators, and strengthened relationships with

participating parents. For parents and educators who participated in various workshops over the five years, it enhanced their job-related skills, their proficiency in English, their understanding of the school's approach to literacy instruction, and their familiarity with the school's network of parent support mechanisms.

What is unique about this program is that it represents an instrumental attempt by a university, as part of an ongoing partnership, to provide support for a school's family literacy effort. It strengthened bonds between the school and the teacher education program by providing a reason for communication and cooperation between the University faculty and the school's staff. Student teachers and faculty had additional reasons to interact with parents, providing them experiences they would not have otherwise had. This project enhanced the University's reputation with the local community through its service. For some in the school community, production of the magazine represented a parent empowerment project, which involved parents in their children's education. It also represented entry to educational resources the parents would not have otherwise been able to access. For the whole school community, it provided tangible evidence of literacy growth and successes to be celebrated.

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Impact of Administrative Placement upon Programs

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Introduction

Supplemental Instruction (SI) is effective in improving selected college student outcomes such as academic achievement and persistence rates (Arendale, 2005, 2004). However, there has been little research concerning critical variables that may indirectly influence SI effectiveness. Of the SI research studies conducted, no research has focused on the potential influence of administrative placement of the SI program within the institution upon student achievement. SI is an academic enrichment program that increases student academic performance by targeting traditionally difficult academic courses that often have 30 percent or higher rate of D or F final course grades or withdrawals. Rather than focusing on high-risk students, all students are encouraged to participate voluntarily in SI. Facilitated by a fellow student, SI provides out-of-class study review sessions that employ active and cooperative learning strategies to create an enriched learning environment where students increase their mastery of the academic content material and concurrently develop cognitive learning strategies that are transferable to other classes (Martin, Lorton, Blanc, & Evans, 1977).

Purpose of the Study

The purpose of this study was to investigate factors that may have an indirect influence upon the effectiveness of the SI program to improve the academic performance of students. The focus of this investigation was on SI programs at postsecondary institutions in the United States that received training from the National SI Training Center located at the University of Missouri-Kansas City (UMKC). Exploration of this issue may help to explain why there are differences among SI programs throughout the U.S. regarding various levels of academic achievement for participating students. Data from this study may suggest that there is a preferred administrative placement for the SI program within an institution.

This narrow investigation is part of a larger issue within education. The professional literature, professional associations, and national conferences often identify exemplary educational practices for potential adoption by other institutions who wish to obtain higher student outcomes. However, it is uncommon to read literature that identifies the specific program activities or features that need to be observed to obtain the same results as reported by the original institution that created the educational practice. What practices may actually be ineffective or actually counterproductive to the desired results? What other variables may be involved in the success of the educational practice at the institution that created it that cannot be easily duplicated at other institutions? These are critical questions that must be answered. Data from this study may suggest that there is a preferred administrative placement for SI programs within an institution. It is essential that campus administrators carefully make decisions that maximize the benefit of SI for assisting students to be successful. In addition, increased persistence provides additional revenue for the institution.

Literature Review

There has been no published literature that directly addresses the issue of the administrative placement of SI programs. A limited number of citations address the wider area of academic support programs. Some authors have suggested that close coordination with both academic

affairs and student affairs enhanced the effectiveness of the academic support center in meeting the academic needs of students (Martin et al, 1977; Reed & Dozen, 1982; Skarkey et al, 1987). However, these discussions were mostly philosophical and not based on empirical evidence (Reed & Dozen, 1982). Roueche and Snow (1977) argued that both academic credibility and instructional commitment were higher when academic support programs had strong working relationships with academic departments rather than student affairs. Maxwell (1979) observed that a trend among large public universities was for the academic support center to be located under various units within academic affairs. However, Maxwell noted that there had not been significant empirical research concerning the potential impact of this decision.

Due to the limited and dated nature of the previous references, the review of literature was broadened to detect any other examinations of administrative placement of programs in higher education. Greenlaw, Anliker, and Barker (1997) studied the administrative placement of new student orientation programs. Nearly two-thirds of the programs were located within student affairs with the remaining responses divided between academic affairs and other governance systems. While academic affairs provided more stable budget appropriations, higher faculty support, higher credibility, and greater emphasis on academic issues, location within student affairs fostered other advantages according to the researchers. The most frequent responses regarding the advantages of student affairs were more resources to support the program, more freedom to experiment, and greater holistic student development. The authors argued that appropriate placement of orientation programs was often a function of the local campus culture and institutional mission. They did not argue that placement under one administrative unit was universally superior to any other. However, they admitted that they did not test their theory with empirical data.

Other authors have extolled the benefits of programs that drew upon resources from both academic and student affairs (Brown, 1989; Gardner, 1986; King, 1993; Mullendore & Abraham, 1994; O'Brien, 1989). Schroeder (2005) echoed these recommendations by arguing for close collaboration between academic and student affairs units. From Schroeder's perspective, collaboration requires significant involvement by both units rather than a simple cooperative arrangement where one institutional unit is permitted to exercise operational control within another unit's traditional territory. A review of the ERIC database found several references to reports concerning administrative placement of student service programs within the institution. Liston (1982) presented a rationale for placement of counseling functions under student affairs. Ebersole (1974) explored the relationship of the dean of student services and their direct reporting status within the institution. However, if both of these cases, little empirical data was presented to verify the assumptions of the authors. Two national surveys studied the administrative placement of academic support programs. However, neither of them studied the relationship between administrative placement with student outcomes (Boylan, Bingham, & Cockman, 1988; Lissner, 1980). When national research has been conducted concerning the effectiveness of academic support programs, the administrative placement of the unit had not been a variable considered in terms of understanding the differences in program effectiveness (Kulik, et. al., 1983; Morante, 1986; Rosen, 1980; Roueche, 1983; Somers, 1987).

Method

This study assessed SI program implementation through its administrative placement within the institution. King, Morris, and Fitz-Gibbon (1987, p. 9) argued that limiting evaluation to only program outcomes can potentially answer only the question of whether the program worked or not. They argued that the focus should be placed on the deeper question of what worked and what did not and how those variables contributed to the final outcome. Program implementation research focuses on the process of the intervention rather than only on the final product and potentially can yield much valuable information to permit program revision and improvement. This type of research has never been conducted regarding the implementation of the SI program.

There were four dependent variables. The first was the mean grade difference between the SI and Non-SI participants. This displayed the difference in mean final course grade between students who either did or did not participate in the voluntary SI program. A higher positive number suggested that the SI program was more effective in increasing mean final course grades for participants. The second variable was the mean percentage difference of D and F final course grade and course withdrawal rates between SI and Non-SI participants. This displayed the mean difference in the grade between students who either did or did not participate in the voluntary SI program. A higher positive number suggests the SI program was more effective in reducing unsuccessful final course grades. The third variable was the SI participation rate. This was the mean percent of students who voluntarily participate in the SI Program within a class that offered the program. A higher number was desirable since it indicated that more students participated and used in the program. The final variable was the satisfaction level of the SI program. This rating was determined by the campus SI coordinator. This variable sought to ascertain the satisfaction level of this administrator with the SI program regarding whether it had reached its optimal operating level and was achieving desired student outcomes.

There was one independent variable. This was the administrative placement of the SI program within the institution. There were six categorical choices for this variable: academic affairs, administrative affairs, enrollment management, joint reporting to academic and student affairs, student affairs, and other.

Procedures

The list of faculty and staff from the 735 institutions who received training by SI staff was obtained from the National Center for SI at UMKC. Each person on the list received a packet containing: a cover letter from the researcher and a copy of the survey instrument. The instrument included various types of responses to the questions: fill-in-the-blank (e.g., contact information, mean difference in grades, percent utilization of SI), Likert Scale (e.g., satisfaction rating of the SI program), and forced-choice (e.g., administrative location of the SI program). The subjects who did not return the completed packet within three weeks of the due date received followup encouragement to participate. The completed questionnaire packets were returned by administrators from 380 institutions during 1999. SI programs which had been cancelled were eliminated from the study since most reported that the original SI coordinator had left the institution and program records were not available.

Data Analysis

The research question was investigated through a one-way analysis of variance between the one independent and four dependent variables. The independent variable was the administrative placement of the SI program (academic affairs, administrative affairs, enrollment management, joint reporting to academic and student affairs, student affairs, or other). The four dependent variables were the SI program outcome variables (mean final course grade difference, mean percentage of D, F and W final course grade, SI participation rate, and SI satisfaction level).

Results

The SI programs were analyzed regarding the relationship of SI program administrative placement (independent variable) with the student outcomes (dependent variables). A one-way analysis of variance was used with the data. There were no statistically significant results between the independent and dependent variables at the .05 level of significance.

Discussion

This investigation of Supplemental Instruction programs at nearly 400 postsecondary institutions in the United States tested with the following null hypotheses: There is not a statistically significant relationship between administrative placement of the SI program with higher academic achievement of SI participants in comparison with Non-SI participants, higher SI program participation rates, and higher satisfaction ratings with the SI program by the campus SI coordinator. The null hypothesis was accepted. The question of administrative placement is a

common one raised during SI Supervisor training workshops at UMKC. Some reports in the professional literature had speculated that placement under academic affairs would have been more beneficial since the perception was that this unit commanded the most prestige and financial resources. Others had suggested that student affairs would have been the better site since academic support programs are often located within this division due to its focus on student development.

There are several possible explanations for no statistically significant difference between the different categories of administrative placement and the four SI program outcomes. The first is that there actually is no difference and that the findings are valid and reliable. The second is that the unique campus culture on individual campuses is more important to support of a successful SI program than administrative placement. The third possible answer is that the methodology for collecting the information was flawed through both the survey instrument due to its moderate level of reliability. The final potential reason for not finding a relationship is that more information must be collected for a more sophisticated analysis. Perhaps placement of the SI program under academic affairs at public four year institutions would result in statistical significance while placement under student affairs might be significant at public two year colleges. This level of analysis may require cross-institutional variables such as institutional characteristics, curricular characteristics, faculty environment, and the student peer environment.

Conclusion

While there has been many studies concerning the effectiveness of SI programs regarding student outcomes, none has been published about institutional factors that may have a direct or indirect influence over the same outcomes. This study selected one potential factor, the administrative placement of the program within the institution, for investigation. Results from this national study failed to identify a statistically significant relationship between administrative placement and student outcomes. This was a surprise considering the debate within the professional literature about the purported advantages of preferred administrative placement of programs. This finding encourages a more sophisticated program implementation analysis of the SI program to identify and understand the activities within the program as well as outside factors that may influence the student outcomes.

Implications and Importance of the Study

The result of this study added new knowledge regarding variables that influence the effectiveness of SI programs. This study also presented more questions that need to be investigated to confirm this study and to extend it with more sophisticated levels of inquiry. As a result, more encouragement is provided for further research that investigates other campus cultural factors that might have a more influential role with success of academic support programs like SI. This study may also spur similar studies for tutorial and other forms of academic support.

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Detective Fiction and Forensics in Collaboration

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Learning is not a spectator sport. It requires students' direct and active involvement and participation.

--Johnson, Johnson, and Holubec
Cooperative Learning in the Classroom

Westminster College kept the above philosophy firmly in mind when it changed its general education curriculum in the mid-1990s. Faculty and students alike felt the structural shift from individualist to cooperative and collaborative learning, from competitive teaching and learning environments to team-based teaching and learning environments. This new structure challenged the entire campus community to reach across long-established pedagogical boundaries and beliefs, bring connections between disciplines into sharp focus, and move toward what Kenneth Bruffee calls an environment in which students can “govern themselves in a context of substantive engagement, conversation, and negotiation” (89). To launch a curricular change of this scale and to demonstrate the possibilities of interdisciplinary cooperative and collaborative learning communities, Westminster introduced the cluster course—two courses from two different disciplines offered in the same semester, taken by the same group of students and linked, for example, by common themes, topics, goals, outcomes, shared assignments, presentations, papers, or exams. The Detective Fiction and Forensics cluster, the subject of our case study here, demonstrates that the shift from old to new paradigms of teaching, like the one that Johnson, Johnson, and Smith lay out in *Active Learning: Cooperation in the College Classroom* (6–12), is possible not only within one college classroom but also within an interdisciplinary structure.

Like cooperative and collaborative learning, the cluster is not a new concept. In 1975, Clark University initially developed a model for clustering courses through grants from the National Endowment for the Humanities (Anderson 311). Since its inception, several variations on the original cluster concept have been put into practice. UCLA, for instance, offers a three quarter cluster course for first year students as part of the general education curriculum which focuses on an interdisciplinary topic and is team-taught by four faculty from different areas of expertise (Cornwell 9). At Babson College, the cluster model is used to integrate professional education and liberal education, sharing common content among three different courses (Anderson 317). Westminster's cluster model links two courses from two different disciplines. By confining the cluster to two courses, a balanced is achieved between depth in a single discipline and interdisciplinary investigation.

With the two course model, the two professors teaching the courses can often attend each other's classes and participate in discussions and in-class activities. In this way, the students see faculty as learners too, sharing the risks of looking at something in a new way, asking questions, and applying knowledge to wider contexts. The faculty meet with the students twice as much as they normally would in a semester, and, consequently, get to know them better. Because the students are together more, working toward common goals, they also get to know each other well. The result is a supportive, safe atmosphere that encourages different opinions and viewpoints and stimulates interest. As David and Roger Johnson point out in an interview with Beth Panitz, “Hundreds of studies indicate that when students work together cooperatively, they like each other better; they care about each other more; they're interested in each other's success and well-being; and they feel more accepted” (41). We strive for this sense of community where the students and faculty work together to discover connections between the courses and relationships between two seemingly disparate subjects. Course titles like African American History and the Origins of Jazz; Changing Visions of Delinquency: Literature and Sociology; Native

Expressions: Landscapes of Spirit and Stone; and Narratives and Numbers hint at the creativity and adventurous spirit behind the cluster course at Westminster College.

The cluster course, Tracking the Criminal through Science and Literature, links ENG 107, Detective Fiction, and SCI 150, Introduction to Forensic Science. It sprang, in part, from a conversation between two colleagues over lunch and in part from an awareness of what was swirling around in the popular culture, i. e. the tidal wave of interest in detective stories and television forensics shows. According to the New York Times, television coverage “made sensational crime news a permanent part of the national conversation” (Applebome B5). Consequently, our cluster evolved to some extent out of the public’s fascination with crime.

Each course can be taught as a stand-alone course with its own objectives. However, when the courses are clustered, an interdisciplinary focus emerges. As a learning community, the students and faculty together evaluate the role of forensics from both literary and scientific perspectives. The students work in interdependent teams with a shared goal, hold each other accountable for the workload, use interpersonal skills to communicate with each other and “process as a group how effectively members are working together” (Johnson, Johnson and Smith, iv). But beyond the ingredients for successful cooperative learning, the cluster incorporates collaborative learning skills by shifting the classroom/lab authority to the student groups, which, as Bruffee states, “helps them learn the substance at issue not as a set of conclusive facts but as the constructed result of a disciplined social process of conversation, inquiry, and negotiation” (90). When possible, we schedule these two clustered courses back-to-back on the same day in the same classroom, thus creating a sense of community even with the physical space, maintaining the continuity of the subject matter, and slicing a block of time according to the dictates of the material and assignments.

As a stand-alone course, SCI 150 fulfills a lab science requirement as part of the Liberal Arts curriculum at Westminster. According to the college catalog description, SCI 150 is “a study of the science behind forensic investigations” in which “case studies are used to link the science with real world examples” and “laboratory experiences involve using forensic analysis techniques to solve a ‘crime’” (227). The primary text is Richard Saferstein’s *Criminalistics*; supporting materials include *The Casebook of Forensic Detection: How Science Solved 100 of the World’s Most Baffling Crimes*, *Dead Reckoning: The New Science of Catching Killers*, Discovery Channel’s *Forensics Files*, and A&E’s *Cold Case Files*. Current events, such as the Laci Peterson case, provide interesting examples and a platform for in-class discussion.

SCI 150 fulfills the objectives of the lab science requirement by using concepts in forensic science to exemplify the scientific method. Important forensics topics covered in class include processing the crime scene, Locard’s Exchange Principle [1], and class versus individual evidence, to name a few. Practical forensic considerations regarding fingerprints, arson, firearms, and document examination are also discussed. One should not be led to believe, however, that SCI 150 is a fluff course. Difficult scientific areas, such as statistics and probability, genetics and the role of DNA fingerprinting, toxicology, and chemical instrumentation, certainly challenge the students. Weekly lab meetings provide the students hands-on experience with various forensics techniques covered in lecture.

Detective Fiction as a stand-alone course examines American and British detective fiction and the cultures in which these texts (both literary and filmic) are created. We analyze the American “hard-boiled” approach versus the British “arm chair” approach to this genre, looking at characteristics which include narrative structures, plot devices, themes, stylistic flourishes, characterizations, and the function of detective heroes within the stories. Students have the opportunity to research and read the major writers of detective fiction and explore how many of these authors have used detective fiction

as social commentary, and, how, at the very least, their texts reflect the values, achievements, and social structures of their time.

For both SCI 150 and ENG 107, the emphasis shifts slightly when these two courses are clustered. The essence of the cluster experience is the opportunity to cross disciplinary boundaries with linked assignments and, as Deborah DeZure writes, “work toward a synthesis—a new, more comprehensive view than allowed by the vision of any one field” (par. 3). Syllabi for both courses reflect a collaborative effort in the design of this cluster. Working together, we decide which assignments will be linked and how they will be linked. In the cluster, we look at detective fiction through the lens of forensics and forensics through the lens of detective fiction. The logical focus then becomes how authors use forensic science in their novels, providing students with a chalk line that directly connects the two courses.

Reading the texts chronologically maintains this clear connection between the courses. Starting with the earliest novels, like Sir Arthur Conan Doyle’s Sherlock Holmes mystery, *The Hound of the Baskervilles*, and moving forward in time illustrates the evolutionary arc of forensics techniques in literature and parallels the scientific history that the students learn in the forensics course. In this way, students can do a bit of investigating themselves, as they read to see whether a writer has included the latest forensics techniques of the day in any given work. The movement from the great British writers of detective fiction to their American counterparts points up the differences in the method and extent to which these two styles incorporate forensics. To demonstrate, a typical semester reading list (ENG 107) with corresponding forensics emphases (SCI 150) might look something like this:

- Sir Arthur Conan Doyle, *The Hound of the Baskervilles* (novel) and film adaptation
 - o History of Forensics
 - o Method of Observation
- Agatha Christie, *Murder on the Orient Express* (novel) and film adaptation
 - o Evidence and Clues
 - o Power of Deduction
- Dorothy L. Sayers, *Have His Carcase* (novel) and film adaptation
 - o Serology
 - o Preservation of Evidence
- P.D. James, *Death of an Expert Witness* (novel) and film adaptation
 - o The Forensics Laboratory
 - o Biological Specimen Analysis
- Dashell Hammett, *The Maltese Falcon* (novel) and film adaptation
 - o American Hard-Boiled Detective
 - o Use of Fate not Forensics
- Jeffery Deaver, *The Bone Collector* (novel) and film adaptation
 - o Modern Forensic Technology
 - o Processing the Scene
- Patricia Cornwell, *Portrait of a Killer: Jack the Ripper Case Closed* (non-fiction) and one film adaptation on Jack the Ripper
 - o DNA Fingerprinting
 - o Criminal Profiling
 - o Document Examination

When applicable, we watch the film adaptations of these novels and discuss how directors bring the forensic techniques to the screen. As we have noticed, students are

quick to point out the forensic faux pas in both the novels and the films, and they've found some glaring mistakes since fiction is not necessarily guided by scientific accuracy but rather by the demands of telling a good story through plot and character. On the other hand, their knowledge of scientific forensic techniques helps them better appreciate writers and directors who take the time to do their research and get it right, using forensic techniques to build a good "puzzle" and capture our imagination. Jeffrey Deaver's *The Bone Collector* typifies both nicely. In classroom discussion, the students note that a rookie cop with no formal training would not "work the scenes" of an important case as Deaver fictionalizes but also observe the accurate detail with which Deaver describes soil analysis by gas chromatography-mass spectrometry.

Guest speakers supplement the texts by bringing expertise and real-world examples to the classroom that we are not able to provide. These guest speakers strengthen the link between the two courses as they provide a unique venue for the students to explore both literary and scientific perspectives. Opportunities to learn from the experts give the students the knowledge to read detective fiction more critically and also to understand the practical application of forensics techniques. Through local or alumni connections, we have been able to bring in a variety of guests, including a district attorney, a forensic odontologist, a DNA expert, and a retired FBI agent and crime writer. Guest speakers like these exemplify consultation in education at work.

Linking the assignments in the cluster requires consultation and collaboration on the part of the professors. Quiz and exam questions specific to each course reflect the cross-disciplinary nature of the cluster. On a SCI 150 quiz, for example, students are given a list of forensics terms, such as control sample, class characteristics, and forensics pathology, and asked to provide a definition and a specific example related to each concept from P.D. James' *Death of an Expert Witness*. Presentations in Detective Fiction include a review of the forensic science at the time the novels were written while each Forensic Science class begins with a list of forensics topics referred to in the previous ENG 107 meeting, serving as a physical reminder of the connection between the two courses. The final exam also reflects a synthesis of both disciplines. During the exam period, we put the students into small groups, and randomly assign each group two forensic techniques (from a previously supplied review list). The students are able to use their texts and notes to pull together a presentation explaining each forensic technique, illustrating them with specific examples from the detective novels. We utilize a question and answer period following each presentation to assess the group's deeper understanding of the subject and/or to probe an individual's comprehension of the material. Using a rubric sheet that lists our grading criteria for the final, the professors independently evaluate the students' work during the presentations, and then compare and discuss the grades immediately after the exam.

The two major papers required for Detective Fiction integrate knowledge from both disciplines. For their first paper, students are given a list of seven topics, each one allowing them to analyze the conventions of the classic detective story, the characteristics and methods of the writers and their famous sleuths, as well as the forensics techniques involved. Here's an example of one:

*Write a paper in which you analyze how a modern day forensic scientist would solve the case of *The Hound of the Baskervilles*, always comparing the modern methods to what actually occurs in the novel/film. Include specific references to the novel and film adaptation to illustrate your points.*

The second paper, discussed below, directly ties into what we consider the culminating cluster experience, the mock crime scene, which nicely links Forensic Science and Detective Fiction. Here's an example of a typical crime scenario:

The table was set for ten. Only nine sat down.

The President's wife bustled to and fro from the kitchen to the dining room, fussing about the snacks for the Westminster College Faculty and Staff Social Committee meeting. She had two people from the committee helping her, but they were mostly standing around talking to the others, who were busy stuffing hors d'oeuvres into their mouths and swilling soda—especially the Dean. Today, the group was planning an end-of-the-year mixer, and the President's wife graciously had agreed to play hostess. She'd been apprehensive at first. Academics were a tough bunch, no doubt. Add the staff, and, well, just no telling where this might lead. She surveyed the room and noted the high spirits. It might not be so bad. Everyone seemed relaxed, laughing, into their conversations. Finally, someone decided the meeting should begin, and about 10 minutes later, people started finding their places around the table and began to skim the agenda before them. "Wait. The Dean's missing. So is Jim Perkins," one of the members noted. As if on cue, Perkins, a senior faculty member, burst through the patio door into the dining room. All heads turned, eyes locked on their colleague. He stood for a moment, looking shaken and stirred, until his voice cut through the silence. "The Dean is dead," he murmured numbly and slid into the nearest chair. Twenty minutes later, the W-CSI team was on the job.

In the mock crime scene, we develop a careful plot which requires the students to use the forensics techniques learned in class/lab and also to observe the scene with the keen eye of an author. The crime occurs on the campus where a willing victim is "murdered," as in the above "Case of the Dead Dean." Evidence is planted, and faculty, staff, and administrators serve as suspects or witnesses. Prior to the crime, the students organize themselves into groups with team leaders. One group processes the scene by recording the scene and collecting evidence. Another group serves as a lab group, analyzing evidence and writing reports. A third group works as investigators, interrogating suspects and witnesses and putting the pieces together with the forensics evidence to reconstruct the scene.

While such a mock crime scene might appear to be a frivolous task, the professors and team leaders set the tone. To help ensure seriousness, we establish guidelines and expect proper procedures from the students, including maintaining a chain of custody record on all evidence and obtaining search warrants (to avoid trivial bothering of participating staff). Historically, the students have taken the mock crime scene very seriously and have worked in collaboration for many hours outside of class time to arrive at a likely sequence of events. In fact, the most recent class arrived on scene in professionally printed "W-CSI" t-shirts, which they had made on their own, demonstrating their enthusiasm for the crime scene scenario.

While investigating the forensic aspect of the mock crime scene, the students are also trying their own hand at detective fiction. They write a short story that corresponds to their findings of the mock crime scene with consideration given to the elements of the crime novel, including plot, pacing, characterization, motivation, theme, and the careful

application of forensics. This assignment compels the students to demonstrate a synthesis of both scientific and literary perspectives. To showcase the students' work from the mock crime scene, we invite the entire campus community to attend a poster presentation and find out "who done it." The individual teams pull their work together and create posters covering the scene and evidence, forensics analyses, and investigation results. The students' short stories based on the scene are also on display for the public to read. Tremendous support from faculty, staff, and interested students demonstrates the appeal of the interdisciplinary cluster course.

The cluster course, *Tracking the Criminal through Science and Literature*, presents the student with both scientific and literary perspectives. Through SCI 150, students become familiar with the principles and practice of the scientific method in the context of forensics. Through ENG 107, students become versed in the literature of British and American detective fiction and the cultures which inspire these works. By clustering the two courses, however, new values for the students arise. Working in an interdisciplinary community, with a new paradigm of cooperation and collaboration in teaching and learning, students leave *Detective Fiction and Forensics* with the skills to read detective fiction and current criminal cases with a more critical eye as well as to understand forensics and its limitations. They develop an appreciation for interdisciplinary investigation and recognize that issues should not be approached from a single perspective, that each disciplinary perspective has its own weaknesses and limitations. Through cooperation and collaboration, they learn how to work together toward a common goal and assume responsibility for each other, themselves, and the learning process.

Note

[1] Locard's Exchange Principle refers to a cross-transfer of evidence among suspect, victim, and crime scene.

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Lit circles, collaboration and student interest

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Teachers often find student interest in reading wanes during the middle school years. Even students who seem to enjoy reading find that other interests interfere with their desire to pick up a book. Yet the ability to comprehend what one is reading and to go beyond the surface text to make inferences are skills that are crucial for continued success in school and ongoing learning. Helping middle level students learn to analyze and think critically about what they read is essential to their success. Students who do not read for pleasure but only do so when they are completing school assignments is a problem that can affect students' future learning and academic success (Sullivan, 2002). It is important prevent this growing tide of aliteracy, the condition where one has the ability to read but chooses not to (Sullivan, 2002). Because of this concern, the goals of secondary language arts education are to get students interested in reading and to help them find enjoyment in reading and talking about books. Working collaboratively is another skill that young people need to develop. Most individuals like to get together and talk about what they are interested in and what they find enjoyable. This is also true with books. Book clubs are surfacing everywhere because people who enjoy reading are finding ways to talk about what they read. Lit circles have been identified as a means of developing this collaborative process in the classroom.

This focus on student engagement in discussions of readings as well as higher-level thinking should be strong components in language arts classes. Indeed, the "literature centered reading-as-thinking mentality is . . . reflected in some state standards and assessments. Some progressive states like Michigan have mandated that (students) be able to 'connect what they read to their own lives' and other goals harmonious not just with skill development but true lifelong reading" (Daniels (2002, p. 5). Students who develop these skills also do better on standardized reading tests. While much of the research has been in elementary classrooms or focused on other outcomes, Daniels' research did have positive results. In his study, eighth grade students in Chicago who were in classrooms where literature circles strategies were used scored 10 percent higher than students in other city schools on the city-wide reading test (Daniels, 2002, p. 8). However, none of these positive results can be accomplished if students are unwilling to read.

During a literature circles exploration in a college methods course, pre-service teachers raised questions about the benefits of literature circles for early adolescents. These future teachers wondered if providing choice and peer-lead discussions via literature circle methodology would 'hook' middle level students – getting them to read more and enabling them to discuss what they read at a higher level. They wondered if pre-adolescents could truly collaborate and critically discuss literature without the daily guidance and direction of the teacher. In response to these questions, an investigation was begun. Two teachers from a small, suburban middle school agreed to collaborate in this process. The students in their three sections of eighth grade were predominantly from middle class families. Many of the students were struggling to find success in the language arts class – with grades consistently falling in the low C and D range. According to their teachers, this was often because these students did not complete the reading assignments. There was very little cultural diversity among these students, (the classes enrolled one African American student and one Latino student) although there

was a wide range of academic ability. The teachers for these classes had never used literature circles, preferring to utilize a teacher-directed, whole class approach to the study of literature. These teachers voiced concerns about their students' disinterest in reading and lack of involvement in class discussions. They wanted to find 'a better way' to engage all of their students in reading. We decided to try literature circles as a method, using Daniels' (2002) book as a starting point.

We began by creating a survey that was designed to gather information about students' interest in reading and discussion of literature. We wanted to see if there would be any difference in scores on this student interest survey following the implementation of a literature circles unit, and whether the students preferred working together or individually when reading and discussion literature. The survey was the start of a 9-week, team-taught literature circles unit. Using Nancy Atwell's ideas about student choice in book selection (Atwell, 1989) and incorporating an adaptation of Daniels' role sheet process, (Daniels, 2002, chap 7) we developed a unit that gave students a choice about which novel they read and also used literature circle discussions conducted by the students. With a range of reading abilities present in the room, we sought to differentiate the level of the texts selected. As Tomlinson has stated, varying the books based on readability offers students the opportunity to meet objectives while engaging in a novel that fits their skill level (Tomlinson, 2001).

In selecting our sets of books, the readability of each book was a determining factor, as well as a link to the theme of 'survival'. The teachers had used the survival theme previously with a single text, so we decided to use it as an over arching theme, a connection between all of the books students would read. We began the unit with an exploration of the concept of survival, linking to current television programs as well as current events. The survey was given to each student to complete, asking them to identify their reading habits and interest. This same survey was to be given to students at the conclusion of the unit. The results of this pre-test indicated that only about half of the class expressed an interest in reading, while 36% of the class agreed that they 'prefer to do anything other than read'. In addition, the class was split regarding how comfortable they were with sharing ideas about books and discussing literature with their peers.

Throughout this unit of study, mini-lessons were conducted that provided an opportunity for students to learn and review various reading skills as well as group interaction skills. Practice in using the role sheets and understanding what was expected from each role was also included early in the unit. Using short stories, students were asked to complete abbreviated role sheets (Daniels, p. 107 & 112) so they could practice discussions guided by the teachers. Collaborative skills were also identified as a focus for this unit. Students practiced interaction and discussion skills before they launched into their literature circles study through mini discussions on brief readings. These were followed by debriefings about how they worked in groups and what they could do to enhance their peers' interactions. Because increasing students' ability to work effectively in groups was an objective, team building activities were also conducted and connections were made to the concept of survival and the necessity of relying on others at many times to survive in various situations. After each regular literature circle discussion, students were asked to assess their own and the group's effectiveness. Class time was also spent reviewing how to ask open-ended questions (rather than closed, fact-based questions) and looking at connections between the literature, current events and personal experiences in order to enhance the roles of questioner (discussion director) and the researcher (investigator). Other mini-lessons focused on the review and introduction of literary terminology. In their book groups, students were given definitions and terms in puzzle form and had to match them to complete the puzzle. Examples of

the terms were located and shared, and students were asked to find examples from the books they that were reading. About three-fourths of the way into the unit, each literature circle group wrote a group essay using self-selected literature terms and applying them to their book by locating and describing examples. The student work that was produced during this time identified that students were meeting the objectives regarding their ability to use literary terms in discussing their books, and to think at higher levels.

Perhaps the most excitement was generated when the students exchanged journals and role sheets to create a quiz for another group. We talked about 'fair' questions, 'content' questions and 'application' questions, and the students were excited to take their peer-developed quiz and to see how other teams did on the assessment they created. At the heart of the unit were the student discussion groups. Early in the unit, students were given a 'book talk' and read brief sections from each book. Students were allowed to choose their own book, identifying their 'top three' choices. As teachers, we took into account student ability and social relationships to establish groups that were somewhat balanced.

However, some students with less ability selected more complex books, while some students who might easily read Steinbeck chose texts that were not as challenging. We honored the students' choices, and groups were formed based on their selection, with individuals getting either their first or second choice book. Each group then established a schedule of reading, based on the dates we set and the end date for the unit. In excerpts from the group essays, you can see student understanding of literary terms in their writing. Reading *The Outsiders*, by S. E. Hinton, a student contributed this statement to his group essay on conflict: "Person vs. himself/herself type of conflict is when a character can't decide what to do. An example of this is when Ponyboy doesn't know if he should tell Darry and Sodapop where he is or not. It is an example of the literary term because it tells us that Ponyboy is puzzled about what he should tell his brothers. This has impact in the book because Ponyboy wants to get closer to Darry but doesn't know how to make it happen, and that causes all sorts of problems." And while reading *The Pigman*, another student wrote, "First person point of view uses 'I' when telling the story. This gives you a good idea of what the person is really feeling. If *The Pigman* was not written in first person, we would not have gotten the in-depth look at what each of the two main characters were thinking and feeling."

In another assessment, the reader response journal, you can hear students make connections between the book and their own lives. From a group reading *Shark Beneath the Reef*, a student wrote in her journal, "The author does a nice job with suspense in this chapter. When Tomas goes down in the water for so long I get nervous, especially when he saw the shark's tail. I would've been really scared and swam away." From a student reading *Charlie Skeddadle*, "I thought it was cool the way she described the snow. She says that 'it glistened and made the mountains look beautiful.' I thought that was important because then the reader can picture the scene in their head. She (the author) uses this kind of describing throughout the entire book." Yet another student wrote, "I think *The Outsiders* is a great book filled with adventure and real life. It shows the meaning of friendship and family. When Johnny writes that letter to Ponyboy I finally understood something that I hadn't before. When Johnny said 'Stay gold, stay gold.' He wanted Ponyboy to stay good the way he was."

Throughout the unit, it was clear the students were thinking about what they were reading in more thoughtful, critical ways. In one role sheet, a student completing the 'connector role' wrote "In *The Diary of Anne Frank*, you can see why they (the people in hiding) are arguing because they've been stuck together for too long. When I'm with my friends for a whole day or overnight, we sometimes get sick of each other." On another role sheet, the discussion director for a group reading *Charlie Skeddadle* moved beyond the 'so what happened?' question and asked deeper questions about the book such as: "Why was Charlie sad after he killed a soldier when that was what he said he wanted to do all along?" These questions, and others like it, produced interesting and insightful conversations among the students. We were all pleased that the students were

working so hard and really thinking and talking about what they read. This certainly didn't mean that every day was a smooth ride. Some groups got off task easily and we constantly had to circulate and help them re-focus. Some students did not spend the time preparing their daily work and were chastised by their peers for their seeming 'lack of effort'. We found that we had to return to our team building and group interaction lessons frequently to help groups work through their differences. Because the students were producing role sheets and journals and group response, we were able to gather lots of anecdotal evidence about their work. Rubrics were used to score all of the student work, and everything was kept in a portfolio so each group had a record of all of its work.

At the end of the unit, students took the same survey that they did at the start of the unit. There were 66 students who took both the pre- and post-tests. Student scores were coded and the names removed. Eyeballing the scores, it was evident that there were some changes in student response to the questions between the pre- and post-test. However, there was not an overwhelming shift in scores, so what these changes meant was unclear. The difference between the pre and post-test was calculated for each student's response to each question, and a Wilcoxon Matched-Pairs Signed-Ranks test was conducted to see if there was any significant change in student responses after the literature circles unit. The z scores calculated for all questions identified that the change was not significant for any of the questions. Finding no significant difference in scores was interesting to the investigators. While we didn't have statistical support for literature circles as a means of enhancing student enjoyment of reading or peer discussions, the teachers agreed that it had appeared that the students had been enthusiastic readers during our unit. Even though we had observed highly engaged student conversations and reviewed thoughtful written work that seemed to reflect interest and involvement on the part of the students, there was no evidence that this method correlated with greater student interest in reading or preference for collaborative discussions. Our curiosity aroused, we went in search of 'the rest of the story' and decided to look at student responses on an individual level.

As we discussed our findings, we felt it was important to learn more about why some students seemed to be less excited about picking up a book to read at the conclusion of the literature circle unit, as well as why some seemed a bit more interested in reading. The survey results were reviewed, focusing on the questions related to interest in reading. Any score for these questions that shifted either up or down on the scale was identified. This shift was categorized as 'the student's reaction to the use of literature circles in relation to their interest in reading and collaboration with peers in discussions.' The total numerical change in score was not calculated, but each response that changed in some way between the pre- and post-test was identified. The resulting shifts in student responses were divided into the following categories:

Negative Reaction Category = a student response that: is a score that indicates the student was less in agreement with the statement: "I enjoy picking up a book to read when I have free time" than they were before the unit. (N = 7) OR is a score that indicates the student was more in agreement with the statement: "I prefer to do anything other than read a book" than they were before the unit. (N = 17) Total scores in negative reaction category = 24

Positive Reaction Category = a student response that: is a score that indicates the student was more in agreement with the statement: "I enjoy picking up a book to read when I have free time" than they were before the unit. (N = 20) OR identify a score that indicates the student was less in agreement with the statement: "I prefer to do anything other than read a book" than they were before the unit. (N = 15) Total scores in positive reaction category = 35

No Change Category = a student response that: is a score that does not change from the pre-test to the post-test

Subcategories identified within the categories listed above are as follows:

Contradictory category = a student response to the two questions that: places the student in both the positive and negative reaction categories (N = 4)

Double positive category = a student response that: places the student in the positive reaction category twice (N = 4)

Double negative category = a student response that: places the student in the negative reaction category twice (N = 4)

Following the literature circles unit, the classroom teachers conducted a whole class unit using another novel. At the end of this unit, students were randomly selected from the defined reaction categories (listed above) for interviews. Three students were randomly selected from the 'positive' group and three were selected from the 'negative' group. In addition, one student from the 'double negative category', one from the 'double positive category' and one from the 'contradictory category' were randomly selected, with care taken to ensure that no one student was representing more than one category. Interviews were conducted with these nine students, using the following questions: Questions for literature circles follow up:

- 1) What was it that you liked or didn't like about literary circles?
- 2) You indicated on your survey that your interest in picking up a book to read went (up / down) after the literature circles unit. Can you recall why you might have answered this way?
- 3) After you completed your literary circle unit, you read a book as a whole class. Did you find the whole class discussion approach easier /harder/ more enjoyable/more challenging than the literature circles unit?
- 4) Would you prefer to have further studies in literature use the literature circles method, the whole class discussion of a book or a mixture of the two? Why?

From the students in the negative reaction category who shifted to a less favorable response to reading a book, we heard these comments and many like them:

- "I felt overwhelmed during the literature circles unit – we were always reading!"
- "There are more people to share ideas when the whole class is reading the same book."
- "I feel more challenged when I work on my own to get the work done and not in a small group – I push myself harder that way when I am only responsible for myself."
- "I felt like literature circles was too much work."
- "Things are easier when the whole class discusses together."
- "It was a challenge to keep up with the reading schedule we set in our literature circles group."
- "I didn't like it when we disagreed on things in my group."
- "Sometimes the group goofed off and I don't think I get as much done then." "Literature circles was fun, but sometimes it seemed like I had to keep the group moving – I had to do more work."
- "It's just easier when the whole class is reading together."

All of these student said they would prefer to read in a whole class setting where the teacher lead the discussion, although many said that it was more enjoyable discussing the books with their friends. From the students in the positive reaction category, who shifted to a more positive interest in reading, we heard these comments and others of a similar nature:

- "I like that I got to choose the book I read."
- "In the group you felt like you had to do your part so you would have stuff to talk about."
- "I prefer lit circles as a way to learn because groups force you to try harder to get your part done. In a larger group you don't always have to get your work done, you can sort of 'hang back' from the discussion. It was hard, though."
- "In lit circles you could do more, you are not reading for nothing – you are talking about what you read and you could draw pictures and do other stuff about the book that I like better." "Being able to discuss with everyone, you know what you learned, you get different points of view and it makes it easier to understand."
- "You can ask questions in lit circles, it is easier to talk to a small group."
- "I felt more challenged in lit circles because I had to explain myself so my friends could get what I meant."

The student from the double positive category was particularly pleased with literature circles, and repeatedly said how much he liked choosing their own book and talking in a relaxed way – not worrying about when the teacher would call on them and if they had the ‘right’ answer. While the responses were similar to those in the positive category, one comment was particularly poignant: “In lit circles I got to put in my ideas – that doesn’t usually happen when the whole class is doing it (discussing).”

The student from the double negative category echoed the comments from students in the negative category, although this statement seemed to reflect their overall sentiment: “I didn’t like depending on another person to get my work done. I prefer to get things done by myself.” Perhaps it is a learning preference, but this individual was particularly adamant that they didn’t like working in groups. In addition, this individual expressed concern that some of their literary circles group might “be wrong in what they say about the book. When the teacher leads the discussion, I know I am getting the right ideas about what we read.”

The student from the contradictory category summed up his perspective by saying, “Lit circles weren’t bad – I mean, it was a lot more fun talking with our friends about what we read, and the book was OK. But I had to actually do the reading because my friends would get on me if I wasn’t ready or goofed around. So I kinda like them but I didn’t like to have to always keep up on things. I have a life beyond school – basketball and stuff, and keeping up with the reading and the role sheets and the journals was a pain.”

From the survey results, the student work and the interviews with students, it is clear that while literature circles can generate interest in reading for some students, this collaborative learning process can be a ‘turn off’ for others. A critical point to be taken from this study is that teachers need to think carefully about individual student learning preference and how that impacts student interest in reading and student reaction to classroom instructional practices. It also is important to consider that some students may feel pushed to participate more in literature circles because they can’t ‘hide’ like they can in a large class discussion. Educators need to consider that literature circles may be negatively perceived by students because they are expected to read more and think more critically than they may in a whole group setting.

What did we learn? While our data did not identify any results of statistical significance, individual survey results and subsequent analysis show that some students were more enthused about reading following the literature circles unit and some really enjoyed the collaborative process. The pattern of survey responses and interview comments also identified that there are students who do not like to be forced to work together, and this hindered their enjoyment of reading. Whether this perception stems from the fact that some students may feel like they carry a greater load in a group discussion or feel they have to do more work to in a literature circle unit, these issues must be a factor in teacher decision making. Teachers must consider how they structure the group interaction to ensure that no one student consistently carries the responsibility of leading the literature circles.

Survey results and interview comments also identified students who felt that they were more involved in the discussion, more challenged and thus learned more from participating in the literature circles. A strong wish for more learning experiences like literature circles was also expressed by these students during their interviews.

Certainly, whole class discussions of a single book are positive experiences for some students and literature circles are positive experiences for others.

While this study did not identify literature circles as a statistically significant way to get all students interested in reading, when you look at individual student data and responses, it is clear that some students react more positively to this collaborative reading process. It is important then, for teachers to recognize that differentiated instruction is not just about meeting the needs of one or two particular students, but must also address the preferred learning mode of all students. When students feel that they have an opportunity to learn in a way that best meets their needs and enables them to be successful, they are more positive about the experience. In this way, literature circles can have a positive impact on individual students' interest in reading and support their learning. In addition, teachers need to recognize that if they want their students to develop group interaction skills, some students will be pushed to work in ways that are not as comfortable for them. However, we need to consider that whole class instruction is also uncomfortable for some students. It becomes an issue of balance. Teachers will want to balance their instruction between whole class and literature circle units.

While it was important to acknowledge the validity of student reactions to literature circles methodology, the teachers felt that some negative student comments were actually positive. They were pleased by the student complaint that his/her life had been inconvenienced by the increased amount of reading the lit circle demanded. Use of a teaching methodology that pushes students to work harder and complete school work before outside activities was a plus for the teachers.

The most exciting results from this study/unit were the actual work produced by the students. Journal reflections and final products reflected a high level of thinking and creativity. By placing the learning in their hands and allowing them to work collaboratively with their peers, students met the teachers' expectations. Student interest in reading increased for some students when they were engaged in this preferred learning method and some students developed a greater comfort level about sharing their ideas and collaborating in their study of literature. These results argue for more research regarding the use of literature circles in the classroom, and suggest that the implementation of some literature circle units within the curriculum may be appropriate as educators work to create school curricula that positively impacts a wider range of learners. We know we want our students to be engaged readers and to enjoy reading, and we need to keep searching for ways to make that happen. Literature circles can help.

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Business Liaison Collaboration: A Case Study

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Introduction

The academic library has always been known as a place to go for a book, journal article, or item on reserve. During the past decade the format of these sources has changed from primarily print resources to a mix of print and electronic. Traditional resources and services have expanded to become electronically available from one's desktop. Accessing online scholarly materials is challenging for both the librarian and faculty member. But while the tools of scholarly research have changed, the need for library instruction remains: "Since most faculty find it difficult to keep up with the rapid growth in electronic information sources, instructional librarians need to instruct both students and faculty about these new sources." [1] Just as the tools have changed, instruction has expanded to include collaboration between librarians and faculty. As the role of the librarian has evolved to support the learning environment, collaboration has emerged as a key element in liaison relationships with faculty. The Business Liaison Team at the University of Louisville Libraries collaborated with College of Business and Public Administration faculty to offer a new series of workshops called Research Refreshers, designed to highlight specific electronic resources and demonstrate how to effectively use them.

Literature Review

For over a century academic librarians have been involved in the integration of library instruction into the curriculum. From agricultural and teachers colleges of the 1920s to liberal arts colleges of the 1960s, the role of library instruction has steadily increased. [2] However, it was in the last quarter century that librarians moved beyond this instructional role into full partnerships with teaching faculty colleagues.

In the Seventies, the theme of integrated instruction increased within the literature. In "Integrated Library Instruction," Kennedy described Earlham College's efforts to move instruction from a time-consuming, individual activity to an integrated and more efficient classroom method. The key was the integration of library instruction into courses that relied heavily on use of the library. [3] Lehman's key article on the faculty-librarian relationship, "Library-Faculty Liaison in the Small College," introduced five methods to increase liaison activities: personal relationships, librarians on faculty committees, structured communication with faculty, the library committee, and bibliographic assistants. [4] These later became the focus for the library liaison movement of the Eighties and Nineties. Lehman encouraged librarians to play an integral role in the institution through open communication with administration and faculty. He believed that role would result in involvement by librarians in the development of new courses and degrees and changes in the curriculum. [5] His vision of having librarians involved outside the library might have influenced later collaborative efforts in course development and co-teaching.

Librarian-faculty interaction in the 1980s centered on course-integrated bibliographic instruction and library workshops designed for faculty. Course-integrated bibliographic instruction took several forms including team-teaching and curriculum development. This was demonstrated in several projects including the availability of a chemical literature course at the University of Colorado at Denver taught by a chemistry professor and a science librarian [6] and collaboration between a librarian and a sociologist at Mankato State University in the course Careers in Criminal Justice. [7] Library workshops designed for teaching faculty included programs at

Michigan State University [8] and Earlham College. [9] Steffen, in her article “College Faculty Goes Online,” echoed other writers on librarian-faculty collaboration. She pointed out the benefits of collaboration to the library, which included improving the library’s image, encouraging faculty to incorporate bibliographic sessions in classes, enabling librarians to hone their pedagogical skills, and enhancing the image of librarians as teachers. [10]

During the 1990s collaboration between librarians and teaching faculty rapidly escalated at academic institutions. Cook, in his overview “Creating Connections: A Review of the Literature,” discussed the positive results between the shifting role of the library and librarians with the rest of the campus. [11] Faculty began to realize the added value of librarians in course planning. Winner, in her article “Librarians as Partners in the Classroom: An Increasing Imperative,” urged librarians to become leaders of the information research process and exploit opportunities to work with faculty. [12] As the Internet and online databases began to be more commonplace, librarians became more involved in supporting active learning in the classroom. Smalley addressed partnering with faculty to incorporate web exercises to help with the complexity and magnitude of resources as they became available in multiple formats. [13] The quality of librarian-faculty relations was also explored within a comprehensive literature review by Kotter, who emphasized the necessity of positive relations between librarians and faculty. [14]

The new millennium has brought changes to the librarian-faculty relationship. Pedagogical strategies, originally designed to enhance the learning environment, have strengthened collaborative partnerships between faculty and librarians. The trend is to provide an active learning environment, which emphasizes the skills needed to evaluate information resources and their relevance to one’s research. One such approach, problem-based learning (PBL), emphasizes the skills students need for information gathering within a discipline. [15] The role of the librarian has shifted from instructional collaborator to information consultant. In this role, librarians must go beyond the walls of the library and interact with faculty and students in classrooms and computer labs thus transitioning from passive liaisons to proactive consultants. [16] Whether collaborating in librarian-faculty relationships or functioning as instructional designers, librarians strive to determine the best way to incorporate information literacy into the curriculum.

In this case study, a team of four librarians expanded their liaison roles to become proactive faculty partners. This collaborative effort resulted in a faculty workshop series, Research Refreshers, and a renewed relationship with the University’s College of Business.

History & Development of Faculty Workshops

The Research Refreshers originated from an established liaison relationship forged by the Business Reference Librarian with the College of Business and continued by the Business Liaison Team. With the arrival of a new Dean of Libraries in 1997, a liaison program was created which matched librarians with each department’s discipline. During the second year of the program, the Business Liaison Team expanded to include a librarian with a business degree and information systems background and a government publications librarian who fostered the ties between business and government resources. The following year, the Electronic Resources Librarian joined the Team. This was important because she held a Masters Degree in Public Administration, a degree program recently added to the College of Business’ curriculum. The College of Business consists of eight departments: Accountancy, Computer Information Systems (CIS), Economics, Equine Industry Program, Finance, Marketing, Management, and the School of Urban and Public Affairs (UPA). Current liaison responsibilities for these departments are divided among the four liaisons. Early activities of the Business Liaison Team included communicating the library’s services through email, letters, and reports at faculty meetings, providing library instruction, and participating in brown-bag forums. Based on the response to these activities, the Departments of Finance and Accountancy asked the Business Liaison Team to conduct a workshop for their faculty covering the electronic resources in their respective disciplines.

In January 2003 the Business Reference Librarian and the Systems Librarian presented the Finance and Accountancy workshop in the library's computer classroom. Fifteen faculty members attended representing 75% of the faculty of the two departments. The workshop covered general information about the University Libraries' website and searching relevant databases. Librarians used two approaches for teaching databases—basic online searching for some, and advanced searching for others—in order to cater to each participant's level of knowledge. Reaction to the workshop was positive as evidenced by in-class comments, email, and through informal conversations with faculty. The participants' attendance and enthusiasm encouraged the workshop leaders. Perhaps the most important outcome of this initial workshop was that it opened doors to other departments in the College of Business. In early February 2003 the College of Business' Professional Development Committee Chair approached the Business Liaison Team to collaborate on additional workshops for all departments. The Team spent the rest of February planning them.

With over 70 faculty members, the Business Liaison Team knew there would be a wide range of needs. The Libraries' have access to over 200 databases, 35 of which are business-related. The Team knew that one session for all departments would not be sufficient for faculty, but eight sessions would not be feasible for the liaisons. In an effort to tailor the workshops to departments' needs, the Team designed four two-hour workshops—one each for CIS, Management, and Marketing, and a combined session for Economics, the Equine Industry Program, and UPA—and divided the teaching load among team members. The workshop format consisted of an overview of the Libraries' website followed by database demonstrations. The overview section included sample searches in the online catalog, an introduction to the Libraries' business research webpage, demonstrations of how to remotely connect to library databases, access electronic books and journals, request an ILL, suggest a new book for purchase, and schedule library instruction sessions. Database demonstrations were tailored to each department's discipline and included information on specific features and sample searches within each. Five databases were central to all workshops: ABI Inform, Business Source Premier, Lexis-Nexis Academic Universe, RDS Business Suite, and Business and Company Research Center. These five databases were supplemented with demonstrations of subject-specific databases such as EconLit for the Economics Research Refresher, Engineering Index and INSPEC for Computer Information Systems, and PAIS International for the School of Urban and Public Affairs. The Liaisons wanted a title for the series that would attract faculty, especially seasoned faculty. The Team agreed not to use library lingo and choose a name that would pique the interest of business faculty. Since some do not realize how rapidly content and database interfaces change, the title needed to attract those familiar with the Libraries' resources as well as those who had little or no exposure to them. The title 'Research Refresher' was coined. Since advertising would be essential to the success of the workshops, the goal was to market them as skills' refreshers by showcasing databases relevant to faculty research.

In early March 2003, the Business Liaison Team met with the Professional Development Committee Chair to discuss advertising strategies. The Chair offered assistance with designing and distributing promotional fliers throughout the College of Business. Additional marketing efforts included mass email notifications, announcements at faculty meetings, and a notice posted in the College's weekly email newsletter. After six weeks of advertising the workshops were held in mid-April 2003.

Results and Evaluation

Attendance at the workshops varied widely among departments. The CIS and Marketing Department Refreshers drew approximately 92% (eleven out of twelve) and 88% (eight out of nine) of their respective faculty. The Management Department Refresher drew 50% (10 out of 20 faculty). Only 14% (four out of 29) of the faculty from the Economics Department, Equine Industry Program, and School of Urban and Public Affairs attended their joint session. However, none were from the School of Urban and Public Affairs.

As a follow-up, the Business Liaison Team sent postcards, business cards, information about the workshops, and an invitation to schedule a Research One-on-One consultation to faculty who did not attend. Although no formal assessment was conducted, several College of Business faculty were impressed with the delivery of the workshops and sent notes to the Business Liaison Team expressing their appreciation. The positive feedback from the faculty indicated that the workshops were successful. The design and implementation of these workshops resulted in increased credibility and team building, and created opportunities for future collaborations between librarians and business faculty. As a professional development opportunity initiated by the College of Business, Research Refreshers had instant credibility and enabled liaisons to strengthen ties with faculty. The workshops attracted both new faculty and those who had never been to the library. Some faculty were unaware of the library resources available to them. Most importantly, the Research Refreshers offered an opportunity for faculty to see what liaisons had been promoting through email and personal contacts.

In a team environment the process of planning and presenting requires cooperation and collaboration. Since some disciplines overlap within university programs, partnering with liaisons outside the Business Team was necessary, as was the case between the CIS Department and the School of Engineering's Computer Engineering and Computer Science Department liaisons. They pooled their resources and created a Research Refresher for the faculty of the CIS department. This intra-liaison exchange was a success because each liaison drew upon one another's expertise to cover overlapping content between business and other disciplines.

While there were successes, there were also disappointments, particularly the low attendance and the preparation time for the workshop that served the departments of Equine, Economics, and UPA. Since no Urban and Public Affairs faculty attended the workshop, the liaisons questioned what additional strategies could have been employed to attract this group. With the enormous amount of time required to plan and develop the Research Refreshers, attendance at the joint session (only 14% of 29 faculty members) did not warrant the investment. Because of the preparation time involved and low attendance, the Business Liaison Team now feels better prepared to market new opportunities to collaborate with faculty.

Outcomes

The goal of the liaisons was to work with teaching faculty by using information literacy to present electronic resources supportive of research within the College of Business. Bell says that "transforming our relationship with faculty requires that we concentrate our efforts to assist them in integrating technology and library resources...." [17] The Research Refreshers were created to do just that. While the primary goal of the Team was conveying the importance of information literacy skills to faculty, the lessons learned and the relationships formed have made an impact on future programming.

Choice of facilities and scheduling are essential to the success of future workshops. While the library has two state-of-the-art computer labs, the best-attended Research Refresher was held in the College of Business following a mandatory faculty meeting where 92% of the CIS faculty attended. When scheduling, it was important to know the various calendars of the University, the College of Business, and the computer labs. The College of Business does not schedule Friday classes, the day reserved for mandatory faculty meetings and professional development activities. Future sessions will likely be better attended if conducted in College of Business classrooms during times most convenient for faculty.

The Business Liaison Team is now contacted frequently to assist with personal research as well as information literacy requests. Additionally, the Research Refreshers resulted in peer-sharing sessions with other librarians and the creation of workshops for visiting

MBA students and Graduate Research Assistants (GRAs). Library colleagues asked for more information about the workshops and requested details on planning and implementation. A Brown Bag session was held for all other library liaisons which allowed the Business Liaison Team to highlight individual Research Refresher presentations. The other liaison teams expressed interest in replicating the workshops for their own disciplines. In summer 2003 the Director of International MBA Programs, who had attended the Management Research Refresher, requested a similar workshop for the College's German MBA students visiting Louisville. The Business Reference Librarian revised the workshop and presented a two-hour session for the students. Based on favorable comments from those attending the German MBA workshops, the librarians again modified the Research Refreshers and taught two-hour sessions for GRAs from the College of Business and Public Administration.

While librarians at the University of Louisville worked with only one college, they still experienced similar results to those librarians at Eastern Kentucky University working with teaching faculty from several disciplines. [18] The impact of collaboration has been felt among four groups: teaching faculty, students, librarians, and the University of Louisville Libraries.

Teaching faculty are:

- developing confidence in using library databases,
- viewing librarians as instructional partners,
- impressed with the libraries' electronic resources,
- requesting more information literacy classes.

Students are:

- scheduling Research-One-On-One appointments,
- better at utilizing electronic databases,
- beginning to evaluate resources more critically.

Librarians are:

- communicating more frequently with their liaison faculty,
- being invited to collaborate in instruction and assignments,
- collaborating on faculty research projects,
- participating in faculty recruitment,
- participating in accreditation processes,
- assisting with new program and degree proposals.

The University Libraries:

- have increased visibility on campus through the Library Liaison Program,
- services are more admired and respected since the creation of the Liaison Program,
- Information Literacy Program is driving instructional collaboration between faculty and librarians.

Conclusion

The Business Liaison Team began by matching librarians with departments, making presentations at faculty meetings, and sending email about library resources. Networking triggered the invitation to offer a workshop tailored to Finance and Accounting faculty. The success of that initial workshop led the Chair of the Professional Development Committee to ask for similar programs for other departments. Collaborative planning and execution of the Research Refreshers led to increased respect and acceptance for the Team. In the time since the workshops, faculty appear more comfortable calling on librarians to help them with research and teaching. The activities of team building, intra-liaison cooperation, peer-sharing, and workshops for MBA students and GRAs were successes of the Research Refreshers.

Disappointments included a lack of attendance by one department and low turnout in another. The importance of choosing the proper facilities, scheduling, and persistent advertising were valuable lessons learned from the workshops. Despite these setbacks, business liaisons at the University of Louisville Libraries have increased their visibility through this program and continue to expand their collaborative activities with College of Business faculty.

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Lessons on Literacy: An Experience in Co-Teaching

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Introduction

Two teachers working together in one classroom is becoming a popular option in many school districts around the country (Welch, Brownell, and Sheridan (1999). This approach, often referred to as co-teaching, is defined as “two or more professionals delivering substantive instruction to a diverse or blended group of students in a single physical space” (Cook & Friend, 1995, p. 2). Cook and Friend (1996) contend that co-teaching increases students’ instructional options, improves programs, reduces stigmas for special needs students, and provides for more professional collaboration. Recently, this teaching approach, which emphasizes shared responsibility, has been routinely utilized by a special education and a regular education teacher (Ripley, 1997); however, it can also be an effective model for two general education teachers. This paper examines one elementary teacher’s experience in a co-taught classroom and explores how this experience shaped, and continues to shape, her thinking about literacy instruction. We share this experience through a series of questions and responses.

What was your first experience with co-teaching?

My first experience with co-teaching began quite by accident. My pre-service education had not really prepared me to handle a regular classroom but I always assumed that I would be the sole teacher, not sharing my classroom with another professional. I had been hired to teach in a local school district. On the first day of teacher in-service, my principal explained that she had an influx of new students and that available classroom space did not match her needs. There would be 100 third grade students, four third grade teachers, but only two third grade classrooms. She explained how she planned to put two teachers and 50 students together in each of the two third grade classrooms. She said that we would be team teaching. My first response was, “What is team teaching?” Her answer was a simple, “You will just teach together”. I was too naive to be scared. I now know that team teaching first gained popularity in the late 1950’s but did not become a widespread practice until the early 1970’s (Friend & Reising (1993). Documented early experiences involved two general education teachers. These early ventures into team teaching provided the roots for our modern day conception of co-teaching (Friend & Reising, 1993) which has evolved to include meeting the needs of special education students in a general education classroom.

How did you prepare for this teaching approach?

My teaching partner was also a first year teacher. Not really knowing how to handle the situation with 50 students and two teachers, we decided to be flexible in our grouping and to try it all. There were times when we were together in the classroom with all of the students, both teaching. Sometimes one was teaching and the other monitoring; Vaughn, Schumm, and Arguelles (1997) call this grazing. There were other times when we divided the students and the classroom in half, each of us taking a corner or moving into the hallway. We were both surprised at the levels of abilities we found in the 50 students whom we shared and we began thinking about how to best meet their needs. Neither of us had received any training in working with students who functioned either above or below the “normal” range. We intuitively recognized that we would have to think about instruction in different ways if we were to provide for all of them. Our immediate solution to what seemed like an insurmountable problem was to pair up with the other two third grade teachers and ability group all of our 100 students for both reading/language arts and math. We recognized that we needed to know something about our students’ reading abilities before we grouped them so my teaching partner taught the 50 students while I sat in the

hallway and informally tested each child. I was quickly finding out the value of informal assessment. The other two third grade teachers followed the same procedure with their 50 students. When we finished, we grouped the students into four fairly homogeneous groups.

How did you organize reading instruction?

I was very excited that I was working with the top ability group for the reading/language arts block. I enjoyed using quality trade books and planning higher level thinking activities. I was convinced that, since these students had mastered the basics, they were the only ones who were ready for creative, hands-on activities. Integrating reading and writing seemed to be a natural by-product of our evolving collaborative community. My students learned to summarize and predict and to talk about their thinking processes. They read real literature, discussed authentic and personal connections, extended literature with their writing, and designed creative products to demonstrate their learning. While I was working with this top group, my teaching partner was working with the lowest of the four ability groups. Today, these students would probably be classified as special needs. Her students could not read the stories in the basal readers. Neither of us had been expecting non-readers in third grade! My partner spent much of her time using flash cards, drilling her students on basic sight words. She taught isolated phonics skills and used worksheets. The other two third grade teachers had the middle two ability groups. Their instruction fell somewhere in the mid-range of this continuum of services. Allington and Cunningham (2002) remind us of the importance of providing all students with time to engage in quality literacy practices. Slower students sometimes need increased amounts of time; co-teaching provides an extra teacher to provide that time. All students deserve authentic, meaningful activities (Routman, 2000).

How did you integrate literacy instruction?

We tried to incorporate various literacy activities throughout the day. During science and social studies instruction we heterogeneously grouped our students. We sensed that many issues, both academic and social, would begin to surface if the low students were always together. Students who are consistently placed in the low group suffer from damaged self esteem and are often irreparably damaged (Routman, 2000). So, with these low students in mind, we purposely created groups that were balanced across intellectual abilities. We never even considered the effect that ability grouping might have on the average and above-average or gifted students.

We flexibly manipulated state-mandated time requirements and created opportunities to infuse literacy strategies and experiences into our integrated curriculum. Our students read, wrote, listened, and communicated orally as they explored science and social studies concepts. There were many authentic opportunities for small group instruction/practice in literacy related areas. As the so-called low readers became interested in a topic, their enthusiasm or their need-to-know propelled them to exceed our expectations. Allington and Cunningham (2002) stress the dangers of curriculum fragmentation, especially with struggling readers. We created opportunities for pieces of information to be meaningfully connected and for the content knowledge to seamlessly connect. Because there were two instructors, we found it easy to assess strengths/weaknesses and to provide for literacy needs as we observed these students working collaboratively. Quality trade books replaced textbooks. To my surprise, these low students responded most appropriately to the activities aimed at tapping critical/creative thinking. Working in a co-teaching situation requires partners to re-examine their beliefs and assumptions about the teaching-learning process (Cross & Walker-Knight, 1997). I began to re-think my expectations for all students and to re-examine the place of authentic literacy in the curriculum.

How did you plan for literacy instruction?

By the end of the year, we had weekly planning meetings where we discussed our teaching strategies and considered the role we would each play in subsequent lessons. Sessions were lengthy but focused. Vance (2001) found that teachers involved in co-teaching situations considered scheduled planning time critical to success. These collaborative conversations are vital if teachers are to effect their students' literacy in positive ways (Routman, 2000). It was

from my partner teachers that I learned the true meaning of collaboration. Our discussions were deep, meaningful, and student-centered. We examined state and district reading/language arts guidelines and looked at lists of required skills and strategies not only for our grade level but also for the preceding and subsequent grades. We collaboratively considered how we could best cover these required areas in meaningful ways while at the same time allowing our students to have some input about what they were interested in learning. We perused quality children's literature and cataloged books that would be appropriate for various content/subject areas. Our main focus was on expanding all our students' critical and creative abilities, not just routinely teaching lists of prescribed skills. We wanted our students to make authentic connections among all school subjects and to see relationships between what we were doing in school and their real life activities.

We all shared in the assessment, planning, teaching, and management of our 100 students. We identified students with special needs, on both ends of the spectrum, and designed instructional activities to meet those needs. Dieker and Barnett (1996) contend that planning discussions should be expanded to include evaluation of the teaching process, including such issues as how to teach, evaluate, and adapt. We planned a situation where we shared responsibility for our students, took on different roles, and were able to capitalize on our own strengths and interests. Current research (Cross & Walker-Knight, 1997) indicates the importance of building a collaborative community where all stake holders feel accepted and supported and where all members' needs are met. Our collaborative planning was critical to our success.

What lessons did you learn about literacy practices?

I now know a lot more about effective literacy instruction, but, I can look back and see some quality instruction and the beginnings of what has evolved into my child-centered, constructivist philosophy. Frank Smith's *Twelve Difficult Ways to Make Reading Easy and One Difficult Way to Make Reading Hard* (1983) reinforces what I instinctively knew: my main goal should be to assess what each of my children need and then to determine how to give it to them. Other literacy lessons that I learned from this experience include: the role of phonics instruction (and how some kids can just figure it out on their own), the idea that writing and reading are reciprocal processes; the essential inclusion of quality children's literature, and the understanding that all students can create and think critically and creatively. I learned the true meaning of holistic, child-centered instruction and was able to view literacy strengths and needs not only through my own eyes, but also through the eyes of my three teaching partners. I had the opportunity to switch fluidly from the position of observer to teacher and to refine my philosophy about how students learn to read, write, and communicate. I began to recognize that literacy is part of all we know and do and that reading is more than memorizing lists of words or practicing endless skills. The reciprocal relationship between reading and writing became clear to me. I began to appreciate and value quality children's literature. I learned these lessons because I was involved in this collaborative experience and was thrust into a situation where I had to really examine teaching and learning and consider what was best for children. These experiences provided the building blocks that I continue to use in the construction of my ever evolving teaching and learning philosophy. The unique part of this venture was not that my teaching partners and I were meeting the literacy needs of our students, but that we were doing it collaboratively.

How does this compare to today's concept of co-teaching?

Brauwers, Hourcade, and Friend (1989) contend that in co-teaching classrooms two professionals collaboratively share responsibility for all aspects of the students' educational experience including developing and implementing learning objectives, planning content/curricular integration, classroom management, and assessment/evaluation of learning. Friend and Cook (2003) describe the following six approaches to co-teaching:

- One Teach, One Observe: Both teachers pre-determine the type of assessment data that is needed; one teacher observes and collects that data while the other teacher teaches.

- One Teach, One Drift: One teacher is mainly responsible for the instruction and the other provides individual assistance to students in need.
- Parallel Teaching: The class is divided and both teachers cover similar information.
- Station Teaching: Students are divided into groups; content is divided among teachers. Teachers move from one station to another, teaching the same information to a different group of students.
- Alternative Teaching: One teacher teaches the large group; another teacher works with small groups who need individual attention.
- Team Teaching: Teachers simultaneously teach the same material to one group of students. They take turns teaching, building on each other's content/comments. This is sometimes called tag teaching.

These approaches mirror the types of instructional patterns my teaching partners and I followed. The variety of configurations provided the flexibility we needed and allowed us to build on each others' strengths. Further, this experience forced us to recognize the differing abilities in our students and placed us in a situation where we had to determine what each of them needed. Because we could flexibly assume different roles, we were in a position to better assess and meet their needs.

What were some of the challenges you faced?

We struggled with what Gately and Gately (2001) identified as the eight components prevalent in a co-teaching relationship. These components are: interpersonal communication, physical arrangement, familiarity with the curriculum, curriculum goals and modifications, instructional planning, instructional presentation, classroom management, and assessment. Within each of these components, Gately and Gately describe stages that teachers might go through as they move from a rudimentary, beginning level partnership to true collaboration. They analyzed each of these components separately and described how a partnership might look and feel at each of the levels. In the beginning stages, teaching partners are really just two professionals sharing a physical space, each with their own competencies, background knowledge, philosophy, and teaching styles. Often times, there is a lack of total trust and communication is guarded. Teachers are still functioning individually and independently. As the process continues, partners move to a more collaborative stage where they begin fluid, natural, and unplanned movement through the invisible walls that had previously been set up in the classroom. They feel an authentic connection to all the students. Communication becomes more honest and open as teaching partners read and react appropriately to each other's verbal and nonverbal cues. Rules and expectations that benefit all students in the class are collaboratively developed and maintained. Teaching partners jointly consider all students as they share, modify, and differentiate curriculum concepts.

My co-teaching experience validates the findings of Gately & Gately's research. My teaching partners and I began as separate entities but were compelled to consider the problems that surfaced in the areas of communication, curriculum, management, assessment, and instruction. We struggled through the stages, not sure where we were going but eventually arriving at the collaborative stage in many of the identified areas. Adams, Cessna, and Friend (1992) compare this learning to work together process to partners in a dance learning to complement and support each other's movements.

To what do you attribute the success of your endeavor?

As our team delved deeper into this co-teaching experiment, we recognized the need to tear down physical walls in our school. Metaphorically, these walls represented our separate space. Our desire to become one large learning community necessitated breaking through both physical walls and psychological blocks. The beauty of this model was that the tearing down was an outgrowth of the process. Often, a new concept is forced, the walls are torn down... and then teachers receive a mandate to adjust their teaching. I believe our success was somehow linked to this metaphor and to the authenticity of our problem-solving process. Walter-Thomas (1997) reminds us that teachers involved in successful co-teaching situations are willing to navigate through the basic implementation woes or “work through the muck” (p. 108).

Do you have any concluding thoughts?

Literacy instruction in our classroom was enhanced by this teaming model. Having more than one teacher increased the knowledge base from which decisions were made, provided different teaching styles, and increased the possibility of matching instruction to students’ learning styles. Being able to group in a variety of ways provided more opportunities for individualized instruction aligned with specific needs. This flexible grouping also provided observation opportunities which in turn led to assessment options that would not be available in a one-teacher classroom. Although, we had no quantitative data to validate our success, recent research has shown positive benefits for both students and teachers involved in co-teaching situations. Walter-Thomas (1997) found that students involved in co-taught classrooms show gains in both social and academic areas and that they benefit from having the time and expertise of two teachers. Friend & Reising (1993) report that teachers report professional satisfaction and more opportunities for support and growth when they co-teach.

My philosophy about how students learn and about my role in teaching was shaped by the four years that I worked as a member of this collaborative team. I learned to re-define literacy as we jointly considered what was best for each of our students. The time that I spent with my colleagues was invaluable as we planned and implemented effective lessons and looked for the literacy connections. I have maintained the philosophy that this experience engendered. I work best in a collaborative situation; I value the opinions and feedback of my peers. Our team was able to meet the literacy needs of our students because we took the time to pool our expertise and our resources, to assess our students’ needs, and to collaboratively plan meaningful experiences. Co-teachers are challenged to view literacy through a different lens. Our students had a unique literacy experience because of our collaborative community. As a university faculty member, I see the need to provide my pre-service teacher education students with the skills, strategies, and knowledge that will enable them to successfully work in collaborative situations. (Cook & Friend, 1995).

How can literacy be developed in co-taught classrooms?

I can offer the following suggestions to help elementary teachers in co-teaching classrooms:

- o Solicit administrative support. The administration must provide a commitment of both material and human resources. (Austin, 2001). Encourage discussion of relevant literacy-related issues and best practices.
- o Provide adequate, scheduled and unscheduled communication opportunities for all concerned parties. Authentic connections emerge when partners truly understand and engage in the process. Communication ensures that everyone is on the same page as far as literacy-related goals/objectives, classroom management, expectations, and responsibilities.

- Use the expertise of all teaching partners. Each brings a different level of knowledge, a variety of background experiences, a unique definition of literacy, and a multitude of ideas about how literacy can best be enhanced.
- Integrate content areas whenever possible. Infuse literacy throughout the program. Focus on how reading, writing, speaking, and listening are part of the entire curriculum.

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Telling Stories of Our Collaborative Practice

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Introduction

New academics are important for developing the research capacity of any university. However, they can find themselves in a particularly vulnerable space and require mentoring and encouragement to undertake or begin research. Many initially shoulder heavy teaching loads and the expectation from the university that they will undertake research. They have yet to establish a research reputation and find themselves working at 'double pace' to prove their capability. Some cope and others who are probably very talented do not manage the expectations and fall by the wayside.

What follows is a description and explanation of the collaborative process as we experienced it as 'new' researchers. We have written from the 'first person' perspective as the story and journey reported is of ourselves as both the researchers and researched. We have used storytelling as a means of reflecting on the experience. We describe why and how we chose to work together to counter the minimal research culture and loneliness of researching on individual projects, and to support one another in developing research skills. We have included a list of themes that others may also find useful when using a collaborative research approach and ways in which the institution could support collaborative research undertakings. We have found that the list of themes is not dissimilar to earlier work undertaken by Hafernik, Messerschmitt and Vandrick, (1997) and Eisenhart and Borko (1991). Our suggestions contribute to the literature and propose that collaborative research partnerships when managed appropriately can increase research capacity amongst new academics, both for the benefit of their own development as researchers and for their home institutions.

A brief overview of collaborative research

The research literature reveals diverse investigations resulting from the collaborative endeavours of researchers. Some of the issues to emerge include discussion of the ethics of conducting collaborative research with participants in unequal relationships and the assigning of authorship (see for example Hafernik, Messerschmitt and Vandrick, 1997). Other studies detail the perceived quality of collaborative research in relation to citation measures (Rymer 1994; Bridgestock, 1991). Collaboration also demonstrates the benefit of pooling expertise and energy to work on a problem in the careers of early or new researchers (Dunkin, 1992). Collaborative research is characterised as a relationship between researchers where the partnership ensures that decisions and outcomes are not only shared and discussed, but are also a group responsibility (Bond and Thompson, 1996). Collaborative research can be approached from two perspectives. The first is characterised as 'additive', where researchers often work on discrete parts of the project and each contribute their part to the collated final product. The second is 'integrative' where researchers work together to develop shared understandings and outcomes (Eisenhart and Borko, 1991). Such a distinction is useful in helping to clarify the differences in collaborative research but as this paper details, it may be artificial since we have found good collaboration requires elements of both addition and integration.

Our collaborative context

Our context is a university setting. In this particular case, a strategic move by the university into teacher education created new positions, new programmes and research possibilities. We were both appointed to tenured positions to lecture across the diverse early childhood and secondary education sectors at about the same time. We had

different areas of expertise and broadly differing backgrounds before meeting in the same department. Taken at face value, our collaboration came about because an opportunity arose to initiate a research project based on our mutual interest in the issue of content knowledge, confidence and competence of beginning early childhood teachers. We explored possible research questions, such as what was 'important' general knowledge for early childhood teachers and what were the most appropriate ways to teach in this programme. We agreed from the outset that there was little point in undertaking research that was going to be of no consequence for the students or for our practice. Since we were both new to the field of pre-service early childhood teacher education we sought to understand the context together. We developed a short-term project to review the literature in this area which was intended to underpin a long term research project. The review of the literature was duly carried out, written and reported in appropriate forums collaboratively. We then pursued the collection of more data which we have analysed and reported in further forums.

This is typical of much research but the collateral outcomes that occurred for us as collaborators, which usually remain private and unreported, became the focus of further study. Analysing our lived experience of collaborating in research through storytelling provided us with insights which we share in this paper.

Method for understanding our experience

McDrury and Alterio's (2002) storytelling model was used as a framework to tell, discuss and analyse our story of collaborating in, and on, research. Data were produced in the form of the written stories (story finding, story telling) and notes made as we discussed our process together (story expanding and story processing). During the story processing stage we sought the perspective of a critical friend. The questions he asked, following his reading of our stories and analysis, introduced generative themes and helped us to uncover other layers of meaning. Our stories were then re-written in light of our discussions to highlight what we considered to be the salient points (story reconstructing).

Submitting this process of telling and reconstructing stories to the critique of our peers, an unknown audience, is problematic because of the honesty and openness with which we have explored our lived experience. The power of working in this way to uncover deeper meaning can also be potentially difficult for the participants as we, and others, see quite clearly aspects which we may have preferred to hide. Egos, personal ambitions and insecurities were laid bare when we wrote our stories. What follows is a description of our processing of the five stage reflective framework.

Story finding and story telling

Learning about our collaborative process through storytelling involved the telling or writing of stories. We set ourselves the task of writing about why and how we had developed a collaborative partnership. The stories were written individually and described our recollections of how the process had evolved.

We agreed on a schedule to get the first half of our drafts ready and then we worked independently. It took me several rewrites and comments from a critical friend to craft my half into something that I was happy to share (from Dawn's story).

After our first writing burst we combined the two and this became our first draft. We then sent the document back and forth to each other tracking the changes so in the end we had 14 drafts! We also set deadlines- When shall we have this done by? When shall

we meet? and placed those dates and times into our diaries. It kept us on our 'toes' as we would say to each other "I have done so and so" (from Belinda's story).

There were indications that personal benefits were accruing.

Again, it was a very supportive exercise, I was presenting our research so it felt less threatening than if I had presented my own work (from Dawn's story).

We worked out how to support and work with each other. We established our own system and agreed early on about potential conflicts. We lacked competitiveness and were clear about our expectations. I also found a 'soulmate' in research who was equally excited about the possibilities and encouraged and shared my energy (from Belinda's story).

Retrospectively, we acknowledged this was challenging and an unsettling experience since neither of us actually knew what the other had really thought about the process of collaboration.

Story expanding and story processing

We put the stories aside for a week following the initial writing since neither of us felt prepared to share our raw feelings and memories. It was difficult not to discuss how cathartic the actual process of writing it all down had been and how good that had felt. As McDrury and Alterio (2002) suggest, the intensity of feelings that are associated with the stories as they are told, listened to and discussed can point to issues that contain deep learning opportunities for those involved. This was the case for us. We recorded, shared, interpreted and clarified feelings in our stories to identify common themes and meanings underlying our process of collaborative research.

I didn't know you had taken several rewrites before you were happy to share.

Well, I didn't know what the level was, I had no idea at all. Once we established that we were just setting a starting point it seemed much easier. It was hard getting over the initial fear of putting something on paper.

Not serendipity then, we both provided something to the partnership which was lacking in the other?

Two parts made a better whole? (from discussion 12.02.2002)

As we reflected on our own and each others' actions we formulated an emerging list of themes that appeared critical and central to the collaboration. As we were both telling and listening and engaging reflectively we were, as McDrury and Alterio suggest, linking our new ideas with existing knowledge and past experiences. In this stage of our reflective discussion we invited a critical friend to read and comment on the stories. This allowed an alternative perspective which was removed from the lived experience and clarified issues of method. The result was a deeper appreciation of the collateral outcomes that are connected with effective collaboration.

Story reconstructing

With a sense of shared understanding about how each person had viewed the process, we returned to the stories. Our reconstructed stories serve to remind us of the journey we have made together and the insights we have gained into our own research practice. Belinda has realised that she casts into the dark, trawling to see what she finds in a new area of value to investigate. Dawn's concept is more pragmatic and she sees research primarily as a means of improving her practice. Other issues emerged which we have reported in the following section

Issues which emerged from our stories

One of the main aims of this paper was to suggest that collaborative research was a strategy by which academics, and particularly new academics, might develop essential research skills and quality research outcomes. We contend that the lone researcher can be a 'lonely space' and that collaborative research can contribute to establishing a research culture. Belinda's story told of enormous personal change and in this vulnerable position she sought friendship. Dawn's began with the need to do research in an academic setting, which for her was a challenge. Within the department there were other colleagues who became our friends and others who had research experience but our collaboration was based on more than these needs.

We have come to appreciate that we balanced one another's areas of uncertainty. Where Belinda had some experience of research processes Dawn was a relative neophyte. Belinda's story told of intrinsic drive and confidence to establish a research profile in a new field while Dawn felt external pressure to become involved in research. Belinda's story speaks of uncertainty in the field of early childhood, of stumbling across ideas and 'luck' while Dawn's has a more grounded view and a more pragmatic approach tempered by her greater experience as a provider and mother/client/consumer in the field of early childhood education. There are areas where we have the same expectations and key elements are congruent. For example, we were both committed to the project which was equally beneficial to us. We were both well organised as is illustrated by our ability to set and meet deadlines. One of the most important aspects that we both admired and represented in similar ways was our willingness to be non-possessive about the ideas and interpretations that were written. In the early sharing of our stories we simultaneously formulated and progressively refined the list of themes which we considered to have been important in our collaboration. The themes emerged during the story expanding, processing and reconstructing stages. These included:

Congruent research principles

We both thought it fundamentally important that our research would inform our practice. We had a common purpose.

Establishment of ownership and equality in authorship

Ownership of research is a potential area of conflict and we agreed at the outset that any publications would be co-authored. We decided we would include a statement acknowledging joint equal authorship and reverse name order on alternate publications.

Time management and deadlines

Negotiating and establishing deadlines was a way of acknowledging commitment to the process and also respect for each other.

Creating and guarding a space for collaborative work to occur within the institutional framework

We diarised appointment times to work on specific aspects of the research which we guarded.

Critiquing our work and removing 'selves' from the product

We did not feel threatened when receiving criticism from each other and quickly removed any personal ownership when writing.

Respecting differences in working styles and using those to our mutual advantage

We focussed on the complementary aspects of working together. Understanding commitments outside of our working lives deepened our appreciation of each other's contribution.

Intuition, empathy and friendship developed as we collaborated

We developed a healthy respect for each other's personal and professional lives. The time spent together writing and discussing our ideas has been a time of synergy.

Intrinsic and extrinsic motivating factors

Research to inform our practice has been a guiding principle in our endeavours. We wanted to contribute meaningfully to the discourse of our discipline.
Including critical friends and expert others
It was important to us that we could share our work with other colleagues for critique and perspective.
Collaboration has a life of its own and has spawned new projects.
The collaboration has momentum and new ideas, individual and joint, continue to be discussed.

Again, it must be stated that we do not claim that the themes we present are definitive or applicable in all contexts. They were the ideas that emerged for us as contributing to our successful collaboration. We would suggest however that other academics may find that they have had similar experiences and as such the presentation of the themes find credibility and perhaps transferability to other contexts (Burns, 1994).

Final reflections from ‘new academics’

In the reconstruction phase of our storytelling we have discovered contradictions, similarities, conflicts and hidden meanings. There were issues, which could have been addressed, and questions raised that will remain unanswered for the time being. It appears as though the combined congruent elements and the complementarity of our needs and areas of uncertainty combined to produce a synergy which resulted in a mutually beneficial collaboration. As we continue to work together, our understandings of our effective collaboration will become clearer. We will continue to develop new perspectives as our analysis continues. For both of us, telling the story of our collaborative practice has assisted us towards becoming more mature researchers.

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A Winning Combination: Collaboration in Inclusion

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Background

According to the Individuals with Disabilities Education Act (IDEA), the general education classroom must be considered by the Individual Education Plan (IEP) team as the first option for services for a student with exceptional learning needs. If a student cannot be educated in a general education placement, an explanation must be provided explaining why s/he cannot be educated in that setting, even with the addition of supplementary aids and services. Every student with a disability, regardless of the nature or severity of the disability is, therefore, a candidate for inclusion first. While not all students are eligible, many more have the right to be included than actually are. Students with mental retardation, autism, and behavior disorders can and, often, should be included as well as those with milder forms of learning disabilities.

Expectations for Students

If the IEP team decides that a student's individual needs can be met in general education classes, then that student is required to meet the core curriculum content standards for the general education program. This does not mean that s/he has to learn everything that typical students are learning. It does mean that s/he must learn a sufficient amount of the curriculum to be knowledgeable in the subject matter. Modifications to instructional methods or materials or strategies and techniques that allow the student to compensate for his or her deficit areas are often necessary to insure mastery of the material. The student with exceptional needs has an individualized program, an IEP, that identifies modifications and accommodations necessary to enable him or her to meet the demands of the class.

Students who are included primarily for reasons of social integration and social skills improvement are taught an alternate curriculum, work toward their IEP goals, and are tested for proficiency with alternate assessments such as portfolio assessment, which can include video taped performances and observational assessments. When social integration is the goal, proficiency is usually related to functional and communication skills. For example, a student with autism might be expected to greet peers with a scripted phrase or a student with severe mental retardation might be expected to work quietly on hands on activities during times when the others are doing seatwork. Proficiency might have to do with learning to read signs in the community for social studies or to make change of a dollar for mathematics instruction.

Pairing of the Teachers

In an inclusive setting, a special education and general education teacher are paired. The pairing is not always based on philosophy and/or teaching style, although it is the experience of the authors that pairing people who want to work together often leads to a more positive, collaborative relationship. The quality of this partnership is positively correlated with the effectiveness of the inclusion setting. However, sometimes scheduling and other extenuating circumstances dictate pairings. Whether partners

choose their teams or are assigned as a team, it is important that they prepare to work as a team before entering the class together.

Grading

In an inclusive setting, the general education teacher is ultimately responsible for grading all students in the class, including classified students. However, in sharing responsibilities, both teachers should have consistent, equal input on the grades of all students in the class. In one high school inclusion English class, both the general education teacher and special education teacher read the writing assignments of all the students in the class (Amerman & Harris, In-Class Support Team, North Plainfield High School, 2000). This does not mean that the teachers have to duplicate efforts by grading the same student work, but they may choose to do so. The actual grading of student work may be rotated or shared on condition that the system for grading and/or determining the final grades for the marking period are decided collaboratively.

A fallacy often verbalized is that special education students cannot fail inclusion classes. This is a myth. If special education students are given all accommodations and modifications delineated in their IEPs, and if those students are not placed for social benefit only, and they still do not meet minimum requirements, a low grade is acceptable. However, case managers and parents should be notified of the difficulties the student is having as early as possible. For the student who continues to perform poorly, a change of services, program or placement must be considered by reconvening the IEP team.

In addition to grades, guidance counselors and IEP team members may need frequent updates on students, especially when those students are not progressing adequately in relation to the goals on their IEPs. In the best arrangements for inclusion, both teachers are equal partners who take responsibility for the class and accountability for outcomes (Friend & Bursuck, 2002). Less desirable is the practice of the regular education teacher who submits reports for the regular education students, while the special education teacher submits reports for classified students. If the co-teachers think of students as those who are classified and those who are not, they are creating a dual system for delivering instruction (Shepard, 1987). Inclusion, on the other hand, is designed to create a seamless instructional system that accommodates the needs of all kinds of learners while providing access to normal experiences for students who have disabilities. Students who are at risk and general education students benefit from being in an inclusion setting since their needs, too, are accommodated through the collaborative efforts of the special and general educators who differentiate instruction to meet the needs of all learners, all of the time (Weiner, 2003; Saint-Laurent et al., 1998).

Modifications

The special education teacher usually modifies instructional material, delivery of instruction, test formats, methods of testing, time limits, and class environment for the student with disabilities. But either teacher can and should implement modifications or make accommodations outlined in the student's IEP. In the best collaboration, both teachers become experts in the use of various modifications and strategies so that either teacher can implement them. Ultimately, the special education teacher should be responsible for ensuring that the modifications delineated in the IEP are adhered to. A detailed IEP can be as long as twenty pages or more in some states. The special

education teacher is responsible for keeping the IEP in a locked place, which is accessible for those who work with the student. An effective strategy is for the special education teacher to provide all teachers who work with classified students with the list of accommodations, modifications, suggestions, and individual teaching approaches for each student.

IEPs can only be implemented when professionals and paraprofessionals are provided the information that they need to do the job. Some states are now mandating that all school personnel have access to the student's IEP if they work with that student. In any case, it is important for all those working with a student to know what has to be done to support him or her throughout the day. If the student needs to learn certain strategies for academics, social interactions, or mobility, this needs to be shared. For example, if the student needs a signal to remind him or her to use the calculator, this information needs to be made available for the mathematics teacher. If the student is working on independently operating his or her wheelchair, for example, this should be shared (Shapiro & Sayers, 2003). Teachers who supervise students with behavioral/emotional disabilities in non-academic venues, such as lunch or recess, also need to be made aware of strategies for behavioral intervention. For example, a well-intentioned teacher may create an undesirable outcome by trying to discipline a student who is acting out instead of using an effective behavior management strategy delineated in the IEP, such as quickly removing the student from his environment to help him or her deescalate. If students with exceptional learning needs are to excel, they will need the consistency of a coordinated effort in which all school personnel know what is needed, so they can implement the program as expected.

Lesson Planning

The general education teacher and special education teacher should collaborate on lesson planning. Although face-to-face meetings are most effective, schedules do not always allow extra time to plan, and some collaborative teams work via e-mail and phone calls. Usually a minimum of one hour of collaborative planning time a week should suffice, though, especially when beginning to collaborate, more time will probably be needed. When a student is new to the program and behaviors have to be shaped for the first time, face to face or other focused meetings may be required on a more frequent basis until the behaviors are acceptable. Once teams become familiar with each other's styles and curricular demands, planning becomes less time consuming and can usually be accomplished within school hours. Administrative support can assist in this effort since common planning period is best. In the absence of a common planning period, teachers can find other arrangements to meet and plan, including working lunches and/or breakfast meetings. Some middle/high school co-teachers request a common homeroom and use the time available to plan. Other co-teachers prefer to plan via the phone or e-mail. Since most schools are equipped with computers available for teacher's uses, co-teachers may communicate information with each other throughout the day by sharing plans, messages, strategies, and ideas through the school's network.

Preparing for Inclusion

Teachers in effective inclusive classes meet regularly and share responsibilities in a way that shows flexibility and a willing spirit. Following are ten important issues identified by the authors for collaborators to review before entering the inclusive classroom:

1. Philosophy of Education

The collaborative teachers should discuss their philosophies of education and feelings about inclusion before entering the inclusive classroom. Sometimes teachers are not given a choice about inclusion, and it is important for each to be able to voice his or her opinions and concerns. Just as important is for both teachers who are given the responsibility for the inclusive classroom to put their own wishes aside in order to make the program work. When teachers have differences of opinion, a discussion of why they are teachers in the first place may be necessary. "For most teachers, the incentive for working hard and giving up comfortable attitudes and

practices is to know they are more successfully educating students.” (Weiner, 2003, p. 15). One strategy to decrease apprehension of working in a collaborative, inclusive situation is the exchange of knowledge bases of both teachers. Misunderstandings and fear often stem from lack of knowledge and manifest itself as a negative attitude. Disability awareness and training for general education teachers is a vital component of a positive inclusive environment. “Unintentional attitudinal barriers relate to a lack of knowledge, education, understanding, or effort on the part of the educational system or staff” (Pivik, McComas, & LaFlamme, 2002, p.102).

2. Teaching Styles

Some teachers are dynamic, energized teachers; others may take a more subtle approach to teaching. Co-teachers need to discuss their preferred teaching style. If the styles are very different, the teachers need to work out a system that works for both of them. Most importantly, students often benefit when teachers have different styles that meet a variety of learning styles.

3. Classroom Management

The co-teachers in an inclusive class should discuss class rules and routines before entering the classroom. The rules include the procedure for bathroom/drink breaks, hall passes, signing out materials, and other daily class routines. A class with unambiguous class routines and expectations will function more smoothly and with fewer disruptions than a class without a clear plan.

4. Behavior Management

A primary area of concern in co-teaching is the issue of behavior management. Discipline and behavior management is most effective when both teachers share responsibility for disciplining all students. Most importantly, the co-teachers need to present themselves as a team to avoid students playing one teacher against the other.

5. Curriculum Content

Although the special education teacher is the “learning specialist,” he needs to be knowledgeable of the curriculum content. For example, before entering a British literature inclusive English class, the special education teacher can find out the novels and plays the students will be expected to read and read them ahead of time. It is difficult, if not impossible, to be an effective inclusion teacher if only the general education teacher knows the content. If this were the case, what happens when the general education teacher is absent? In effective inclusion, the class should carry on without any interruption in course content. Recently, two special education teachers were observed near the end of the school year sitting at desks within their inclusion classes, offering no input. When questioned about their roles, both replied that they did not know the content, geometry and Spanish, respectively. The authors of this article find this attitude defeatist and ineffective. Learning content is part of the special educators responsibility.

6. Teacher’s Roles and Responsibilities

The roles of the collaborating teachers are as unique as the people who make up the teams. Every role and responsibility cannot be established prior to entering the inclusive class, but many can be discussed ahead of time. For example tasks such as keeping attendance, checking homework, putting class schedules on the board, and distributing and collecting materials can be worked out ahead of time. The special education teacher should not be expected to work as an aide for the class. For example, if copies need to be made while the class continues working on social studies questions, either teacher can go make the copies, while the other one continues with the questions. Confusion about teaching roles and responsibilities may cause stress and create unhealthy, ineffective situations (Dettmer, Thurston, & Dyck, 2002). The authors propose that content area teachers are “content specialists” whereas special education teachers are “learning specialists” armed with strategies, modifications, and approaches that will entice, encourage and provide clear instruction for students with exceptional learning needs.

7. Contacting Parents

Some co-teachers take turns calling parents. Others feel more comfortable with the general education teacher calling the parents of the general education students and the special education teacher calling parents of the special needs students. Regardless of the way the team works this out, it is extremely important that the information discussed with parents is shared between the teachers prior to and after the contact is made.

8. Assessment, Grading, Evaluation Practices

Although the primary responsibility of grading falls on the general education teacher, both teachers should have input on the grades of all students. Some high quality teams share a grade book with both teachers having access to grades. One collaborative team graded all major assignments and exams together, while taking turns grading smaller assignments and homework.

9. Planning Considerations

Lack of planning time is probably one of the areas of greatest concern about co-teaching. It is important for both teachers to have input on lesson and unit planning. Both teachers need to know not only what information will be covered that day, but also how that day's lesson fits in with the unit plan.

10. Instructional methods and materials

Both teachers can share the responsibility of preparing materials for lessons. For example, for a lesson on the solar system, the special education teacher may bring in toothpicks, Styrofoam balls, and other materials needed to make planets. The regular education teacher might bring in a video for an introduction to the lesson. The least desirable approach to material distribution is for general education teacher to provide materials for only the general education students, while the special education teacher provides materials for the special education students.

Final Comments

Co-teaching can be a rewarding experience when teachers work collaboratively to meet the needs and goals of every student in the class. Both teachers bring a unique set of abilities, skills, and talents to the classroom. The collaboration between prepared, willing teachers is invaluable for both the regular and special education students.

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School Collaboration Research: Successes and Difficulties

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While some research on educational topics may occur in analog settings, such as a laboratory, research on areas in school reform need to be conducted in actual school settings. Administrators and teachers are often skeptical of ivory tower theories and wide-sweeping programs they are told will change the way students learn. For these assertions to have any credibility, school personnel need to be provided with clear evidence that, indeed, the reform has been utilized with “real children” in “real schools,” which have resulted in “real” (and positive) outcomes for students. Clearly, this desire for research-based proof of impact is laudable; there are simply too many new initiatives offered daily that have no basis in outcomes-education and merely usurp the time of already overtaxed teachers. That said, however, there are numerous issues related to conducting reliable and valid research in “real schools.”

Issues in School Research

A few of the major issues that need to be considered when conducting research in school settings are those of social validity, treatment integrity, change, and collaboration.

Social Validity

Researchers continue to emphasize the importance of doing research that has social value and is not merely done for the sake of doing research (Gresham & Lopez, 1996). School reform is certainly an area that has face value social validity. On the other hand, just because a university faculty member has a research interest which has its basis in school reform, district decision-makers are not required to approve its use in the classroom with children who may be “guinea pigs” for that study. It is the job of school administrators to determine what research can legitimately be done in schools, without negatively impacting the learning of current students.

Treatment Integrity

Treatment integrity is another considerable issue. Treatment integrity relates to whether or not an intervention is implemented as intended (Wickstrom, Jones, LaFleur, & Witt, 1998). For school research to be noteworthy, it must be both valid and reliable. Reliability relates to consistency and treatment integrity is a means by which consistency can be determined. The more latitude teachers have to change the way in which they implement the new method of reading instruction, for example, the less treatment integrity there is and the reliability for this research will be compromised. Thus, those individuals conducting research in schools also need to ensure they are certain their intervention is being implemented in the exact manner they intended. This is often difficult with the daily changes that occur in typical school settings.

School Change

Change itself is also an issue related to schools and school research. Fullan (1990) has done significant research on the amount of time it takes for real change to occur in schools. Most university researchers, unless conducting a study longitudinal in scope, do not interact with schools for a sufficient length of time on the same study. In addition, most schools are not likely to institute new programs if more immediate outcomes are not evident. Thus, despite the potential of a positive impact on student learning, researchers are rarely able to work in schools with the level of validity and reliability needed for actual change. Change also frequently results in

resistance. Resistance is an emotional response to a perceived or actual change. Menlo (1986) reports that the majority of professional resistance relates to how individuals fear change will impact them personally. Without a doubt, research in school-reform efforts involves change; just as assuredly, school reform efforts that involve collaboration will, by definition, impact individuals on a personal level as they interact with other professionals.

Collaboration

Friend and Cook (2003) describe collaboration as a style of interaction which requires parity in the areas of accountability and responsibility. They emphasize the need for effective communication and an understanding of one another's frame of reference. When individuals enter a school with the purpose of conducting research, there is frequently a lack of collaboration between the researcher and school personnel. Those who work in the schools view the researcher as intrusive and often oblivious to the true nature of the school setting, since that person isn't a member of the school culture. Researchers may consider the school administrators or faculty as resistant or unwilling to make the changes necessary to implement the research protocol as needed. This type of miscommunication and lack of collaboration between researcher and school personnel is especially difficult if the issue to research is collaboration itself.

Inclusive Education

Special education is the field devoted to the education and well-being of students with disabilities. There has been an increasing push to include students with disabilities in general education classes, with those supports provided for them as they learn with their same-age, typically-developing peers. Although many students with mild disabilities already receive a large portion of their education in general education classrooms, recent legal and legislative decisions are making this trend a more immediate concern for those schools not yet implementing inclusive education as much as would be expected or desired. This has led to an increase in the need for collaboration and consultation in K-12 schools.

For inclusive education to be a successful reality, general and special educators are expected to collaborate (Mastropieri & Scruggs, 2000). Special educators can also provide indirect services and resources through consultation, monitoring, or staff development. In an inclusive school environment, general and special education teachers may also engage in co-teaching, in which both teachers jointly plan, assess, and provide instruction in the same classroom to a group of students with and without disabilities (Dieker & Murawski, 2003).

Because inclusive education requires different skills and considerations, as well as additional training, schools may look to university faculty for guidance in their efforts. This is when the "chicken and egg" issue reveals itself. As university faculty seek to provide consultative support to schools wishing to engage in more collaborative arrangements, there is a natural tendency to want to study and collect data on the process, especially due to the current lack of sufficient research in this particular area (Murawski & Swanson, 2001). School personnel, on the other hand, are seeking demonstration sites from which to model their own programs. These demonstration sites are few and far between; in order to create them, researchers first need to collect adequate data on schools that are and are not successful in their inclusive efforts.

Two Comparative Studies on Collaboration in Schools

To emphasize the difficulty of conducting action research in schools, two examples of comparative studies which involved collaboration and consultation efforts in schools

are described. In each situation, one of the schools was successful in its efforts, and one was not. After each situation has been described, the themes that were noticed as key to impacting success will be shared.

High School Co-Teaching Study

In a medium-sized school district with two high schools less than two miles apart from one another, permission was granted by both school principals for a study on co-teaching. Support for this project emanated from a district mandate for both schools to become more “inclusive” in nature. The researcher, a university Special Education faculty member, met with administrators and department chairs to describe the study and its required components. The purpose of the study was to collect data as teachers engaged in various collaborative teaching arrangements. One week before school started and the study officially began, one of the two schools backed out. The reasons cited included a difficulty with scheduling and a lack of teacher willingness to collaborate. The other school continued in the study for the school year and has continued to use co-teaching as a service delivery option for students with disabilities.

Elementary School Co-Teaching Study

In a large urban school district, two elementary schools also agreed to participate in a study on co-teaching. Again, a district mandate for more inclusive education encouraged support for this type of collaborative arrangement to meet the needs of students with disabilities in the general education classroom. Prior to the study itself, participants from both schools attended a combined training to enhance treatment integrity and ensure consistency in training. At one school, teachers planned and taught collaboratively, welcomed university observation, and sought feedback for improvement. However, at the other school, the special education teacher was often not in the room and, at times, the university observer was told “it wasn’t a good day to be observed.” By the end of the semester, the second school no longer had any semblance of co-teaching occurring, nor would they participate in post-testing or interviews.

Themes Evident in School Research Attempts

Administrative Support

Literature related to school reform often cites the importance of administrative support as a key component of systemic change (Daane, Beirne-Smith, & Latham, 2000; Salisbury, & McGregor, 2002). In the examples given, although the school principals gave their approval in each case, there was a significant difference in the quantity and quality of their involvement after the initial approval stage. In the high school example, the principal in the first school had direct meetings with the researcher whereas in the second school, an assistant principal was relegated to the position of liaison. Thus, when the purpose and logistics of the study were described at a subsequent meeting, the principal at the second school was not part of that discussion. A similar disconnect happened at the elementary schools, in which one school presented a united front at all meetings, while the second school primarily relied on one assistant principal and a few faculty to arrange for the logistics of the study. In both the elementary and high school situations, the schools that demonstrated significant administrative involvement, understanding, and support of the research being conducted were more successful.

Teacher Training and Buy-In

A significant amount of education-related literature has established that teacher attitudes play a significant role in the buy-in teachers have to new programs (Shade & Stewart, 2001). Change is all too common in schools and teachers tend to be resistant if the rationale for change is not made clear to them (McLeskey & Waldron, 2002). This resistance is to be expected. However, research has also demonstrated that teacher buy-in is a major component for the effective integration of inclusive practices at the school level (Gerber & Popp, 2000; Shade & Stewart, 2001). Thus, for those schools wanting to increase teacher buy-in for inclusive practices, attitudes towards these

practices need to become positive. This often requires teacher training in the form of discussion groups, formal and informal professional development (in-services), indirect support (e.g., providing relevant journal articles), and modeling.

Once again, the cyclical difficulties of education research come into play. Teachers are usually more willing to enter into professional development opportunities if they already have a measure of buy-in or an open attitude about the subject. If teachers are not interested in a topic, feel it does not apply to them, or believe it is another “fly-by-night” approach, they will avoid getting involved. One of the components to effective collaboration is that it is voluntary in nature (Friend & Cook, 2003). Clearly, if teachers need to volunteer to collaborate, a measure of buy-in needs to be evident in the first place. Because of this conundrum, administrators often have to cajole, coerce, or provide incentives to faculty to participate in professional growth opportunities. For this to even occur, however, requires true administrative support for the initiative, which may or may not be in evidence.

School Vision and Priorities

Teachers balk at change that appears unrelated to student outcomes. They resist programs that seem to be created merely to demonstrate the school or district is on the appropriate bandwagon (Shade & Stewart, 2001). At two of the schools mentioned in the above examples, collaboration and inclusive practices were introduced to teachers without any type of vision or demonstration that this was truly a priority of the school. Thus, the lack of buy-in, and the subsequent negative attitudes when teachers were required to participate, was both justified and to be expected. On the other hand, some schools spent the time necessary to articulate an over-arching vision for inclusion at their site. This, in addition to the words and deeds of the site administrator, demonstrated to teachers that this initiative was a priority for the school, its faculty, and its students. This type of clear top-down support, for both the collaborative practices and the research to be conducted, led to improved teacher attitudes, increased teacher buy-in, and a more collaborative school climate to foster inclusive education.

Discussion

These results indicate that certain aspects of collaboration are indeed “emergent,” as asserted by Friend and Cook (2003). They describe emergent characteristics as ones that must be present to some degree when a collaborative activity begins, but which will typically increase as they experience success with collaboration. Emergent characteristics include (a) valuing collaboration as an interpersonal style, (b) trust, and (c) a sense of community (Friend & Cook, 2003). While these emergent characteristics need to be present for collaboration to occur, they also increase the chances of successful collaborative activity, such as that required for inclusive education. In addition, these characteristics appear to impact researchers’ ability to conduct valid and reliable research in a school setting. In the settings devoid of collaborative efforts, a researcher is left to report what did not work and frequently to make assumptions about why data collection was unobtainable or tainted. Unfortunately, this may also lead to situations wherein those schools with collaboration intact become more collaborative and receive more assistance, whereas those schools without collaborative practices do not receive beneficial assistance. In essence, the “rich get richer.”

Social validity, treatment integrity, and the influence of change clearly impact research conducted on school reform efforts to include research conducted on collaboration and inclusive education. In addition to these issues, however, administrative support, teacher buy-in, and a school vision also play a major role in the ability to collect valid and reliable data on school collaboration efforts. For some schools, the “chicken and the egg conundrum” is all too evident; research on positive outcomes of inclusive

education is needed to garner the necessary administrative support and teacher buy-in, despite the fact that researchers first need to have administrative support and teacher buy-in in order to demonstrate the potential for positive outcomes of inclusive education. This situation brings to mind that of the farmer who asserted he was too busy chasing cows to mend his broken fence.

As researchers interested in the collaborative efforts occurring in K-12 schools, we need to continue to look for ways to support schools in these efforts, while at the same time providing opportunities for them to mend their broken fences. Until this happens, the “chicken and the egg” problem will persist and, while K-12 educators and university researchers struggle with the difficulties inherent to school-based research, students will struggle without the benefit of research-based best practices in the inclusive classroom.

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“Does One Size Fit All?”: Culturally Responsive Collaboration

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“The switch from consultation to collaboration came when the role of the special educator evolved from that of the expert to one of a collaborator, or joint problem solver” (Cramer, 2006, p.18).

But what if some parents don’t want to be a part of a joint problem solving system?

A central feature in the Individuals with Disabilities Education Act (IDEA) is the notion that parents and educators need to seek meaningful collaborations in order to produce more effective and relevant programs for students with disabilities. Friend and Cook (2007) emphasize that IDEA, in fact, mandates collaboration in the form of parental participation at multiple stages including all eligibility, placement and service decisions as well as their right to be regularly informed about their child’s progress. This was recently highlighted in the National Education Association’s IDEA Re-authorization Recommendations which emphasized that IDEA should: “Ensure that parents are full partners in their child’s education” and specifically:

NEA considers active parent participation as critical for student success. When parents, teachers, administrators and related service providers work and plan together, focused on matching the educational environment and appropriate supports with the learning needs of students with disabilities and those without, the IEP process yields programs and services that maximize the success of every child (NEA, 2008, p.1)

To support this parent-professional collaborative stance, a number of authors (Friend & Cook, 2007; Lipton & Wellman, 2003) offer varied models for how to engage in collaboration including the Consultative model (the expert informs novice), the Coaching model (guiding another in collaboration through inquiry), and the Teaming model (student-centered problem solving). The teaming model, however, appear to be the favored approach to collaboration under National Education Association’s IDEA Re-authorization Recommendations and from our own observations, across many special education communities. Given this call to increase parental participation in their children’s educational programs, it is imperative that we examine the impact of culture and parental views on the collaborative and participation process. Specifically, what if parents don’t choose to be a part of a joint problem solving system? Is this an acceptable level of participation respected by the IEP team?

“No, No, No, Lo Que Ustedes Digan Como Maestros”

Last year, Fausto and his mother immigrated from the Oaxaca region of Southern Mexico. As an infant living in Mexico, Fausto was identified as having moderate cognitive delays and other developmental disabilities. As a result of these disabilities, Fausto did not participate in any formal educational opportunities while in Mexico and was kept with his maternal grandparents while his mother worked various jobs to support her son. Seeking greater opportunities for her son, Fausto’s mother immigrated

to the United States where he was quickly assessed and found eligible for special education services. The IEP team suggested an inclusive educational placement in a traditional kindergarten setting with support services as the least restrictive environment. Upon entering kindergarten, Fausto began to exhibit a variety of challenging behaviors including a tendency to wander and periodic screaming with no immediately observable antecedents. His general education teacher quickly reconvened his IEP team to discuss these concerns with his mother.

In the spirit of collaboration, the IEP team sat down with Fausto's mother to discuss these behaviors and seek her support in developing a coordinated home/school behavioral program to replace these behaviors with more appropriate ones that would enable his continued participation in his current classroom. When her opinion was solicited or when the team sought consensus, Fausto's mother would repeatedly respond by saying, "No, no, no, lo que ustedes digan como maestros" [No, no, no, whatever you say as teachers."] After the meeting, Fausto's kindergarten teacher commented to the team that Fausto's mother did not appear to be "vested" in helping her son and that any behavioral change was simply going to be the school's responsibility. If we evaluate this scenario using the teaming model for collaboration as the standard, this "collaboration" was clearly not successful.

Given this example, and other similar scenarios garnered from our work with beginning teachers and families in the IEP process, we feel that a re-examination of collaborative models is needed, using a cross-cultural lens. We challenge the notion that the teaming approach to collaboration is a "one size fits all" model for all of our families. We feel that families may not want to be equal partners "participating fully" at the table, yet this in no way reflects upon their level of caring and commitment towards their children (Ayala, 2000). Fausto's mother left her family and support systems in Mexico and immigrated to a foreign country to seek better educational opportunities for her son. It would appear, at some level, that she clearly is "vested" in her son's education. Unfortunately, the general education teacher's comments reflect a perspective that successful collaboration only occurs when everyone "participates fully" in the development of the IEP and this perspective seems to mirror the intent of collaboration as implied in the National Education Association's IDEA Re-authorization Recommendations.

The examination of parent-professional collaborative partnerships is not new to our field and, indeed, has been the subject of a wide array of articles touting the multiple benefits of these relationships (Levine & Thomas, 2008; Turnbull & Turnbull, 2006). Researchers have also addressed the idea of collaboration within cross-cultural contexts including an examination of the variables that may account for Fausto's mother's "reluctance" or "resistance" to collaborate, including:

1. Parents may lack the necessary skills and/or knowledge about the programs and services offered (Koonce & Harper, 2005).
2. Parents may sense intimidation and alienation because of the systems structure and use of jargon embedded in the process (Zetlin, Padron, & Wilson, 1996).
3. Limited English proficiency and/or lack of interpreters may limit their access to the decision making process (Sileo, Sileo, & Prater, 1996).
4. A personal history of negative school experiences may also challenge their participation (Thorp, 1997).

5. Cultural values may frame a parent's decision to defer all school-based decisions to the appropriate school personnel given their expertise in education (Correa & Tulbert, 1993; Thirumurthy, 2004).
6. Parents may have alternative priorities including socioeconomics (DeGangi & Wietlisbach, 1994).
7. Intergenerational differences and/or varied levels of cultural proximity to their ethnic origins which may influence how they see their role within the school system (Harry, 1992; Kwak, 2003).

Given these studies and related research, educators are beginning to understand the complex interaction of how culture, language, socioeconomic status, and previous school experiences may influence parental participation. Yet the notion that the underlying principles of collaboration may also be culturally irrelevant has not been thoroughly examined and considered in the context of our re-authorization debates surrounding the IDEA. Indeed, Voltz (1993) reminds us that parent participation was created by our school systems' conceptualization of collaboration and a "one size fits all" approach to family involvement may not be appropriate.

Must We Collaborate?: A Paraprofessional Perspective

During a recent Early Childhood Special Education (ECSE) training workshop in the San Francisco Bay area of California, several paraprofessionals were gathered for a breakout session focusing on the establishment of collaborative relationships with the families of children enrolled in their programs. Participants were told that given the priority for developing collaborative relationships established by the IDEA, the intent of this session was to have the participants reflect upon their own collaborative practices with the families they serve. By examining the physical arrangement, daily schedule, and communication systems they currently have in place, participants could determine if any of these practices were barriers or benefits to facilitating family involvement in the program. Xiang, an ECSE paraprofessional from San Francisco, was among the participants at this workshop and provided a unique cross-cultural perspective to the discussion. When the topic of collaboration in ECSE programs was introduced, Xiang raised her hand and simply asked: "Must we collaborate?"

Intrigued by this statement, I (first author) approached Xiang after the workshop to identify the basis for her comments in relation to our discussion of collaborative practices in special education. Her response marked a dramatic challenge to the foundation of collaboration itself, namely, that everyone does not necessarily want to be involved in the decision making process. "Well, maybe not all of the Chinese families I work with want to make decisions about their children. Maybe they feel it's more important that someone else make them. I think, maybe, I would be the same way."

The role of "equal and active partner" may be a foreign concept to some of our families from diverse cultural backgrounds (Correa & Tulbert, 1993). The notion that cultural values, beliefs, and behaviors may influence a person's worldview (including their perception of collaboration) is captured by Lynch and Hanson (2006). They provide guidelines that support professionals in establishing cross-cultural competency when working with families from diverse backgrounds and cultures. Cross-cultural competency is achieved by: (1) having professionals first develop an awareness about their own cultural perspective; (2) having professionals then develop an awareness of other's cultural values, beliefs, and behaviors; (3) having professionals then seek to understand culturally generic values and how they vary across and among cultures; and (4) having professionals seek specific information about cultural practices to child rearing, health and disability, and seeking of help/support systems. A key principle in this model is the examination of culturally specific information about how a family will seek help, and we believe this should include their role in the collaborative process. In contrast, the "teaming approach" to

collaboration specifies what the family's role will be, namely "equal and active partners." We question if this is a valid expectation within a cross-cultural framework.

This and other models of culturally responsive practices (Cartledge, Gardner, & Ford, 2009; Callicott, 2003; Chen, Brekken, & Chan, 1997) allow professionals to question the unique cultural or individual basis for how the family seeks relevant services and thus, their role in the process as well. Clearly, Xiang's comments describe how the families she works with seek help and make decisions, yet these appear to contradict the demand for the increased participation model stated in the IDEA. The irony in Xiang's case is that even the support staff we hire to "bridge the gap" between ourselves and the diverse families we serve may also experience this cross-cultural conflict with respect to the concept of collaboration. How, then, does this model support Xiang's view that from within her cultural framework, collaboration in the form of "full participation in the decision-making process" simply does not make sense from her cultural standpoint?

The answer may lie in revisiting the idea of collaboration from within a "posture of cultural reciprocity" (Kalyanpur & Harry, 1999). Cultural reciprocity is a two-way process of information sharing that leads to a shared understanding and respect of each other's values and assumptions. It also offers a problem solving framework from which to build culturally responsive working relationships. There are four recommended steps in this model: (1) examine the cultural values within which your professional decisions and recommendations are embedded; (2) find out whether or not the family you are working with understands and accepts these assumptions, and if they do not, how their values differ from your own; (3) acknowledge and respect any differences identified, and fully explain your values and assumptions; and (4) through discussion, examine ways of adapting your professional decisions or recommendations to the values of this family. While the teaming model does establish a method for collaboration based upon shared decision-making, it also retains the expectation that everyone will participate "equally," which may contradict the values and assumptions each person brings to the collaborative relationship. A culturally responsive model of collaboration jointly establishes the nature of the collaborative relationship and may or may not include a teaming approach.

We cannot neglect the research supporting the positive outcomes of parent involvement in their child's educational process and the need for parents to be informed of the decisions made on behalf of their children (Friend & Cook, 2007). For most families, this is important and relevant. Yet in our effort to (1) understand families unique needs (2) offer information and services they need to support their family in raising a child with special needs, and (3) facilitate their full participation in the decision making process, are we making a leap of faith that the third step is necessarily relevant for them? A culturally responsive model clearly supports the first two steps, but we question if it is our obligation to facilitate families' engagement in a decision-making model. Instead, we believe that we need to re-examine our conceptualization of parent participation within the framework of IDEA.

This does not imply that any single model of collaboration may be ineffective. Rather, it offers the consideration that perhaps we should seek a broader definition of collaboration, one that is flexible and establishes meaningful relationships with all families and values their understanding and definition of participation. As we continue to re-examine the IDEA, and more importantly, our relationships with diverse families, we need to closely examine the concept of what truly is a "collaborative relationships" and who defines our respective roles. Are shared decision-making and seeking

consensus a meaningful model for all our families? Perhaps we should ask Fausto's mother.

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Two New Evaluation Instruments for Collaboration

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Introduction

Benefits of university-school collaboration have long been a part of the education literature. Among the most outstanding of these benefits are: (a) an expanded base of expertise for the project (McCall & Restow, 2001), (b) a sense of professional renewal for participants (Lewison & Holliday, 1999), and (c) multiple perspectives in problem solving (Sirotnik & Goodlad, 1998). Once the collaborative team is identified, however, several roadblocks to these benefits often appear—some of which are less noticeable by a collaborative team. Three often reported roadblocks include a lack of clear project objectives, insufficient time or energy for the project, and disappearing administrative support (Johnson, Johnson, & Holubec, 1992; Lieberman, 1992). Different beliefs held by collaborative participants can be roadblocks that are often not obvious until a project is completed (e.g., McCall & Restow, 2001). These beliefs can affect participants' perceptions of: (a) their role in carrying out the project, (b) the design of the project deliverable, and (c) their ratings of the usefulness of the collaborative project (Markowitz & Crane, 1993).

Two New Measures of Participant Perspective

Typically, qualitative methods such as journals, meeting notes, or interviews are used at the end of a project to report participants' perspectives of project worth (Vare, 1997). In reviewing reports of collaborative curriculum projects, McCall and Restow (2001) found the different perspectives held by participants (e.g., philosophical goals) can affect the development of curriculum, such as selection of teaching methods or resources to be used in the project (McCall & Restow, 2001). The differences in philosophical approach should not be surprising. Teachers and professors work in different cultures, with different job expectations and status (Brookhart & Loadman, 1990). The expectations of the roles of those who collaborate, therefore, vary according to the philosophical beliefs, expectations and attitudes of the project participants. Without some measure of this difference, project goals might not be clear, leaving otherwise well planned projects bereft of the real benefits of collaboration—expanded expertise and professional renewal.

The purpose of this article is to describe two instruments that can be used in university-school collaborative projects. This article also describes lessons learned in curriculum collaboration and suggests constructs for use of questionnaires.

Method

Project Goals-Integrating Discourse Skills in Social Studies/Reading

Early in the project, teachers and researchers decided to focus the curriculum project on children's skills in discourse to increase meta-cognition skills—talking about learning. Discourse has been defined as the way in which ideas are exchanged—particularly of what ideas entail (Schram & Rosean, 1996). The benefits of teachers learning to integrate strategies of discourse (e.g., hypothesize, explain, expand, question, probe) into a social studies and reading curriculum

are: (a) classroom environment of reasoned inquiry (Schram & Rosean, 1996), (b) increased conceptual development (Cobb, Boufi, McClain, & Whitenack, 2000), (c) increased knowledge of a domain area (Latham, 1997), and (d) improvement of task related knowledge, such as memory improvement (Memke & Presley, 1994). Several studies have identified how integration of these domain areas can enhance reading skills. These benefits are attractive to teachers because they (a) increase knowledge in the domain area, (b) more highly engage students (Klingner, Vaughn, & Schumm, 1998), and (c) foster “deeper-richer” classroom “talk” (Roser & Keehn, 2002). These benefits were important to the collaborative team.

Phases of the Collaborative Process

Phase one: University-school needs. The project was an outgrowth of a district mandate to align social studies and reading standards for the fourth grade. This mandate changed to mathematics alignment after the grant funded. However, because alignment of social studies and reading domain areas was a goal of the grant and of interest to the collaborative team, the project proceeded as a curriculum-planning grant. The team identified three school needs. First, increase the teaching of state history. Second, increase student meta-cognition skills using discourse (i.e., self-talk) in history lessons. Third, seek resources to increase teacher, researcher, and student knowledge of state history. To enhance historical knowledge, a history professor developed a bibliography of readings for the project team. (see website <http://tlac.coe.tamu.edu/faculty/facpages/pryor.html>)

Phase two: Planning for standards alignment. To learn more about students’ meta-cognitive abilities, teachers decided to use a test generated outside the district. A reading professor provided samples of analytical inventory and a professor-developed test of meta-cognition. Teachers identified sections to administer for formative evaluation.

Phase three: Changing focus. Teachers-researchers collaborated on lessons that could be developed after administration of the two tests of meta-cognition. The grant provided The Texas Weekly newspaper for all fourth grade students. Teachers used this newspaper for discussion, critique of current events, and written narrative responses. Globes, maps, and a limited number of library and trade social studies books were available at the school. Teachers reported that the school library and classrooms were limited in historical trade books and biographies about development of Texas during 20th century.

Phase four: Struggling efforts and conflicting perceptions. Because the project was designed to align standards, and did not include a student-testing component, teachers began to regard administration of tests as “out of pocket” or extra work. Given the amount of time needed for mandated district benchmarking tests in preparation for state mandated achievement tests, the implementation of two additional tests, even sections of two tests---became understandably unacceptable to the teachers. It became evident that the teachers’ perceptions of the utility of additional formative testing had changed, and the researcher role concomitantly shifted from the provider of information about formative testing and curriculum alignment back to providers of teaching resources for standards alignment.

Phase five: Co-developers’ curriculum decisions. Teachers selected children’s books that could be provided to the school by the grant. To determine various approaches to teaching using these books, teachers were urged to review their Philosophy of Education Scale (POES, Pryor C. R., 2003). Humanist, (student-centered) teachers might decide to use books differently than executive (behaviorist) teachers.

Participants

The study was conducted by university faculty members in collaboration with fourth grade teachers at a K-4 elementary school. The teacher alignment team was composed

of four teachers and the school principal. District shift in principal school assignments occurred the week the project funded.

Roles and Responsibilities

The principal investigator was responsible for organizing collaborative team planning and integrating aspects of the alignment project into university methods course syllabi. University faculty members provided expertise in reading, state history and developing/administering two evaluative questionnaires. The researchers' primary role was that of domain area experts in identifying books, statewide resources and testing materials. The teachers' primary role was to implement and evaluate resources. The principal coordinated details of school-university organization.

Instruments

Philosophy of Education Scale (POES). (see author website <http://tlac.coe.tamu.edu/faculty/facpages/pryor.html>) POES is composed of 84 items, each evaluated on a 5-point scale that measures 1 of 7 variables: role of the teacher, role of knowledge, lesson planning, student evaluation (grading), and three measures of classroom organization-- environment, management, and activities. The scale items are categorized by use of a test key that corresponds to four philosophical approaches to teaching: (a) executive (manager), (b) humanist (facilitator), (c) classicist (subject expert), or (d) informationist (interpreter/technologist). Two sets of curriculum theory graduate students (n=45) conducted content validity of the POES.

Attitude and Belief Questionnaire (ABQ) (Pryor, B.W., 1990; 2003). The theory of reasoned action (e.g., Fishbein & Ajzen, 1975) guided the development of the ABQ. This theory holds that the performance of any given behavior is determined by an intention to perform the behavior, and behavioral intention is determined by an attitude toward performing the behavior, and a subjective perception of normative (i.e., what other people think) influence concerning the behavior. The ABQ is a seven-point bipolar evaluative and probability scale with four sections; each section measures one of the four dimensions of the collaborative curriculum alignment project: importance of resources provided by the grant, utility of the project, belief in the importance of the project and belief that important others think the project is important.

The POES was administered to the fourth grade teachers at the beginning of the project so that they could begin to identify their philosophical approach to curriculum. The POES was again administered to these teachers, along with the three researchers at the end of the project. The ABQ was administered to both groups at the end of the project. The principal and one professor did not complete either scale. The three professors who did complete the ABQ, did not complete the "beliefs about utility of curriculum integration" section since they do not teach fourth grade.

Results and Discussion

Comparison of Teacher-Researcher Differences on the POES.

Although the researchers held similar philosophies, classicist (content-focused), and humanist (person-centered), the teachers were more diverse in their overall philosophical approach. Teachers' ratings of executive (behaviorist) and informationist (technological) were higher and more spread out than those of the researchers. This comprehensive philosophical approach among the teachers was reflected in their development of classroom activities (e.g., use of student-centered projects). Teachers' philosophical approach (e.g., use of activities and materials) to curriculum design was important to the university preservice teacher methods faculty. The researcher team wanted to translate the activities used by the teachers (books and newspaper) into activities that could be integrated into university syllabi. The fourth grade teachers and researchers agreed that the alignment of university curriculum (and professor philosophical approach) with that of the field-based schools in which preservice teachers are placed during the semester of their methods courses can help preservice teachers develop skills in integrating

curriculum and learn the culture of school curriculum decision-making (Metcalf & Kalich, 1996). Table 1, shows the comparison of teacher and researcher philosophical approach to teaching. Please contact author(s) for any mentioned tables and/or charts. carolinepryor@yahoo.com OR rui.kang@usa.net

Comparison of Teachers-Researcher Differences on the ABQ .

Utility of Project Resources

Teachers and researchers differed on their ratings of three items: Use of Texas Weekly, description of the Institute of Texan Cultures, and use of the POES. These items were rated highly by the researchers, as were all resources; other resources (e.g., bibliography of Texas historical readings) were highly rated by teachers. Teachers explained that the newspaper arrived mid-term so they did not have full use of this resource; and the other two items were perceived as too abstract and lacking information on how to use them. To enhance personal knowledge, teachers ordered a book on Texas History and highly rated the item “bibliographic resources.” The teachers also highly rated books they had ordered for future use with the fourth grade classes.

Utility of the Project Overall

The teachers rated the utility of the project as “low” on all items. Researchers, however, rated two of the items highly: “project helped fourth grade students” and “project helped to integrate into other subjects”. Given the shift of project focus, from alignment to formative evaluation, and back again to alignment, it is not surprising that perceptions of utility differed. However, belief in the co-development of this type of project holds potential for continued work, as seen in the teacher-researcher belief ratings.

Belief in the Alignment of Social Studies and Reading Standards

Since they were not teaching fourth grade, researchers did not complete the “belief about alignment” section of the scale. As indicated in Table 2, teachers highly rated additional staff development for future alignment projects. They also highly rated collaborative planning. Without information gained from belief items such as those on the AEQ, projects can easily overlook an important aspect of collaboration: participant need for added knowledge. Table 2, portrays teachers-researcher differences in perceptions of the project. Please contact author(s) for any mentioned tables and/or charts. carolinepryor@yahoo.com OR rui.kang@usa.net

Conclusion: Lessons Learned

As teachers and researchers co-develop curriculum alignment plans as a means for using state mandated standards in teaching, the following findings appear important. Quantitative data can be used to evaluate goals and philosophical approaches that are usually not collected before and after collaboration projects. By using instruments such as the POES and ABQ, we were able to identify the strengths of the project as well as the gaps between teachers’ expectations and those of the researchers. We suggest that researchers employ these instruments to increase understanding of goals and perspectives among participants in collaborative projects.

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Collaborative Voices: One University-School Model

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In the last decade, teachers have been asked to change the way they perceive their roles, teach curriculum, and assume responsibilities as teachers. Many professional development opportunities present ways to create and maintain the new mandates (Lieberman & Miller, 1999). However, many teachers are frustrated with the type of professional development they receive from districts. A majority of professional development workshops provide a “one-shot deal” for curriculum strategies that align with district testing (Strickland et al., 2001; Wilson & Berne, 1999). Many of these inservices cover a breadth of material without focusing or addressing depths of understanding in terms of content. After the initial visit, the presenter disappears and is never seen or heard from again.

The purpose of this new collaborative model was to create relevant, dialogue-driven collaboration among K-6 educators and university faculty and to increase communication among colleagues at the school site. The planning model has three stages: 1) dialogue and collaboration with the professor, teachers, and principal before the workshops; 2) dialogue with the professor and faculty in the workshops; and 3) dialogue among colleagues in grade level groups.

The first stage was finding the needs of students and teachers around writing instruction. The professor looked at materials, past professional development, and had conversations with teachers about teaching writing. The second stage included two workshops that used the themes and requests of the teachers in developing expository and narrative writing. The professor brought materials, lessons, and theoretical frameworks that provided models to start dialogue around writing with K-6 students. The last stage was to create grade level sessions to share student work samples for teachers who wished to participate. During those monthly sessions, the professor brought suggested materials to share around analysis of student work and feedback from the teachers as to what problems they encountered in teaching writing genres. Teachers brought pieces to share with the group to problem-solve strategies to use with students of all levels. Ongoing dialogue was encouraged, and some grade levels met to discuss writing outside of the monthly workshops.

Through these collaborative workshops, teachers learned to dialogue with colleagues and a university professor to change their teaching practice. These conversations led teachers to look more closely at student work and to discover the relevance of sharing their practice with others. Teachers freely exchanged ideas on how to teach students who had specific writing issues and in turn, teachers were more eager to try out new strategies with their students to improve the quality of writing.

The Principal’s Perspective

The university professor and the principal agreed that teacher learning needed to be ongoing, interactive, and supportive (Ball, 1996; Little, 1993). They found that teachers generally do not directly connect professional development programs to classroom

practice because ongoing programs are rare. During traditional professional development sessions, there is no forum for discussion of trial and error after the ideas are put into practice (Fiszer, 2003). Without follow up interaction, it is extremely difficult to implement a new pedagogy not adjusted for the needs of the school's population. Too often no structured method is in place to help teachers improve practice by encouraging them to interact with or watch other colleagues in action (Cochran-Smith & Lytle, 2001; Little, 1999). In addition, collaboration in professional development must go "beyond personal, idiosyncratic reflection, or dependence on outside experts to a point where teachers can learn from each other, sharing and developing their expertise together" (Hargreaves, 1994, p. 186). With this research in mind, we created an ongoing model that increased dialogue among faculty around their teaching practice.

Grade Level Collaboration - Time Well Spent

After the initial sessions, we planned times when the professor would be available to return. The principal offered the optional sessions to all grade levels, and a few teachers took advantage of the opportunities. The optional nature of the sessions was a key factor in generating positive experiences around student work and teacher dialogue. Fourth grade teachers found they needed samples based on the exact same prompt to make a review session worthwhile. The team had gathered samples based on a compare/contrast theme but found it difficult to generate useful "next steps" since they were not all basing their findings on the same prompt. Second and third grade teachers brought writing samples for review purposes. By comparison, a few teachers seemed relatively unenthusiastic, but others were more positive to meet on this topic. However, several good ideas were generated for future use. One teacher was eager to implement a color-coding approach where students would write their topic sentence on green paper, supporting sentences on yellow, and conclusions on red. This teacher had found that students had a difficult time identifying main and supporting ideas. She was eager to experiment with the color-coded graphic organizer in her classroom.

Kindergarten teachers freely expressed themselves about the high expectations placed on student writing at such a young age. The teachers communicated in a way that showed trust of the professor and took in her comments in an open manner. It was the level of trust that seemed to allow them to connect. They were not teachers who said "the right thing" in front of the principal at that time, but rather they were educators expressing their valid views to each other about what worked and what did not in relation to their practice. The discussion resulted in some modifications to the writing rubric they had created when content versus mechanics issues were reviewed.

This type of dialogue session showed how ideal a relatively unstructured format can be. The pros and cons of kindergarten work sample rubrics were discussed. This led to a review of the structure of lessons in the classroom and how the team meets to plan. The value of having a professor available to take an objective view of practice was refreshing for teachers. She asked open-ended questions about strategies used in teaching writing. Teachers then reflected on how those strategies worked in their individual classrooms.

The University Professor's Perspective

Teaching can be an isolating experience. To open the door and collaborate is not only difficult, but also scary at times. The university professor wanted to help teachers see that talking about their teaching practice helped create a way to end their isolation and build dialogue. Teachers were brought into the initial conversation to validate their

views and integrate their needs into the process. The history of top-down professional development by outside sources was still ingrained in their thinking. The university professor needed to gain teachers' trust, not only as an "expert" from the university, but by presenting herself as a colleague who spent many years teaching in elementary schools. Alternative ways to look at teaching through examining student work was offered.

Initially, the university professor was seen as the expert in writing after the first K-6 workshops. The sessions were interactive but contained more elements of a traditional professional development. An overview of the writing process, graphic organizers, rubric development, and the connection between literature elements and writing was presented. Faculty participated in creating rubrics with criteria, connecting picture books with the elements of literature, and had opportunities to brainstorm strategies across grade levels. At the end of the session, they requested more materials on rubrics and assessments. Teachers wanted to try several different types of rubrics to compare which format might possibly work best with their students.

Each time the university professor met with individual grade levels, the dynamic changed from expert-led to teacher-led discussions. Although several strategies to develop expository writing were shared, teachers wanted to discuss the patterns they saw in student work. Most of the conversation centered on revision and how to help students become more serious about changing their subsequent drafts. One teacher asked, "How do I get them to read and revise past the grammatical errors and really look at what they are saying?" Another teacher wanted to help her fourth graders with adding details during the revision process. As the meeting ended, the professor only added a few open-ended questions to consider for the next time. The teachers decided it would be best to give a prompt and then bring samples to discuss. They decided they needed more common ground to further analyze their students' expository writing.

In the second meeting, the fourth grade teachers dominated the conversation. Most of the focus was on the prompt and paragraphs students wrote using graphic organizers. Teachers shared stories of how they presented and tried these new strategies in prewriting, hoping to have students think about idea organization prior to starting their first drafts. They debated the validity and structure of a new writing program they had started to use. One teacher loved the new program because it used writing frames and was prescriptive. Another colleague disagreed and stated "creativity was taken from the writing process because they used the writing frames. Every draft sounded the same because the structure was the same." While the conversation was heated, colleagues spoke respectfully to each other. It was interesting to see the change in both their attitudes about sharing their practice and their willingness to challenge each other's thinking.

Another teacher admitted her lesson on revision flopped. She said, "I know I did not give them enough examples in context. I will have to try a different strategy. I think I will use a writing sample to dissect with my students." Honest teaching struggles were revealed without repercussions about how they were perceived by their colleagues. During this session, these teachers transformed their participation from listening to engaging each other in dialogue about their practice: - questioning and reinventing their notion of teaching writing.

Analysis of the Collaborative Process

Collaboration among colleagues brings together a community of learners around common goals: - to change teaching practice and to increase student learning (Lieberman & Miller, 1999). As university faculty, we strive to help students make

sense of what happens in real classrooms to real students. Being part of a teaching community where the definition of community is open to all teachers from Pre-K to 16 extends the notion of a community of learners. Teacher educators are not just seen as experts but as part of the continuum of teaching that extends beyond the traditional definition of a school community. As educators, we all run the risk of being isolated in our practice. We plan alone, implement the curriculum and teach our students alone. When we open the doors to our colleagues, it is only for evaluative purposes and not necessarily to share. In public schools today, the environment is much the same: teachers work in isolation and collaborate only when mandated by school leaders or the district.

In this model, the principal and university professor wanted to change the perceptions of elementary teachers about professional development and university-school partnerships. In most cases, teachers have contact with university personnel when we ask to place student teachers for observations or student teaching. Much of the relationship is one way. In fact, most university partnerships with district schools are created to facilitate the placement and training of new teachers. We wanted to find a way to increase the reciprocity between schools and universities.

In this model of professional development, the principal, teachers, and teacher educator wanted to create a collaborative model where school faculty had a voice in how they were to proceed with changing their practice of teaching writing. First and foremost, teachers perceived they needed more guidance with prewriting and revision strategies, and how to use rubrics and criteria with their students. They wanted to learn how to help students create ownership of their writing without using prescriptive writing programs. Teachers explored the connection between good literature and how real authors write to help students see how each dovetails with the other. Finally, teachers wanted more time to problem-solve issues of student writing with their colleagues.

During the year, the decision to return and meet by grade levels helped forge relationships with individual teachers, creating a more open environment for dialogue and honesty. As the role of the university professor changed, teachers used student work to focus their conversations about writing. Each group debated and shared teaching strategies around creating lessons for prewriting and revision. One teacher explored how to create criteria and rubrics with his class. “It was amazing how the students knew what to look for in good writing once we created the rubrics together in class. Your idea really worked!” In this model of professional development, the atmosphere was not directed towards an “expert” sharing with novices but a seamless connection between practitioners of all teaching communities.

Implications for Practice in Teacher Education

Part of our work as teacher educators is to connect with all teachers at various stages of their development. By opening doors and creating a different type of relationship with teachers in elementary schools, one teacher educator has found that dialogue and reflection on practice to be universal. During the last year, the journey to change teachers’ perceptions of university professors was explored. We are not just evaluators of student teachers but part of the same teaching community as those in the field. By creating the writing professional development through collaboration, the definition of school community was extended to teacher educators as partners in schools.

In this model, a university professor was part of the larger community of teachers who work with students to increase their success in writing. Many times, preservice teachers ask each other, “When is the last time you think our professors have been in a classroom?” Students want to know their university instructors are current with their practice as well as the research they study. They want to know if the methods they are learning will actually work with real students. If we extend the idea of the teaching community to include all schools including universities, we will shatter the idea of isolation between these two communities of learning and create a pathway that continues to help teachers grow in their teaching practice.

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Interpretive Processes in Collaborative Research

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Introduction

Although models have been presented about factors that influence the effectiveness or sustainability of collaborative research teams, few studies provide in-depth analyses of collaborative research practices (John-Steiner, Weber, & Minnis, 1998). Little is known about how collaborators collectively accomplish the process of analysis and interpretation. Insight in to how collaborators achieve new insight offers a way to evaluate the outcomes of collaborative endeavors.

This paper provides a content analysis of published narratives about the experiences of educational researchers conducting interdisciplinary interpretive research in K-12 partnerships. The paper is organized by four steps in a model of the interpretive process I derived from my own research and integration of the accounts. My purpose in the analysis is to examine, when taken together, what the self-reflexive accounts reveal about the nature of the collaborative process.

A key step in the collaborative process occurs when collaborators appropriate each other's skills and expertise (John-Steiner, 2000). In hierarchical relationships where one member is senior by virtue of expertise, the process of appropriation most often takes the form of a one-way transfer of knowledge. These are more likely to reproduce knowledge than to create it (Lunsford & Ede, 1990). The process of appropriation has greater potential to lead to new insight when it occurs within the context of a co-equal relationship among collaborators who bring distinct areas of expertise.

Methodology

I conducted a content analysis of four self-reflexive accounts of interdisciplinary collaborative qualitative research projects published in mainstream journals addressed to an audience of teacher educators and educational researchers (Clark, et al., 1996; Eisenhart & Borko, 1991; Liggett, Glesne, Johnston, Hasazi, & Schattman, 1994; Wasser & Bresler, 1996). All are accounts of educational researchers working on funded projects in collaboration with K-12 teachers. When taken individually, a collaborative narrative can be dismissed as anecdotal. Comparing them in cross-case analyses is a way to enhance the external validity or generalizability of their findings.

I have done a considerable amount of primary research based on interviews with faculty about their experiences as collaborators. After discovering that a number of published accounts resonated with key themes arising in my own empirical research, I performed a form of confirmatory analysis by applying the coding scheme to the self-reflexive accounts I developed to analyze transcripts from interviews with long-term research collaborators. The candor of the accounts and the willingness of the authors to acknowledge tensions contribute to their credibility. The analysis uses triangulation to demonstrate the trustworthiness of the collaboration model.

A Model of the Collaborative Interpretive Process

Figure 1 provides a model of the key steps in the collaborative interpretive process derived from my own research and illustrated in the four narrative accounts of interdisciplinary collaboration presented in this paper. The squares in the figure are steps in the collaborative process; the ovals are outcomes. The steps in the process

begin with dialogue; move to familiarity, then to collective consciousness, and finally to engaging differences. The outcomes are either accommodation or synthesis. The dotted lines around the boxes show that rather than being linear, the process utilized by collaborators is dynamic and recursive. Each step emerges from the other.

Accommodation and synthesis are the two different outcomes evident in the self-reflexive narratives. Accommodation refers to collaborators who achieve an interpretive end product that includes diverse views without reconciling them. Synthesis, on the other hand, refers to a conceptual framework or outcome that integrates diverse views or reconciles contradictory views.

In the following section, I use one of the published accounts to illustrate each of the four steps. Please contact author(s) for any mentioned tables and/or charts.
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Step 1: Dialogue

Dialogue, interaction, and exchange are features common to all of the collaborative narratives. Face-to-face interaction and exchanges that occur during the process of preparing a manuscript are just two examples of the forms dialogue can take. A high level of interaction is required for collective interpretation to occur. The role of dialogue is given the greatest emphasis in the narrative written by Clark et al. (1996). The goal of the 10-person team of K-12 educators and educational researchers was to implement portfolios as a means of assessing student writing. The chief outcome of the project was that they gained a “level of understanding about the constraints of one another’s practice” (p. 197).

These collaborators challenge the conceptualization of collaboration as being primarily about the sharing of work. They re-conceptualized it as an exchange that leads to mutual understanding. They noted what they consider unusual about their perspective: “we have come to see dialogue as the centerpiece of our exchange. We see this as a fundamentally different take on collaboration -- one that characterizes sharing and mutuality not in terms of doing the same research work but, rather, in terms of understanding the work of one another”(p. 196). A reluctance to disenfranchise the K-12 educators participating in the project led these collaborators to eschew a theoretical framework. The Readers Theatre format Clark et al. elected to use in their published account offered the latitude to meet their goal of mutuality and to honor the distinctions between the voices of the different collaborators. Relative to the model presented in Figure 1, the account these collaborators provide locates them in the early steps of the continuum. While their emphasis is on dialogue, they also probably achieved familiarity because they acquired an understanding of each other’s work. This account demonstrates that collaborators can have a high-level of interaction without ever necessarily confronting or exploring the implications of different perspectives.

Step 2: Familiarity

Familiarity refers to a step in the interpretive process when collaborators gain more than a nodding acquaintance with teammates’ worldview and subject matter expertise. It is akin to what John-Steiner (2000) calls appropriation. A great deal of mutual education and learning occurs as familiarity is acquired, if not necessarily conceptual change. The development of familiarity is most prominent in the account of collaboration provided by Liggett et al (1999). This 4-member team of special educators conducted a policy study of the American with Disabilities Act’s mainstreaming clause implementation in 12 school districts. Even though all were trained as special educators, these collaborators encountered significant differences in philosophical orientation and paradigmatic assumptions that were grounded in different experiential backgrounds in the field. They are candid in their acknowledgement of the sense of competitiveness that arose from differences in perspective.

Competition between disciplinary points of view and a reluctance to allow a single person's perspective to dominate created tension at every stage of the inquiry. Dialogue seemed to amplify differences in viewpoint. During the step of the project that involved coding the interview transcripts, for example, Liggett et al. described that even with months of discussion individual biases meant "we still saw different ways of interpreting the data in light of the goals of the research"(p. 82).

One manifestation of familiarity is when a collaborator accurately anticipates another's point of view. This is particularly evident in the portion of the Liggett et al. account where they grappled with trying to establish a satisfactory level of inter-rater reliability in the coding of transcripts. The goal motivated them to think like a team, if only temporarily. They explained: "The specificity of reading text line by line forced us to think more as a team. Thus, the lesson learned was that the specificity of a task, when accomplished by a standard or goal, served to expand and broaden individual perspectives. The goal was not to reduce perspectives to some common norm, but to achieve a greater perspective -- and thereby comparability" (p. 83). The reference to achieving a greater perspective suggests that at least at this juncture, the team inched toward the step of the interpretive continuum I have called collective consciousness.

When it came time to write the final report, the team once again found it difficult to reach agreement. Liggett et al. described this stage of the interpretive process with their typical candor: "Neither using persuasion to reach consensus or negotiating among views proved to be a satisfactory means of resolving the issue. No one was convinced of the "best" framework. Further, it was impossible to include all views as that would result in a lengthy, cumbersome document that lacked coherence" (p. 83-84). This group accommodated differences in perspective, but did not reach agreement about a conceptual framework. The account follows the steps of the continuum presented in Figure 1 leading to accommodation. It demonstrates that even with protracted dialogue, collaborators can acquire familiarity and produce an end product that accommodates different viewpoints without fundamentally changing conceptual orientations by integrating new perspectives.

Step 3: Collective Consciousness

Collective consciousness refers to a step in the interpretive process when collaborators internalize the concerns or issues considered to be of central importance by other members of the team. This produces an expanded or more nuanced and complex vision of the phenomenon under study. I believe this is the point in the interpretive process when collaborators undergo conceptual change.

Wasser's and Bresler's account (1996) captures this step of the interpretive process more vividly than any of the other accounts. Working with a 5-member team of educators trained in different fields of the arts, they sought to develop case studies of the way arts education was implemented in several different school systems. These authors describe the impact of grappling with different world views in particularly vivid terms: "Trained in different disciplinary, although often overlapping fields, we came to the group speaking in different discourses. As a result, we judged different issues to be critical, 'saw' in different ways, and passionately believed in the righteousness of our causes and the lens by which we viewed the world" (p. 9-10). These words illustrate how even collaborators in closely allied fields can bring the lens of a different worldview to a collaborative task. Wasser's and Bresler's account brings to life the step in the interpretive process where collaborators move from familiarity to developing a collective consciousness. This is when conceptual change, rather than accommodation, occurs. This is reflected in the observation: "Our roles and positions changed as we absorbed the concerns and issues of others, allowing ourselves to view site data through their concerns and developing our own position in new ways" (p. 10). Their scope of vision expanded in the process of internalizing the worldview and expertise of other team members.

A number of strategies seemed to account for the ability of these collaborators to move from familiarity to a collective consciousness. They restricted the amount of time devoted to discussion about procedural matters. In addition, they adopted a stance that attached a positive value to heterogeneity and for the potential of different disciplinary perspectives to enrich the interpretive process. The group developed a discursive practice where they framed tensions not as problematic, but as play. An additional strategy that proved influential to the outcome of this collaboration was that a team member assumed the role of the team's "memoist." She encouraged team members to revisit unresolved issues and to pursue the implications of the different perspectives across meetings. The interpretive process became recursive, rather than linear. This was instrumental to moving the discussion past the point of familiarity to achieve a collective consciousness and, eventually, to achieve the synthetic vision that is the final step in the interpretive continuum represented in the model.

Step 4: Engaging Differences in Perspectives

The fourth step describes a point in the interpretive process when collaborators explore the implications of the differences in their perspectives. Not all collaborators achieve this step. Collaborators can learn each other's point of view (familiarity) without incorporating new elements in their own way of seeing and thinking to develop a more complex understanding (collective consciousness) or mining differences to unearth new insight that may ultimately lead to the creation of new knowledge (synthesis).

Eisenhart's and Borko's account (1991) describes the on-going collaboration of an anthropologist and psychologist. Their account focuses on a project where they sought to understand the process of learning to teach mathematics. Of the collaborative narratives analyzed here, this pair offers the most insightful discussion of ways collaborators engage competing conceptual frameworks. Although they only tentatively achieved a strategy for synthesis, Eisenhart's and Borko's account illustrates the full spectrum of activities depicted by the collaborative model.

The collaborators in this account reported that they began the project with sharply different worldviews grounded in different disciplinary perspectives. They saw the potential of the inquiry to "know in more than one way" but also feared they might be forced to compromise the principles of their disciplines. To address their differences, Eisenhart and Borko chose to take the time to educate each other by laying out the central assumptions and issues within each of their disciplines. During this process, they acquired the ability to articulate the other's point of view, a step I interpret to demonstrate familiarity. Eisenhart and Borko achieved the next step of the interpretive process presented in the model, the construction of a collective vision, when they developed a conceptual model. After designing a distinct set of research questions and collecting data separately, they integrated their different concerns in a conceptual framework. The conceptual framework, though not central to either's research agenda, was not antithetical to them either.

The next step was the one critical to moving Eisenhart's and Borko's collaboration from accommodating different perspectives to achieving some degree of synthesis. They made the decision to use critical incidents, specific observations of apprentice teachers, as way to integrate their viewpoints. Of this critical decision, they noted: "We reasoned that by asking ourselves to provide an explanation for an incident (and over time accumulating such explanations), we would force ourselves to deal squarely with the intersections and discrepancies between our approaches" (p. 150). This was the point in the process when they gained confidence that their disciplinary commitments would not be compromised.

Conclusions

Tension and conflict are central to understanding the interpretive process used by collaborators. Confronting differences in worldview and perspective is a central element of each of the four self-reflexive collaborative narratives analyzed in this

paper. This is a point where the dynamics of the collaborative process are clearly linked to project outcomes. The potential for prolonged interaction about competing explanations is something that distinguishes the process collaborators use to create knowledge from that used by individuals.

These collaborative accounts can be distinguished by the strategies the participants employed to address differences. The narrative provided by Clark et al. suggests this team respected differences in viewpoint and used them to reach an understanding of each other's practices without using them as a springboard to further insight. Liggett et al. acknowledged that disciplinary differences emerging at each stage of the research were not ameliorated by dialogue. Consensus, compromise, deferring to a standard such as consideration of the audience, and "muddling through" were strategies this team used to keep the project moving forward. Eisenhart and Borko devoted considerable energy to educating each other about their fundamental disciplinary assumptions and used these differences at a critical juncture in the analysis to interrogate the phenomenon they studied from multiple angles. Wasser and Bresler visited and revisited the implications of different disciplinary perspectives at each stage of the research, using them to develop a collective consciousness that expanded the depth of insight offered in the final product.

The power of disciplinary socialization is evident in all of the collaborative narratives. Most of the collaborators seemed tenacious in their home discipline commitment. This produced competition, anxiety about the loss of credibility, and resistance to dominance of a single disciplinary perspective. It is possible this very tenacity to a disciplinary worldview inhibited the ability of most of the collaborators to achieve a synthetic conceptual framework.

Collaboration is studied in many contexts. John-Steiner, Weber, and Minnis (1998) speak to the need for a theoretical account of collaboration that spans multiple settings. This offers an incentive to collaborators not only to develop self-reflexive strategies about the experience of collaborating, but also to share these reflections in published accounts. Such accounts are a particularly valuable source of insight when they focus on the interpretive process and document specific incidents that demonstrate how collaborators address differences in perspective linked to creative insight.

Note

Please contact author(s) for any mentioned tables and/or charts. creamere@vt.edu

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Successful Preparation of Teachers of Students with Disabilities

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Background

The Reauthorization of the Individuals with Disabilities Education Act (IDEA) in 1997 is evidence of the increasing emphasis Federal and State policy makers are placing on higher learning standards and school accountability. IDEA requires evidence of more precise goal setting, rational program choices to attain those goals, and documentation of results. These requirements include a focus on children with disabilities in the general education curriculum.

Two different agencies, the Office of Special Education and Rehabilitation Services and State Departments of Education, have the responsibility of monitoring activities relative to compliance with Federal and State regulations and the provision of a free appropriate public education (FAPE) to children with disabilities. The California State Department of Education has designed a new monitoring system which focuses on improved student results and the effectiveness of the quality assurance process through an effective program plan.

California policy makers have increased the priority of student learning accountability for all children in the state, including children with disabilities. In January 1999, the California State Legislature began a special session to adopt school reform and accountability regulations. These educational reforms include the establishment of content and performance standards of learning, a statewide assessment program, regulations regarding grade level promotion and retention, and identification and support for underperforming schools. These much-needed reforms are for students in general education programs as well as for children with disabilities.

The legislation underscores the need for collaborative training for general and special educators. Historically, the credential training programs for general educators have emphasized general education curriculum and methodologies. The credential training programs for educational specialists (special education teachers) have emphasized instructional strategies and remediation techniques. It is not apparent that both groups, general and special education teachers, require the knowledge and skills of each if all students are to be successful in achieving the performance and curriculum standards adopted by the state of California.

Critical Shortage of Teachers

Throughout the United States, the accountability movement requires the most competent teachers for all children. Currently, there exists a shortage of all teachers (i.e., multiple subject, single subject, special education) with the most critical shortage in special education. The special education teacher shortage in California is at least consistent with, if not more serious than the figures reported at the national level. Each

year there are significant increases in the number of emergency credentials and various waivers in order to staff special education classrooms. For example, the number of emergency permits for teachers of special education in California rose from 3,522 in the 1995-1996 schoolyear to 6,158 in the 1999-2000 schoolyear.

The number of teachers in special education without credentials in California has steadily risen to 9,408 in 1998-99. This total represents an increase of over 100% since 1993 (Department of Education, 1999; California Commission on Teacher Credentialing (CCTC), 1999). In addition, emergency permits for special education teachers experienced an increase of 8.9% from 1998-1999 to 1999-2000 (CCTC, 2001). Overall, there has been a dramatic increase in emergency permits for special education teachers in the state of California over a five-year span.

Several factors contribute to this severe shortage of special education teachers. Data indicate that while there is a statewide increase in the number of enrollees in special education credential programs, there is an annual decline in the number of candidates recommended for the special education specialist credentials (CCTC, 2001). Districts are finding that teachers without credentials are leaving the field before completing their credentials. During 1995-96, only 1,871 special education credentials were issued through university programs which clearly did not fill the 9,408 positions not staffed by qualified teachers (CCTC, 1997). Furthermore, many individuals who complete the credential each year are not new teachers being added to the pool. They are individuals who have been employed on emergency permits while completing a credential.

In addition, California's initiative to reduce the class size for kindergarten through third grade has had a "domino" effect on teacher recruitment for special education. Many teachers who may have pursued the additional course work for the special education credential are taking positions in these general education settings. Other special education teachers currently working on specialist credentials have left their positions to teach a K-3 classroom.

New Standards for Educational Specialist Credentials

In response to the critical shortage, CCTC established new standards for the Mild/Moderate and Moderate/Severe Educational Specialist Credentials in 1998. These new credentials are significantly different from the previous credentials, Learning Handicapped and Severely Handicapped. They do not require a separate general education credential, but instead require the candidates for special education credentials to demonstrate competency in teaching standards for all students. Cal Poly Pomona was one of the first Institutions of Higher Education (IHEs) receiving initial approval for these new credentials. At that time, Cal Poly Pomona initiated a pilot of an integrated credential program which required core coursework for credentials in elementary education, secondary education, special education (Mild/Moderate and Moderate/Severe) encompassing key curricula areas including English language development, language acquisition, cultural sensitivity, fieldwork within a variety of diverse settings, and technology skills across the curriculum.

There is increased frustration with the enormity of the task of providing highly qualified, effective teachers in an extended community with an increasingly diverse student population. Teachers also need assistance with accountability reform

movement expectations. Collaborative training must be provided for general and special educators during their pre-service and in-service training.

Today's movement to inclusionary classrooms, as well as the diversity in California, has increased the pressure on general education teachers to be accountable for providing successful experiences for children who demonstrate a wide range of learning abilities. However, several studies have reported that teachers state their lack of specific knowledge, skills, and continuing support to ensure the effectiveness of inclusion. Many teachers are not receiving training and are not confident in their knowledge and skills for planning adaptations for students with disabilities (Schumm & Vaughn, 1992a; Jensen, Mortorff, & Meyers, 1992; Billingsley & Tomchin, 1992).

Significantly, over 90% of students with disabilities placed in general education classrooms have high incidence disabilities (i.e., speech or language, learning disabilities, serious emotional disturbance, mild cognitive disabilities) (U.S. Bureau of the Census, 1993; Kauffman, 2002). McIntosh, Vaughn, Schumm, Haager, and Lee (1993) and Anderson-Inman (1986) found that students with learning disabilities interacted with teachers and students at a much lower rate than students without disabilities in the same classroom. Students with learning disabilities also engaged in classroom activities less often than other students in general education. Therefore, general education teachers must be trained to deal with these vital engagement issues affecting students with disabilities in their classrooms (Dettmer, Dyck, & Thurston, 1999).

Collaboration

The issue of productive collaboration between special and general educators is a major focus in today's movement to more inclusive classrooms. Research (Friend, 1985; Johnson & Johnson, 1986; Mastropieri & Scruggs, 1994, 1997, 2000) demonstrates a direct link between positive collegial relationships, school climate, and the quality of academic and social growth of students. At the same time, obvious differences in philosophical and instructional beliefs, goals, and instructional methods between general and special educators have been observed and documented by school personnel and researchers and must be addressed. Several publications (Dettmer, Dyck, & Thurston, 1999; Friend, 1985; Idol-Maestas, Paolucci, Whitcomb, & Nevin, 1986) offer suggestions for collaborative supports for teachers and training in a wide range of instructional strategies that may have a positive impact on the learning and success of students with high incidence disabilities in inclusive settings.

General and special educators need to collaborate and share responsibility for educating students with disabilities in the general education setting. To do this adequately, they require specific and simultaneous training in team teaching, problem-solving, decision-making, cooperative learning, and collaborative teaming. They need clinical experiences in which they work together to incorporate such practices as increased student-teacher interaction, high academic engaged time, relevant curriculum, and maximized opportunities for student success (Mastropieri & Scruggs, 1997). Most essential is extensive, directed, on-going and simultaneous collaborative training of pre- and in-service general and special educators. Teachers-in-training must be provided with educational experiences that are extremely specific, demonstration lessons in their classroom settings, and release time for ongoing meetings with other teachers to discuss adaptations and alternative practices for their students (Billingsley & Tomchin, 1992; Friend, 1985; Sprinthall & Theis-Sprinthall, 1983).

Critical issues that must be addressed by IHEs include methods to: a) improve the performance of students with disabilities in general education curriculum through collaborative training of general and special educators during the pre-service and in-

service periods; b) meet the critical crisis in personnel shortage in partner Local Education Agencies (LEA) by increasing their capacity to access state resources for career ladder alternative credential programs; and c) recruit quality personnel to better serve the needs of this population.

Teacher education institutions must focus on improvement in the recruitment, retention, preparation, induction and retention of personnel who have the responsibility for ensuring children with disabilities achieve high standards and become independent, productive citizens. Universities that train teachers should create credential programs which address the following objectives:

1. Develop an innovative standards-based model for collaborative training of general and special education personnel including paraprofessionals during the credential training programs.
2. Provide site-based in-service training on general and special education collaboration.
3. Assist partner LEAs in accessing resources for career ladder alternative certification programs for teachers.
4. Disseminate information on materials, processes or techniques developed to other colleges, universities, and LEAs.

As a result of the critical shortage of teachers in the State of California, and in particular, the shortage of Special Education Specialists, the CCTC has established many alternative programs to obtain credentials. Some of these alternative programs are available to LEAs as well as universities. Although the LEAs in Cal Poly Pomona's service area have a critical shortage of credentialed teachers in both general and special education, many of these LEAs do not have the knowledge, skills or time to develop proposals to support career ladder credential candidates.

Templates should be developed by IHEs for completing applications for California state funding, which will allow partner LEAs greater access to career ladder alternative credential programs. These LEA alternative programs, many of them training programs for paraprofessionals, must articulate with teacher training institutions' entrance requirements to both the University and Education Departments. The training program will then be a true collaboration between general and special programs.

The Win-Win Approach – One Local Solution

In September 1999, Cal Poly Pomona was awarded a federal grant from the United States Department of Education, The Win-Win Approach which continues until 2004. The purpose of this grant is:

- o To recruit and financially support up to 40 participants annually.
- o To provide preparation in English language development and language acquisition.
- o To provide competencies in integrating technology skills into classroom curricula.
- o To provide participants with effective strategies to accommodate diverse students with disabilities in inclusive settings.
- o To provide maximum support and assistance for beginning special educators.

By the year 2004, 100 Mild/Moderate and Moderate/Severe Education Specialists who are representatives of ethnic minorities or who are individuals with disabilities will have been supported by The Win-Win Approach grant. Although this is a major improvement, it represents a small solution to the ever-increasing need for special education teachers in the Cal Poly Pomona area and the state of California.

Conclusion

There is a national shortage of teachers, especially teachers of students with disabilities. Concurrently, there is a national commitment to accountability reform. By redesigning credential programs to include collaboration of general and special educators, streamlining admission procedures, coordinating existing resources, and increasing the ability of LEAs to participate in career ladder programs, universities can meet the needs of providing highly qualified effective teachers for students with disabilities. Specifically, the collaborative training programs should focus on a wide range of instructional strategies/interventions of “best practices” (Schumm & Vaughn, 1995). These instructional strategies/interventions should include: cooperative learning, curriculum based assessment, peer tutoring, direct instruction, teaching of metacognitive strategies, behavior modification and cognitive behavior management, and self management and goal setting. Overall, IHEs must not only design collaborative training programs for pre-service and in-service general and special educators, but also maximize existing resources to meet the critical shortage of teachers which will directly improve the quality of instruction for children with disabilities.

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Improving Classroom Assessment Practices: A Collaborative Approach

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Teachers are being asked to select or create classroom assessment tasks and scoring rubrics that are consistent with district, state and national standards. Researchers have argued that in order for teachers to meet these requests, they will need additional training in the assessment process (Brookhart, 1999; Stiggins, 1999). Stiggins (1999) has further argued that the focus of traditional teacher training is inadequate in that it emphasizes the interpretation of standardized tests rather than classroom assessment efforts. The purpose of this article is to discuss the assessment component of the Competency and Confidence Project (C²). C², which was partially supported by Colorado Eisenhower funds, was a collaborative effort between the Colorado School of Mines (CSM) and Jefferson County School District (JCS). Both CSM and JCS are located near Denver, Colorado. CSM offered expertise in mathematics content and instructional pedagogy; JCS provided expert mathematics teachers. These individuals worked together to create the C² workshops. A portion of this project focused directly upon assisting teachers in developing assessment tasks and scoring instruments that were consistent with the district's algebra standard, "Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate with appropriate mathematical language and reasoning used in solving these problems" (Jefferson County Public Schools, 1996, p. 10).

Participating Teachers

In response to a printed solicitation, twenty-eight fourth through sixth grade mathematics teachers enrolled in C² in the fall of 1998. All of the teachers were from JCS. The experience level of the teachers ranged from 1-28 years, with a median of 11 years.

Objectives of the Assessment Component of Project

C² consisted of a series of workshops that were designed to improve teachers' content and pedagogical knowledge with respect to the mathematics that they taught. A major emphasis of the pedagogical workshops was classroom assessment. Four eight-hour, pedagogical workshops were offered throughout the semester. The primary objectives of the assessment component of these workshops are listed below.

Pedagogical Workshop 1:

1. The teachers will be able to create assessment tasks that are clearly aligned with the algebra standard.

Pedagogical Workshop 2:

2. The teachers will learn to create rubrics in which the scoring criteria are consistent with the information that the assessment task is likely to elicit from students.
3. The teachers will develop rubrics in which the performance levels are clearly distinguishable.

4. The teachers will provide to their students feedback that can be used to improve future performances.

Pedagogical Workshop 3:

5. The teachers will learn the meaning of the terms "validity" and "reliability" and these concepts will be used to reinforce the information discussed in previous workshops.

Pedagogical Workshop 4:

6. The teachers will be aware of the standardized tests that will be administered throughout the academic year.

Submitted Materials

During each of the four workshops, three hours was set aside for teamwork. These teams developed a lesson plan, an assessment activity and a rubric that was aligned with the algebra standard. Each teacher fine tuned the resultant materials and implemented these materials in the classroom. Copies of the teacher's final assessment task, scoring rubric and a sample set of scored student responses were submitted to the project evaluator. Each teacher submitted four separate sets of classroom assessment materials. The sequence of activities was as follows: 1) workshop (team activity), 2) classroom implementation, and 3) submission of assessment materials. This was repeated four times throughout the semester.

Scoring Rubrics

The submitted materials were evaluated using the Classroom Assessment Materials Scoring Rubric (CAMS rubric). The CAMS rubric is an analytic rubric with four facets: "Standard", "Criteria", "Language Specificity" and "Feedback to Students". Ms. Jill Fellman who has extensive experience and training in the classroom assessment process and is an experienced classroom teacher developed the original version of the rubric. Dr. Moskal, an assessment specialist, reviewed and assisted in the revision of the final rubric. A description of the different facets is provided below.

Standard

Level 4: The proposed task elicits evidence of students' knowledge of the algebra standard.

Level 3: The proposed task elicits evidence of mathematical knowledge and skills that directly support the attainment of the algebra standard, but does not directly address the algebra standard.

Level 2: The mathematics assessed in the task is at a basic skill level.

Level 1: The task does not have a clear mathematical foundation or the mathematics is incorrect.

Criteria

Level 4: The established criteria reflect the mathematical content assessed in the task and clearly indicates how student work will indicate essential characteristics.

Level 3: The criteria reflect the mathematical content assessed in the task, but in some cases does not clearly indicate how students work will display these characteristics.

Level 2: Some of the criteria clearly reflect the mathematical content assessed in the task, but also non-content related displays are required.

Level 1: The criteria do not reflect the mathematical content assessed in the task.

Language Specificity

Level 4: The language that is used is specific and clearly discriminates between score levels.

Level 3: Subjective language is used to discriminate between some of the score categories.

Level 2: Subjective language is used throughout to discriminate between the score categories.

Level 1: Vague language is used to describe the score categories.

Feedback to Students

Level 4: Feedback provided to students is aligned with the rubric. Students have a clear indication as to how to improve their performances.

Level 3: Feedback provided to the students is aligned with the rubric. Students have some indication as to how to improve.

Level 2: Feedback provided to the students is consistent with the rubric.

Level 1: No feedback is provided to the students.

The "Standard" category examines the extent to which the proposed assessment task is likely to elicit evidence of students' knowledge that was directly related to the algebra standard (workshop objective 1). The "Criteria" category examines the extent to which the requirements that were set forth in the task are aligned with the requirements that were set forth in the scoring rubric (workshop objective 2). The "Language Specificity" category examines the extent to which the language that is used in the teachers' submitted rubrics clearly distinguishes each of the score categories (workshop objective 3). The "Feedback to Students" category examines the extent of feedback that the teacher provided on the student papers (workshop objective 4). Two objectives are not directly addressed through the CAMS rubric, workshop objectives 5 and 6. Objective 5 concerns introducing the terms "validity" and "reliability" with the purpose of reinforcing earlier objectives. Therefore, objective 5 is indirectly assessed through the other score categories. Objective 6 concerns standardized testing and is not the focus of this paper. The "Total Score" for each submission was calculated by summing across the teachers' scores with respect to the given categories. This resulted in each teacher receiving four "Total Scores", one for each submitted set of assessment materials. The "Total Score" was designed to capture changes in the teachers' overall classroom assessment performance from the first to the fourth submission. The use of total scores is consistent with prior recommendations concerning scoring rubrics (Mertler, 2001).

Results

Reliability

Two raters scored five common sets of submitted materials. They then compared their scores and through discussion, clarified the categories. Next, the two raters independently scored 20% of the submitted assessment materials. For all facets, agreement was at an acceptable level of 70% or above.

Teachers' Performances

Since the participating teachers worked in teams throughout the semester, the assumption of independence required for most statistical tests could not be met. One common approach for dealing with this problem is to use the team rather than the individual as the unit of measure. However, several of the teachers changed teams during the semester, resulting in ill defined team units. Therefore, the unit of measure used here is the individual and the analysis is restricted to descriptive statistics. The average score for "Standard" across teachers for each of the four submissions was 3.71, 4.00, 3.79 and 3.96. The initial high rating with respect to this category is not surprising given that the assessment portion of the workshops had already addressed the importance of aligning tasks with the algebra standard prior to the first submission. Additionally, many of the participating teachers had a great deal of teaching experience and this provided them with prior experiences in the selection and development of assessment tasks. Since the majority (23 out of 28) of the teachers had reached the categories' ceiling on their first submission, the initial high performance of the teachers with respect to this category at the start of the project may have prevented the identification of further growth. By the final submission, 27 out of the 28 teachers submitted a task that was rated as a "4".

With respect to the "Criteria" category, the average scores for each submission was 3.39, 3.79, 3.75 and 3.79. This category examined the extent to which the requirements of the submitted rubric were aligned with the requirements that were set forth in the task. In this category, there was an increase in the average score from the first submission to the second submission. As was discussed earlier, the focus of the second workshop was upon creating scoring rubrics that were consistent with the nature of the task. The increase that followed the second workshop suggests the effectiveness of these efforts. After the second submission, the average score with respect to this category remained relatively stable on the remaining submissions, suggesting the sustainability of the teachers' efforts.

The average score for the "Language Specificity" category for each of the four submissions was 3.50, 3.68, 3.75 and 3.79. This suggests a gradual improvement with respect to "Language Specificity" across time. The primary emphasis on this category was in the second and third

workshop, which took place prior to the third submission. The continued increase within this category on the fourth submission suggests that the teachers were able to continue to improve with respect to this category without additional instruction.

The final category was "Feedback to Students". The average scores with respect to this category across the four submissions were 2.11, 2.46, 2.61 and 2.57. As these numbers suggest, there was an increase from the first to the third submission. After the third submission, there was a decrease. The primary emphasis on this category occurred in the second and third workshops. This is consistent with the observation that the teachers' average score peaks on the third submission. There was a slight decrease with respect to this category on the fourth submission. This raises to question whether changes in performance within this category are sustainable without further workshop intervention. A more extended study would be needed to test the accuracy of this claim. The final value did not drop below the average score on the first submission.

The average score for the "Total Score" across submissions was 12.71, 13.93, 13.89 and 13.93. Based on the average scores, the first and second workshop appeared to have the strongest influence on the teachers' assessment knowledge. The reader may question the practical significance of a "Total Score" that increased from an initial value of 12.71 to a final value of 13.93. However, if these scores are scaled to be out of a hundred, this results in a difference between receiving a "Total Score" of a 79 and an 87.

Discussion

The purpose of this article is to present the methods and results of the assessment portion of the C² project. This project represents a collaborative effort between a local school district and university to improve the instruction that students receive in mathematics. As part of this project, the CAMS rubric was developed and used to evaluate the teachers' submitted assessment materials. This rubric was specifically designed to assess the following components of the teachers' materials:

1. The consistency of the assessment task to the algebra standard ("Standard");
2. The consistency of the rubrics scoring criteria to the task requirements ("Criteria");
3. The extent to which the teacher proposed scoring rubric clearly distinguishes score categories ("Language Specificity"); and,
4. The amount of feedback that the teachers provided to students ("Feedback to Students").

As was illustrated in this paper, the use of the CAMS rubric did provide reliable results. This was accomplished through the careful training of the raters. Additionally, the observation that the average score for the teachers in the categories of "Criteria", "Language Specificity" and "Feedback to Students" increased immediately after the pedagogical workshops that addressed the related objective suggests that the rubric was successful in capturing the anticipated changes.

Very little change was witnessed across submissions with respect to the "Standard" category. The majority of participating teachers had reached the ceiling with respect to this category on their first submission. Since in-service teachers already have classroom experience in the creation of tasks that are consistent with their goals, they may not need additional assistance with respect to this category. Additionally, the participating teachers were working in teams and through these teams, the inexperienced teachers had immediate access to their more experienced peers. The experienced teachers may have ensured that the developed tasks were aligned with the stated goals. Another influencing factor is that the discussion that concerned aligning tasks to the algebra standard occurred during the first workshop, which was prior to the first submission. This too probably influenced the high scores that were witnessed with respect to "Standard" on the first submission. If the CAMS rubric had been used to evaluate the assessment materials of pre-service teachers, the initial score with respect to "Standard" would probably have been much lower.

A disappointing component of this study is that the participating teachers continued to provide their students with limited feedback at the conclusion of the study. Although their average performance had increased, it still fell between level "2" and "3". Since feedback provides students with the opportunity to improve, providing appropriate feedback is essential to the learning process. Another concern is that the teachers' average performances with respect to feedback decreased from the third to the fourth submission. This may suggest that in order for teachers to improve with respect to this category, they need on-going instruction concerning the importance of providing students with detailed feedback. It is also possible that the participating teachers did have had the knowledge that was necessary to provide appropriate feedback to their students, but lacked the time that was necessary to use this knowledge. Future studies are needed that explore methods for encouraging teachers to provide detailed feedback to their students.

The proposed CAMS rubric is likely to be useful well beyond the confines of this study. Researchers have argued that both in-service and pre-service teachers require additional training with respect to classroom assessment (Brookhart, 1999; Stiggins, 1999; Whittington, 1999). This training is likely to include an emphasis on the importance of assessment tasks being aligned with a set of standards and the use of scoring rubrics for classroom assessment purposes. The CAMS rubric provides an instrument for evaluating teachers' assessment materials with respect to these areas. Although this rubric was designed to be aligned with the Jefferson County Algebra Standard, it can be easily adapted to any given standard within a given content area. The minor changes that would need to be made are as follows: 1) altering the references to the algebra standard to a reference of the standard of interest, and 2) altering the references to mathematics to referencing the subject of interest.

This study also provides an example of the types of programs that can be developed for in-service teachers when school districts work with universities. The Jefferson County School District had an expressed desire to improve their mathematics teachers' assessment capabilities. The Colorado School of Mines had the appropriate experts in both mathematics and assessment to assist Jefferson County in their efforts. For more information concerning the larger goals and structure of C², see Moskal and Bath (2001a; 2001b).

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Chapter Three: Online Learning and Technology

It may seem odd to have a combination of “Assessment and Consultation” along with “Online Learning” within the same volume. But on reflection, the reader will see the correlation between the topics. Online discussion has grown increasingly important, especially as it relates to assessment and consultation among students and scholars. Learning has taken place—and the venue has been largely online.

This volume will address both subjects with insight. We have contributions by teaching colleagues which address assessment and consultation along with online instruction. My co-editors, Melinda Pierson and Kristin Stang, will provide a summary of the “Assessment and Consultation” articles; I will do the same for the “Online Learning” submissions.

As Pierson and Stang describe their topic, “Educators are no longer able to work in isolation from one another. K-12 schools and universities are embracing the need for collaborative efforts among and between faculty. Interdisciplinary collaboration, in which faculty from various disciplines work with one another to promote connections between otherwise separate curricula, is one of the ways in which educators are making these efforts. Another example of collaboration is that between faculty at the K-12 level and university faculty. In other instances, the need for consultation emerges; consultation has traditionally inferred a triadic relationship between the person with expertise as the consultant, a consultee, and a client, but the emergence of collaborative consultation provides a sense of parity between consultant and consultee.”

The online venue provides for much of this collaboration. Amany Salah’s article titled “Cooperative Learning in the Online Classroom” discusses students working amongst themselves in cooperation, and Jennifer McLean suggests ways to promote collaboration among faculty in her article “Promoting Faculty Commitment to Distance Learning.” Laura Bolin Carroll’s article “Virtual Citizens: Online Service Learning” discusses the importance of service-learning and writing. Rochelle Matthews-Somerville shows us the differing perspectives of students in online instruction in her article “Distance Learning: College Students’ Perspectives.”

In addition to the articles referred to above, there are several others focusing on learning and collaboration via distributed education. This volume will provide a number of excellent resources for scholars of assessment, consultation, and online learning.

This volume was produced by the hard work of my co-editors, Kristin Stang and Melinda Pierson, along with the contributions of their colleagues. The publisher, Rapid Intellect, has done a superb job of publication, creating a volume which we can all be proud of. Finally, I wish to thank my online colleagues who are forging ahead in this new venue of instruction. I learned much from them; I hope you do too.

On-Line Courses: Recommendations for Teachers

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Introduction

The rapid development of Internet technology has made a significant impact on how instruction is delivered in higher education (HE). Most colleges and universities are eager to offer some form of Web-based instruction in order to utilize the advantages of this technology. Accordingly, faculty members are expected to create teaching materials in an on-line format and demonstrate satisfactory teaching skills in that learning environment. Thus, it is essential for on-line instructors to develop appropriate Internet skills in order to understand the relationships between users, technologies, practices, and tools (Koehler & Mishra, 2005).

When online instruction does not produce acceptable results, researchers have found that inadequate training of the instructors is one of the main factors contributing to that failure. (Fly, 1998; Galusha; 1998). Kerr's research (2005) also indicated that the confidence and preparedness of teachers and the motivation of students are the most influential elements affecting on-line learning outcomes. Instructors, therefore, need to engage with this new format of teaching to a greater extent in order to enable students to become comfortable and effective in the on-line learning environment. Lee and Busch (2005) suggested that training workshops are strongly needed to help instructors develop the skills of the online environment, to employ the technologies, design courses and teaching strategies, and to more fully comprehend the merits of on-line instruction.

In essence, learning involves two types of interactions – interaction with learning content and interaction with other people (Berge, 1995). On-line instructors, especially, need to pay attention to these features, that is, designing content with appropriate interactivity and promoting communication and collaboration among learners. Miller (2001) asserted that students have not embraced this new medium of instruction to the extent that it was originally hoped because instructors have not been fully aware of the importance of these two issues when designing on-line courses. This has affected success with the method and the drop-out rate is higher than that of traditional classrooms (Kim, 2004). Although related studies have pointed out that on-line learners' self-regulated learning skills play an important role in determining the effectiveness of on-line instruction, the most vital element is the instructors' involvement in conducting interactions (McMahon & Oliver, 2001; Kim, 2004; Ellis & Calvo, 2006). Kim (2004) stated that lack of motivation was the key reason for student drop-out in on-line courses. He described that three types of motivation (i.e., motivation to start, motivation to persist, and motivation to continue) maintain the learners' self-regulated learning pace throughout the process. Instructors, therefore, need to provide an environment rich in various opportunities for human-to-computer and human-to-human interaction. An understanding of how learners perceive on-line courses and how different instructor-related factors influence their motivations and perceptions would provide valuable input to instructors. This paper, in particular, reports the findings of students' perceptions toward on-line instructors' teaching skills.

Technology expenditure and teacher training

According to a statistical analysis conducted by Market Data Retrieval (MDR), U.S. universities and colleges are expected to spend 6.94 billion dollars on technology during 2006. Approximately 96% of the funds will be spent on hardware and software. Training in the use of technology accounts for a mere 4% (MDR, 2006). This data may

explain why on-line instruction currently does not make a significant difference in learners' academic performances. Undoubtedly, technology does offer more opportunities and resources to learners. It makes learning anywhere and anytime possible. However, a successful on-line course primarily relies on the originator – the instructor. Thus, training teachers to utilize online technology skillfully would demonstrate positive effects. There are plenty of new technologies and software developed for educational use. How to choose the right one, on the other hand, is a concern for teachers. No matter what technology the instructors are using, the content and instructional pedagogy should be the major concern. Westin and Barker (2001) stated that “all instructional materials contain philosophical assumptions about how students learn, and these assumptions are implemented in an instructional design” (p. 15). This statement also applies to on-line instruction.

Interaction in on-line instruction

Interaction is the essence of effective learning. Wagner (1994) wrote that “Interaction is an interplay and exchange in which individuals and groups influence each other” (p. 20). In the traditional classroom setting, the two major forms of human interaction are student-to-student and student-to-instructor. On-line distance education also has the capability of supporting these two types of interaction, especially courses designed with course management software (CMS). In fact, the structure of CMS tends to mimic “a traditional face-to-face course structure that is familiar to faculty” (Harvey & Lee, 2001, p. 38). Berge (1995) described that the on-line instructor's primary role is to model effective teaching through encouraging discussion and maintaining group harmony. He further encouraged instructors that:

Creating a friendly, social environment in which learning is promoted is essential for successful [on-line] modeling. This suggests promoting human relationships, developing group cohesiveness, maintaining the group as a unit, and in other ways helping members to work together in a mutual cause... (p.23).

Means of interaction can be classified as verbal and non-verbal communication. Related studies showed that students' learning satisfaction highly correlated to instructor immediacy in both verbal and non-verbal interactions (Lai, 2004; Lee & Busch, 2005; Rovai & Barnum, 2003). The major drawback of on-line learning is the non-verbal communication found in the traditional classroom (Lee & Busch, 2005; Rovai & Barnum, 2003). However, instructors can still compensate for this by employing various instructional strategies such as encouraging small group discussions, debates, polling activities, learning partnership exchanges, and sharing some of the messages from students that are particularly relevant (Berge, 1995).

The benefits of on-line learning not only remove the physical and time constraints for instructors as well as learners, they also create a perfect opportunity for us to rethink the core principles of teaching and learning in order to build a new pedagogical model for wider teaching experiences (Boettcher & Conrad, 1999). Lockyer, Patterson, and Happer (1999) also noted that, “The increasing utilization of the World Wide Web (WWW) within higher education allows lecturers to re-examine traditional pedagogical strategies and explore ways of taking advantage of the Web potential to provide enhanced learning experiences” (p. 233). The primary concern, when designing on-line instruction courses, is to keep in mind the learners' potential experience. Effectively identifying how to meet the learners' needs is the key element of successful on-line instruction.

Method

This study was conducted with 15 graduate students enrolled in 5 on-line graduate courses using CMS in a Northwest university in the United States. Qualitative inquiry was the primary means in the process of data collection. All interviews were tape recorded and transcribed for the purpose of checking reliability. The participants were

asked to describe their perceptions toward taking courses on-line and learning activities they did on the website, with particular attention to the involvement and feedback of the instructors. During the interviews, students were also asked to reflect on their conceptions of learning based upon past experiences in order to construct their answers in a systematic manner. Follow-ups were conducted after the first interviews to clarify some of the unclear responses. In order to increase the credibility of the qualitative data, interview transcriptions were also reviewed by interviewees to ensure that the collected information was accurate. Finally, data was organized by grouping respondents' answers together to address the research questions.

Research questions

In order to discover more about the students' perceptions of on-line learning and to test the assumptions about the instructor's role, the present study focused on the issues of instructors' understanding of technology and their participation in the on-line courses. The main goal of this study was to characterize the issues that learners faced while dealing with the instructor-related issue. To accomplish this, the following specific research questions were formulated:

1. How do students communicate with the on-line instructor?
2. What is on-line instructors' capability of using on-line teaching tools?
3. What factors in the on-line courses inhibit students' learning because of on-line instructors?

Results and Findings

The first research question concerned the channel of communication between students and instructors. Fourteen interviewees pointed out that e-mail was the primary tool for them to get in touch with their instructors followed by a private discussion board in on-line courses. 10 students described that their teachers responded to their question in a timely manner, but 9 participants complained about inadequate feedback on the discussion board. For instance, a student indicated her concern:

I would like the professor to respond more. In both classes I take on-line they rarely do anything, but list assignments. We don't get any feed-back on our discussions with each other. They are interesting and educational, but I could learn as much being on a chat-line. I assume the instructor has more knowledge than the students and that part of their job is to guide us with that knowledge... (ED 2)

Another student suggested that responses from the instructor were very important for him to follow the learning schedule. "Instructors need to make sure they are making contact with their students frequently as I have found that many weeks can go by without a response and sometimes waiting for that response affects the next week's assignment" (IT 3).

In response to the second research questions, 8 out of 15 participants stated that the instructors' unfamiliarity with the course website obstructing their learning. Comments are listed as followings. "It is difficult when the instructors are just learning how to use the site. It would be most useful if they could have some training on implementation of this product. At the beginning of the course, my instructor was very confused and had multiple outlines and assignments posted in different places that didn't match with each other. We didn't know what was going on...and really still don't!" (IT 1). "...the fact that the teachers do not know how to properly use the system makes it very difficult for everyone involved. I have had to spend typically an hour to two hours simply combing through the course sites to make sure that I have not overlooked information that has

been posted or changed or added or taken away.” (IT 7). Another participant commented that an instructor workshop should be arranged before each semester. “A professor workshop on how to use the system would be great for the teachers that will be instructing via [on-line] format” (SE 1).

The third research question pertained to unsatisfactory factors that were caused by on-line instructors. Poor organization of course materials was mentioned by 6 interviewees. One student said, “I am appalled at the organization of the class I took. Assignments are posted in random areas on the site, the syllabus changed a number of times. I can go on, but basically there is no organization at all” (IT 2). Another student also had the same experience, “It would be nice if professors would organize their sites the same. They put their information under different links. It was a little confusing at first trying to find their outlines, etc” (IT 3).

Discussion

The results of this study showed that most learners’ experience with the role and convenience of on-line courses was mostly positive. However, comments regarding the instructors’ unfamiliarity with on-line courseware were mentioned by several respondents. This indicated that many instructors did not sufficiently understand how to develop and use on-line courses which caused trouble for students. A quote from a participant illustrates the problem, “I found out how much each instructor really knew about creating a Web pages. How familiar with computers is the instructor? I think some of them are very unsure of themselves and are lacking in knowledge of using a website. That makes it more difficult for the student, too.” Thus, equipping instructors with adequate computer skills and on-line teaching knowledge would reduce learners’ frustration with the use of on-line courses.

Another major issue was the problem of inconsistency among instructors who created courses. This finding is supported by Tozman’s (2005) study in which he pointed out that inconsistency in on-line course design from instructor to instructor was one of the major symptoms of poor e-learning among students. These results reinforce the need of appropriate training for instructors before they begin creating their own on-line courses with on-line course management software. Also, additional training should be offered in a timely manner after new updates have been introduced in order to help on-line instructors upgrade technical skills and know the latest about new technology.

To ensure the effectiveness of Web-based instruction, on-line instructors must understand the needs and concerns of their students. This approach would help instructors to consider the instructional design, pedagogy, and technology when using the Internet as a teaching tool. Related research (Volery & Lord, 2000) described that the instructor’s role in on-line learning is not only a knowledge provider but also a learning catalyst and knowledge navigator. Therefore, training instructors in ways to interact with students through using computers is as important as training them on the use of course management software. A new skill set of effective on-line teaching should be established as a training guideline to assure the quality of on-line instruction.

Conclusion

This study investigated the on-line learning experiences of fifteen graduate students especially regarding the input of their instructors. The benefit of this study is that it clarifies the particular aspects of instructor-related issues that closely affect the quality of on-line instruction. Furthermore, the results shown here have practical significance for helping to train coordinators at institutions of HE to develop suitable training programs for instructors involved in on-line teaching. Providing more resources and training will encourage and empower instructors to engage more deeply and well in Web-based courses.

The developing importance of on-line learning has gained attention from both the public and private sectors. Numerous courses are being offered using this format and more are to be expected in the future. It is fundamentally important for instructors to gain more understanding about the various issues of on-line learning. With appropriate knowledge and training, instructors will improve their ability to provide positive and productive online learning experiences for their students.

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Virtual Design Based Research

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Introduction

Online instruction can seem like an experience in teaching to the great void. Course content and assignments are designed, developed, and posted online for unseen students who are out there somewhere in cyberspace. An instructor may devote long hours crafting multimedia rich course content only to wonder if students are using and benefiting from those materials. Student engagement with course content can be a mystery even in traditional face to face classrooms. One of the benefits of online instruction is that the course materials are posted on Web servers or course management systems and usage tracking is possible. In a traditional course it is difficult to determine if a student picks up a textbook to read it, but in the online course the mouse click to open the Web page containing an online reading assignment or multimedia presentation can be recorded. Additional data can be collected in the online course through anonymous online evaluation surveys. Data can be imported directly into spreadsheets or databases thus eliminating the need to transfer information from paper survey instruments. The usage and evaluation data can be analyzed by the online instructor to improve course design in a manner consistent with existing instructional design models (Dick, Carey, & Carey, 2005; Gustafson & Branch, 2007). The formative and summative evaluations used as part of the instructional design process are valuable for revision of specific designs created for defined groups of learners. A shift toward a research oriented focus for instructional design is necessary in order to move into the broader scope of learning theory.

Instructional Engineering for Online Learning

Instructional design is oriented toward the practical goal of developing effective teaching and training solutions. A transition can readily be made from instructional design to an instructional engineering approach by changing the emphasis to one of design centered research. The term instructional engineering is one possible name for the partnership between instructional design and research. This idea was suggested by Brown (1992) when describing how she engineered innovative educational environments while simultaneously conducting experimental studies to learn how they functioned in an authentic classroom. The term design experiment has been used by Brown and others when discussing the strategy of designing an instructional intervention to be tested through research in an authentic classroom context (Brown, 1992; Collins, 1999). Alternative names for the methodology include design research (Collins, Joseph, & Bielaczyc, 2004; Edelson, 2002), and design based research (Barab & Squire, 2004; The Design-Based Research Collective [TDBRC], 2003). These terms are often used interchangeably.

An instructional engineering approach can be applied to the design and study of virtual learning environments. From this perspective the online course is treated like a product to be designed and tested through a design based research methodology. This process has been described as being similar to product design engineering (Zaritsky, Kelly, Flowers, Rogers, & O'Neill, 2003). The instructional engineering process might begin

with conceptualization of the product (i.e. online course) based on relevant overarching theory. This would be followed by design and development of a prototype. Next, the prototype is tested and data is collected to inform revision of the design. This creates an iterative process of conceptualization, design, test, and redesign in order to improve the product, which in this case would be the online course. This process is essentially what design based research is all about. An innovation is designed and studied within the context of the learning environment it was intended for. One benefit is that all systemic variables that might affect success of the design are present. A design that works well within the controlled and protected experimental laboratory may fail after encountering these extraneous variables. Because of this, design based research can be used to complement experimental research. Experimental research is used to investigate isolated variables and design based research is used to investigate a system of variables.

An example of the interplay between experimental and design based research is found in the area of multimedia learning. Many experimental studies have been conducted to examine how learning is affected by the use of multimedia for instruction. For example, Mayer (2001) conducted a series of experimental studies over more than a decade to develop a set of principles for multimedia learning. These studies were conducted in a face to face controlled laboratory setting. There is considerable evidence supporting the effectiveness of multimedia as an instructional tool when its design is based on the principles described by Mayer. The next question to consider is whether or not the multimedia learning principles remain effective when applied to a new context such as an uncontrolled and messy classroom situation. The online learning environment adds additional complexities due to the reliance on Web technologies and the unseen use of multimedia by students. There is no chance of the principles being effective if the technology fails to work. Furthermore, if students do not use the multimedia then the benefits are forfeited and instructor time was invested for nothing when creating it. If the technology works and students use the multimedia then there still may be design issues that minimize its effectiveness. Problems such as these tend to surface when integrating multimedia in the functioning online course.

The Virtual Research Laboratory

The online course can be structured as a type of virtual research laboratory where new designs for instruction may be simultaneously implemented and tested. Design based research promotes the combination of design, research, and practice. However, the guidelines for conducting this type of study are vague and still open to interpretation. Design based research is still emerging and borrows from other methodologies such as action research and formative evaluation (Wang & Hannafin, 2005). What differentiates it most from other forms of research is the emphasis on theory development derived from studying learning designs as they unfold under the influence of contextual variables (Barab & Squire, 2004; TDBRC, 2003). In an online course multimedia learning theories could guide the design of instructional content which is then tested in the context of the virtual classroom. When the results of similar studies set in different contexts are combined a context domain or profile of learning environments where a design has been tested successfully is established. For multimedia learning this may included a range of contexts such as the experimental lab, face to face classroom, and online classroom. In this way theory is shown to either work well or fail in an array of learning environments.

Since design based research is emerging there is some question about what it really means to do this type of study. A number of articles and book chapters on the topic provide a sense of the general features of the methodology. Many of these have been published in recent years indicating an increased level of interest. At least three special issues of peer reviewed journals have featured the topic of design based research or design experiments. These include an issue of *Educational Researcher* in 2003, and two special issues in 2004 one of which appeared in *The Journal of the Learning Sciences* and the other in *Educational Psychologist*. The methodology has found its way into grant funded research projects as well. Approximately 20 percent of grants awarded between 1996 and 1998 by the Division of Research, Evaluation, and Communication at the National Science Foundation may be categorized as design experiments (Suter & Fretchling, 2000).

Much of the literature about design based research is focused on what it is or how it might be characterized. A few case studies have been written to explain how it has been applied in actual research (diSessa & Cobb, 2004; Joseph, 2004). These studies are set in the context of face to face classrooms. A gap in the literature exists for design based research studies that are set within the context of a virtual classroom. It has been argued that design based research has potential for the study of technology-enhanced learning environments (Wang & Hannafin, 2005). Online instruction is still evolving and much needs to be learned about effective practice. Design based research is appropriate for studying online learning environments and the impact of instruction designed for them.

A starting point in the process of developing a virtual design based research study is to define a workable process. In general, design based research involves iterative cycles of design and implementation (Edelson, 2002). Data collected during each cycle is used to make revisions for the next cycle and develop, refine, or extend theory. Cycles are classified as macrocycles and microcycles (Jonassen, Cernusca, & Ionas, 2007). A macrocycle is a long phase such as a semester and the microcycle is a shorter phase such as a day or week of class. During microcycles adjustments can be made to the design or strategies used for collecting and evaluating data. In a study of multimedia learning within an online course the microcycle would be the individual assignment phase that occurs daily or weekly. Problems with the multimedia design can be corrected during each microcycle as the course progresses through the semester long macrocycle. After the course has been completed additional modifications can be made before repeating the use of the multimedia in a new session of the course. These modifications are made after analyzing the data and reconsidering the theories driving the design of the multimedia.

The virtual design based research study may be structured in a set of systematic steps that can be followed during each microcycle as well as the macrocycle. Continuing with the example of the multimedia enhanced online course these steps are conceptualized as follows.

(1) Craft the Design: Develop the overall framework for the entire course including the syllabus, course schedule, and learning goals. For each assignment develop multimedia presentations and simulations that are designed to meet the course goals. During the design process use a combination of instructional message design and multimedia learning principles to guide development of the design (Clark, 2005; Fleming & Levie, 1993; Mayer, 2001).

(2) Test the Design: Implement the multimedia while the course is in progress. Test the multimedia using multiple Web browsers and computers to assure that the technology is functioning properly. After the multimedia is made available to students collect usage data through course management statistics and server side scripts. Use online forms to collect anonymous evaluation data from the course participants. The anonymity will protect students from coercion due to grade penalties and produce honest feedback.

(3) Analyze the Data: Feedback from the evaluation surveys will provide information about the perceived value of the multimedia for learning. Comments submitted by students who complete the evaluations provide insight into the nature of technical problems or misunderstanding about the multimedia content. Usage data will reveal patterns of access such as frequency of use, peak usage days, or types of Web browsers being used to access the multimedia.

(4) Build Theory: After analyzing the data determine if there is evidence to support revision or extension of the theories applied during design of the multimedia. For example, if the multimedia is rated poorly by students is it because of a flaw in the design or the theories guiding the design? If students are not using the multimedia is it because of technical problems or is it a matter of motivation? These questions can be studied in the next cycle of multimedia integration.

(5) Revise and Retest: Revise the design of the multimedia to improve it and also to continue testing theory. For example, the data may indicate that motivation issues are affecting frequency of use. In the next cycle of implementation adjustments can be made to the design to see if the multimedia is used more often.

The previous sequence of steps demonstrate a practical example of one way that a virtual design based research study might be structured. Although multimedia learning was discussed in these steps the process is not limited to that particular focus. Any number of designs for learning could be studied through design based research in the virtual laboratory of the online course.

Conclusions

The number of programs offering virtual instruction has grown to the point where online education is now being discussed as having entered the mainstream (Allen & Seaman, 2005). There is high demand for online courses and educational organizations are actively developing or expanding options. The challenge ahead is not only meeting the demand, but also developing a deeper understanding of online teaching and learning. There is still much to learn about best practice across the landscape of possible online course offerings. Through design based research innovations in online instruction may be designed and simultaneously tested in the real-world online classroom. The technology supporting the online course provides a mechanism for obtaining data to inform designers, researchers, and practitioners about the unseen world of student learning online. Next steps for a research agenda in online education include further development of vocabulary and methodological processes that will better support meaningful dialogue about virtual design based research. Doing this will lead to the evolution of methodologies appropriate for integration of design and research in the online course.

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Student Expectations for Distance Education

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Introduction

Thirty years from now the big university campuses will be relics. Universities won't survive. The future is outside the traditional campus, outside the traditional classroom. Distance learning is coming on fast. – Peter Drucker (1997)

While overly pessimistic in our opinion, Drucker's point is well taken when one considers the rapid growth of distance learning in education and industry during the last decade (Salas and Cannon-Bowers, 2001). Although several factors have driven this upsurge in nontraditional delivery of instruction, developments in technology including the user-friendliness of computers and their affordability, as well as the demand for "just in time" learning that accommodates students' lifestyles have been primary motivators (Ricketts, Wolfe, Norvelle, and Carpenter, 2000). And the demand for distance learning shows no signs of abating.

Distance learning is a broad term that encompasses both distance education (DE, a term commonly used in academia) and distance training (a term commonly used in industry). This paper examines expectations of university students enrolled in DE courses as defined by Bordeau and Bates (1997): education that is computer based, remote, or asynchronous and supported by some instructional system.

For universities and colleges, DE provides the opportunity to service more students who desire an education. For would-be students, the positives associated with DE are obvious. According to Webster and Hackley (1997), DE will continue to play an important role in higher education because it offers the advantages of increased convenience, access to courses which may not be available locally, and flexibility for those students who wish to combine an education with full-time employment and family responsibilities.

DE may also provide an unintended, yet valuable, experience related to career development. The experience gleaned by students who have already been exposed to DE, which was once considered a novel medium, provides a distinct advantage to would-be learners – a sense of familiarity and self efficacy for learning virtually.

Distance education is not without its skeptics. Faculty frequently express apprehension with DE because of the frequent technological problems associated with delivering the material (which may lead to student frustration and poor evaluations) (Crow, Cheek and Hartman, 2003). Likewise, concerns related to student learning and outcomes persist, despite several indications that DE results in comparable, if not better, educational results (e.g. Merisotis and Phipps, 1999; Sankaran, Sankaran and Bui, 2000).

Despite these uncertainties, the demand for DE courses appears to outweigh the reservations some articulate. As academics; however, we continue to wonder "what are the differences between a traditional onsite education and one obtained at a distance?" It is commonly accepted among many professors that students' perceptions of and

expectations for a course are frequently a harbinger of their course evaluations, and it is an equally well accepted fact that students' expectations for a course frequently underestimate the amount of time and effort required to excel. In the following sections, we develop hypotheses regarding students' expectations in the areas of teacher-student and student-student interaction, external interference, and course instruction and preparation in regards to distance learning.

While DE has been praised for its flexibility, we believe that management students enrolled in DE courses will expect to have significantly less interaction with both their peers and professors on a weekly basis. Part of this expectation may result from the fact that students have not considered how interaction can occur outside of a traditional classroom setting where the teacher and other students are physically present. This expectation may actually be quite realistic, as many professors do not take full advantage of technological tools to promote interaction (Parikh and Verma, 2002; Jenkins and Downs, 2003). These courses often lack the necessary interactivity for many learning activities, including the opportunity for group discussion and question-and-answer sessions (Parikh and Verma).

Although some suggest that a successful DE course requires the creation of a learning environment that encourages interaction (Berge, 1999), research has found DE courses to be less community-oriented than a traditional classroom (Powers and Mitchell, 1997; Perreault, Waldman, Alexander, and Zhao, 2002). As pointed out by Crow et al. (2003), some students enrolled in DE courses may feel "isolated and out of touch" (p. 335), and the lack of professor and peer interaction can lead to a higher level of frustration. Interaction with professors and peers can serve as a strong influence on students' acceptance and perceived usefulness of technology in the learning process, particularly in management education (Martins and Kellermanns, 2004). Alavi, Wheeler, and Valacich (1995) found that learning outcomes are typically maximized when student involvement and interaction are high. Based upon these previous findings, the following is hypothesized:

- Business students enrolled in DE courses will expect to have significantly less interaction with their classmates and professors on a weekly basis than students in onsite courses.

Jenkins and Downs (2003) found that a higher percentage of DE students are full-time employees and convenience and reduced travel time were the two primary reasons students choose to enroll in a DE course. An increasing number of college students are employed full-time and have more outside responsibilities that create "barriers to 'traditional' education" (Christensen, Anakwe and Kessler, 2001, p. 275). We believe that these extra demands on students' time create more interference in their learning process.

- Business students enrolled in DE courses will expect to experience significantly more interference in their course performance due to outside obligations than students in onsite courses.

Prior research (Powers and Mitchell, 1997) found that students perceived an Internet-based course to be more time consuming than a traditional classroom. In a study of community college students, Roblyer (1999) found that students who prefer DE courses placed greater value on controlling the timing and pace of learning, while students enrolled in traditional classes valued personal interaction with their professors and peers. These prior findings indicate that students may be required to spend more time outside the virtual classroom on course activities and less time engaged in actual instruction.

- Business students enrolled in DE courses will expect to spend significantly fewer hours engaged in course instruction, and more hours engaged in outside course preparation, than students in onsite courses.

Methods

Research Setting, Participants, and Procedures

As part of an effort to improve departmental teaching, students enrolled in sixteen Management courses (eight DE and eight onsite) at a large, regional university in the southeast were invited to complete an anonymous web-based survey aimed at ascertaining the opinions and expectations of the students with regard to the courses in which they were currently enrolled. No extra credit or incentive was offered for participation and individual student participation was not tracked.

Survey Instrument

The survey instrument used for this study was comprised of questions used in previous research on DE (Christensen et al., 2001; Martins and Kellermanns, 2004), and original questions, created by the current researchers, specific to the researchers' interests.

In addition to demographic data, students were asked to report on their course expectations. Specifically, they were asked to respond to the following statements using a 5-point Likert-type scale where one was "Not at All" and five was "Extensively":

- How much interaction do you expect to have with your classmates on a weekly basis?
- How much interaction do you expect to have with your professor on a weekly basis?
- To what degree do you expect outside obligations (work, family, etc.) to interfere with your course performance?

Students also responded to two questions in terms of hours per week, ranging from zero hours to nine or more hours.

- How many hours do you expect to spend on either actual or virtual classroom instruction for this course?
- How many hours do you expect to spend on outside preparation and activities for this course?

Results

The questionnaire was completed by 199 (96 men, 103 women) students. Forty- seven percent of participants were enrolled in onsite courses, and 53 percent were enrolled in DE courses. Among those enrolled in the onsite courses, approximately 54 percent were undergraduates and 46 percent were graduate students. Graduate students made up a larger percentage of the sample population for DE, accounting for 60 percent of those enrolled in our online courses.

Independent-samples t tests were conducted to evaluate the hypotheses that students in distance learning courses expect to have less interaction with their classmates and their professors than do students in traditional onsite courses. The first was supported, $t(197) = 6.111$, $p < .05$, with distance students ($M = 2.82$, $SD = .818$) expecting less interaction with other students than their onsite peers ($M = 3.52$, $SD = .800$). However, contrary to expectations, distance students ($M = 3.05$, $SD = .726$), do not anticipate less interaction with their professors than do onsite students ($M = 3.13$, $SD = .806$), $t(197) = .737$, $p > .05$.

Also contrary to expectations, DE students ($M = 2.83$, $SD = .860$) did not expect outside obligations to interfere with school work to a greater degree than did onsite students ($M = 2.82$, $SD = .972$), $t(197) = -.073$, $p > .05$.

With regard to time spent related to course work, findings were mixed. DE students ($M = 1.87$, $SD = 1.010$) did not expect to spend significantly less time than their onsite peers ($M = 2.07$, $SD = .942$) involved in course instruction, $t(197) = 1.496$, $p > .05$. However, DE students ($M = 2.50$, $SD = 1.102$) did anticipate spending significantly more time on outside preparation and activities for their courses than did onsite students ($M = 2.10$, $SD = .974$), $t(197) = -2.761$, $p < .05$.

Discussion

Although all of the findings were not consistent with expectations, certain contextual factors may have had a direct bearing on this. For example, while the hypothesis related to interaction with other students was supported, expectations related to interaction with professors were different than anticipated. It is believed that both of these factors may be influenced by students' previous experiences with DE. Fifty eight percent of respondents had taken at least one DE course in the past, and therefore had some standard of interaction from which to establish their current expectations. An informal poll of faculty teaching these courses online revealed that each faculty member requires significant interaction at the professor to student level – typically in the form of moderated discussion boards, chat sessions, or even coming to campus for exams. However, many do not require group or team projects in their DE courses, hence diminishing the perception of student to student interaction.

Previous research has indicated that those who pursue DE frequently do so because outside obligations prohibit attending traditional lecture-based courses (Christensen et al., 2001; Jenkins and Downs, 2003). As such, it was expected that the DE students would anticipate a greater potential for interference from these life activities; this appears to have been unwarranted. As anticipated, a greater percentage of the DE students held a job outside of being a student; 86 percent of the DE population held outside jobs compared with 71 percent of onsite students. However, when looked at as a whole, 80 percent of all study participants held a job outside of being a student. Hence, outside responsibilities are likely to plague both groups. The role of past experience with distance courses may have played a role here, too. Because the majority of DE students had taken courses online in the past, it is reasonable to assume that they have developed methods of coping with the influence of outside obligations so as to prevent their interfering with course performance.

Findings for the last hypothesis also make sense when one considers the level of experience that the DE students in this sample possessed. Because previous courses have likely involved the use of discussion boards, chats, etc., DE students do not expect to spend less time in course instruction activities than do their peers. In this instance, it is assumed that their experience in previous courses has reframed their definition of what it means to be involved in course instruction and they see these activities as the corollary to onsite lecture and class discussions. It is also possible that having already been exposed to the current courses' syllabi and professors' stated expectations influenced the responses here.

Finally, the DE students' expectations with regard to the course requirements for preparation and work outside of normal class hours appeared to be consistent with the realities of online education and previous research. Powers and Mitchell (1997) found that students expected a DE course to be more time consuming than a traditional course. Even when students are highly involved in synchronous activities, the majority

of work to be completed in a DE environment requires that students take initiative and complete most activities on their own time. A positive outcome of this increased outside workload, however, is that DE students can experience a higher level of learning than their counterparts on campus (Maki and Maki, 2002).

Conclusion

The current study was conducted to provide insight into the expectations of students enrolled in online management courses in order to improve the educational experience of these students. With greater understanding of students' expectations, faculty can better plan and execute their courses so that they address students' curricular expectations and include communications to correct faulty expectations early on. Despite the fact that all of the hypotheses were not supported here, the information gleaned provides insight into the expectations of students for their educational experiences. Findings of our study indicate that while DE students anticipate less interaction with their peers, they do not expect to have less interaction with their professors. Efforts to promote interactivity of both types are strongly recommended because students are most satisfied when their online learning experiences are highly interactive in nature (Jen, 2005), and for pedagogical reasons (Alavi et al., 1995). When interactive activities are carefully planned, they can lead to both greater learning and increased motivation (Berge, 1999; Northrup, 2002). Wyatt (2005) found that students felt online instruction was more academically demanding than traditional classroom instruction. Students' expectations for the amount of effort involved in DE courses reflected this sentiment. This is taken as a positive sign. As with traditional college courses, the combination of realistic expectations for the amount and type of work, plus the motivation to do well is often a harbinger of success.

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Re-envisioning Asynchronous Communication

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Introduction

In fall 2003, I accepted a position that required me to adapt a core professional and technical writing course at the University of Wyoming (UW) to a virtual classroom. As an instructor for the only baccalaureate-degree-granting institution in Wyoming – a large, rural state with significant economic and educational diversity – I was used to serving a broad population with diverse learning styles and needs. Furthermore, I knew that “although the technologies and processes in Web-based instruction provide flexibility for the distance learner, they also can produce specific challenges” (DeTure 21). Nevertheless, I was unprepared for the glut of individual communications and the volume of personal attention my students would require.

Since then, I have developed the use of asynchronous communication tools to limit the repetitive, individual communications that overwhelmed me during my early semesters teaching online. Instead of relying on email for mass communication, for example, I now use the course platform's built-in Announcements tool. I also rely heavily on the materials posted on the course website and on students' expertise with online learning in my responses to individual student inquiries. Finally, I continue building infrastructure into my course Home area. I have dubbed the resulting online course, which relies heavily on student-teacher and student-student communication, “high-tech, high-touch.”

On the following pages, I discuss the development and application of these techniques. After a brief review of current literature and research into online teaching and learning, I contextualize my discussion by introducing course strategies and objectives. Next, I briefly overview the course platform, and finally, I discuss how I have used asynchronous tools, including threaded discussions, announcements, and email both to facilitate community in the online classroom and to manage my teaching time more efficiently.

Background

In February 2004, the Conference on College Composition and Communication (CCCC) issued a position statement identifying numerous best practices for faculty teaching writing and composition in the online environment. According to these guidelines, successful online instruction “encourages contacts between student and faculty, develops reciprocity and cooperation among students, and uses active learning techniques” (Yancey et al., par. 15). Indeed, as Cheng-Chang Pen and Michael Sullivan assert, “communication is always a top priority in an online [teaching] environment” (par. 1). In “College Students' Perceptions of Quality in Distance Education: The Importance of Communication,” Madeline Ortiz-Rodriguez et al. affirm this assertion: “Students related quality in communication with the following features: interaction between students and instructors, and between students and students; timely feedback from instructors; and availability and accessibility of teaching assistants, facilitators, professors, help staff, and technical staff” (101).

Communication in the online environment, however, is unlike the spontaneous communication that takes place in a physical classroom. Although most course management systems (CMS) include synchronous communication tools, such as chat rooms and white boards, as Alvin Wang and Michael Newlin explain, “most Web-based courses rely primarily on asynchronous communication to deliver course information to students” (par. 1). Furthermore, the very nature of online communication creates expectations of constant and immediate availability of faculty. Using the ubiquitous MicroSoft Windows slogan, “Where do you want to go today?,” as a metaphor for online learning, Laura Brady demonstrates how the virtual learning environment fosters expectations of faculty availability that result in students' dissatisfaction when instructors

do not respond immediately to their communications (Brady 350-51). Yet, as Kristine Blair and Elizabeth Monske explain, “fully online courses require more up-front planning, more detail in design, and just as many, if not more, contact hours with students than traditional, classroom-based courses” (447). Clearly, despite Xiaoxing Han et al.’s assertion that “course management is a relatively weak area of distance education planning, development and operation” (413), deliberate course management is essential to the success of distance education.

In sum, while Liu et al. determined that interaction with online teachers is “one of the most important ways to disseminate distance education information” (45), nonetheless, effective time management is a key concern for online teachers. “Time issues,” Liu et al. explain, “indicated not only a need for online instructors to adopt efficient strategies to teach online, but also a need to learn how to strategically unbundle some roles to ease stress” (45). My early on-line experiences confirmed the breadth of these conundra. Although I spent hours designing a simple and consistent online course, when my course began, I was immediately inundated with emails from students ranging from requests for clarification to appeals to confirm deadlines or affirm that my students were “on the right track.” Knowing I would be expected to add a second section of my online course and increase section enrollment in subsequent semesters, I immediately sought methods to minimize this onslaught of personal communication without sacrificing my presence in the classroom. My entry into the cyber-classroom took place with a senior-level English composition course called Technical Writing in the Professions (English 4010). This class, which I also teach in a bricks-and-mortar (B&M) classroom, focuses on practicing and producing professional documents in various genres. For students from many disciplines, English 4010 satisfies a university-wide writing requirement and must therefore be completed successfully before students can graduate.

The course starts by introducing students to a variety of professional and technical writing genres and then builds these genres into a series of collaborative research and writing assignments that develop throughout the semester. The success of these assignments depends on seamless collaboration and effortless communication – ambitious goals, even in the shared physical space of a B&M classroom. In short, much of my job consists of building a safe, interactive community in which students can discover and shape knowledge collaboratively. The foundation of this collaborative community is comprised of threaded discussions, peer critiques, and group projects. Asynchronous threaded discussions provide the backbone of the course community by enabling students to become acquainted as they construct a working knowledge of disciplinary concepts together. Students and I use threaded discussions to explore our experiences with various technical writing tools and genres, to develop and critique a variety of documents, and to respond to the concepts introduced in the text.

Peer critiques comprise a second collaborative course feature. For each major writing assignment, every student critiques at least one classmate’s draft. Most students recognize the importance of peer input early in the semester and learn to value the models, both effective and ineffective, that their classmates’ drafts provide. Furthermore, as they offer and receive input on draft documents, students become aware of the type of feedback they value most as writers. At the same time, students begin to recognize their own strengths and weaknesses as readers. I complement threaded discussions and peer critiques with a series of collaborative projects. Early in the semester, for example, small groups of students use a set of established criteria to evaluate and analyze a commercial website’s rhetorical characteristics. A second group project asks students to define effective technical descriptions and instructions, again in small groups, and present their definitions in letters to future technical writing students. We carry this assignment – which tasks the class with its first attempt at polished, collaborative writing and can be quite difficult – into the discussion forum to explore the characteristics of successful group-work and its failures. My hope is that this ongoing group-work will prepare my students for a series of collaborative writing and research assignments that culminate in a final research project and analytical report. Although the majority of my online students begin these projects convinced that they will never collaborate effectively, after some initial struggles, most of the students overcome their

geographical distribution and produce robust and engaging research. Throughout this process, the students continue to build and draw upon the online community that they began constructing on the first day of class.

The Platform

My course management system, eCollege, is a multi-media-capable interface with extensive intrinsic structure. The default interface includes a Course Home area complete with links to the syllabus and calendar. In addition to the Course Home page, students have access to the following tabs: Email, Chat, Doc Sharing, Dropbox, and Webliography. Before my first online semester began, I augmented this interface to maximize the platform's depth and flexibility without making it excessively complex. I built the course around a weekly schedule; each weekly unit included the following modules:

- a Welcome page with an overview of the week's activities,
- a reading module cross-referencing the course syllabus and weekly schedule,
- threaded discussions integrating concepts from the text into students' real-world experiences,
- notes and peer review modules as applicable, and
- an assignment module containing prompts for each major assignment and links to examples, assessment rubrics, and other pertinent materials.

The High-Tech, High-Touch Classroom

Despite this robust infrastructure, or perhaps because of it, my students still expect the spontaneous reinforcement and information exchange that they have learned to rely on in the physical classroom. In the online environment, however, this expectation translates to a glut of emails and phone calls; when students have questions, instead of going to the online course materials, too often their response is to call or email me for direction.

My experience confirms Kwok-chi Ng's assertion that "most students considered that the major function of the online communication tool is to facilitate them to ask their tutor [or in my case, instructor] questions" (199). Instead of asserting themselves in a learner-centered paradigm, many students' first impulses are to position the teacher, me, as the expert in a teacher-centered classroom. This trend became particularly evident during my first semester teaching online, when one of my strongest students complained that she never knew what to expect from one week to the next. When I asked how often she had consulted the course syllabus, this student confessed, to her credit, that she had completely forgotten about the syllabus, even though it had been posted on the course website from the first day of class.

At first, I responded to my students' inquiries individually, occasionally reinforcing my individual emails with a global email clarifying an assignment or activity that had perplexed several students. Early in my first semester online, however, I realized that I would not be able to maintain the personal attention my students expected, so I began exploring ways to anticipate students' questions and to address them in advance. Near mid-term, I began emailing weekly reminders to each student listing ongoing and new assignments, activities, and deadlines. I also used these emails to preview upcoming activities and respond to potential questions.

Although my students reported that the email reminders were helpful, in fact, they were creating a new sort of dependency. In lieu of referring to the resources available on the

course website, students continued to come directly to me; more often than not, when they had questions, my students waited for their weekly email reminders and then simply clicked “Reply” to ask for clarification. Although my typical response was to gently redirect students to the website for the information they sought, I found it might take several weeks before most students formed the habit of relying on the extensive resources I had provided. Instead of fostering independence, as I had hoped, my reminders encouraged many students to rely on me even more, first for the weekly emails and second for immediate personal attention.

After several semesters of teaching online, I had an epiphany: I was demonstrating eCollege to a colleague who had used a similar CMS as a companion site for her on-campus classes. When my colleague asked me if I used the website’s Announcements feature, a light-bulb went off. Indeed, I had used the feature, but minimally. I immediately realized this tool could curtail some of those reflexive emails that had beleaguered me; by simply using the website to initiate information exchange, I suspected students would investigate the site for the information they sought in favor of first locating my email address and then crafting an inquiry to me. This theory has proven true. Although I still receive several of the “I don’t understand” emails early in the semester, by directing students to the areas within the course website that address their questions, I find most students quickly become sophisticated and independent online learners. In addition to using weekly Announcements, I created a Course Lounge – a threaded discussion area where veteran and inexperienced online learners exchange questions and support each other without my intervention. Offering all students the opportunity to engage in this mentoring facilitates the sense of community, as it draws on each student’s expertise.

Finally, I posted a comprehensive Assignments page in the Course Home area. This page lists every major assignment and includes due dates for drafts, peer critiques, and final documents; links to detailed assignment prompts; and any other pertinent assignment information. The Assignments page is useful not only to students; by providing all the links I need to renew and refresh course materials, it also helps me maintain and update the course website for upcoming semesters.

Although my initial experiments with these techniques stemmed from my need to re-inscribe my boundaries in the online classroom, I rapidly recognized additional benefits to the structure and techniques I was developing. First, as I minimized one-on-one correspondence with students, I was able to integrate individual student conferences. As students attest, these conferences are more effective tools for communication than personalized emails. Second, with my first set of informal midterm evaluations, I learned that one of the course characteristics my students value most is the frequent instructor feedback they receive; the conferences clearly augment this perception of individual attention. Finally, and most significantly, my new course design encourages students to become self-reliant and independent learners – an important step for juniors and seniors about to enter the workforce.

Conclusion

My experiences in the online environment have confirmed that, as in the physical classroom, “the interactivity available in these [online] approaches promotes active engagement of students in the learning process and leads to improved academic achievement” (Katz 4). The inclusion of these few tools and techniques has facilitated both student-student interactivity and student-teacher interaction and helped to create a truly student-centered learning environment. Furthermore, I am convinced that the integration of these few techniques into my online class design has

- increased student retention by providing information early and consistently,
- decreased student frustration with the online interface and layout,
- decreased student dependency on me as the sole source of knowledge,

- encouraged students' autonomy,
- streamlined the process of updating my course website from one semester to the next, and
- enabled me to use some of the time I have reclaimed to conduct individual conferences with my online students.

Although I am pleased with the evolution of my online classes over the past several semesters, I still encounter a few students every semester who rely heavily on me and express frustration when I am unable to answer their questions immediately. In contrast, some students never ask – I hope these latter students are using the tools I have provided. In future semesters, I will continue building explicit structure into my online course. I have developed a treasure hunt, for example, that asks students to locate course materials and to review the resources that are available for them. I may also quiz students over course materials early in the semester – something I have always resisted – to assure they read the syllabus and other critical information.

I will continue encouraging my online students to maintain frequent contact with me, and with each other. Nevertheless, I have learned that, by exploiting the course tools, I can relieve some of the unique demands of teaching online. Furthermore, using these tools effectively helps shape students into better consumers of online learning while it positions them as responsible and independent members of the workforce they will one day enter.

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Forgotten Alumni: Online Learners as Donors

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"It is important that universities look at distance education and giving, or 30 years down the road they are going to get caught." (Schejbal & Lescht, 2002, p. 8)

Introduction

Active alumni fulfill an important role to their alma mater, acting as evangelists for prospective students, community liaisons for existing students and as critical sources of income. Both college and university administrators and their development officers readily acknowledge the importance of alumni as the financial backbone of educational institutions (Mael & Ashforth, 1992). According to Dennis (2003) federal and state funding for higher education is likely to decrease in the future, leaving colleges and universities with little choice but to rely on other forms of revenue, including alumni donation. Alumni donations have also become more scrutinized in recent years because alumni participation rates are increasingly viewed as a measure of alumni satisfaction with an institution (Porter, 2000). As distance education becomes more prevalent, so does the need to examine whether alumni graduating from online programs will affiliate themselves with their alma maters and become active members of an alumni community. Unfortunately, according to Schejbal and Lescht, in 2002 no development offices in the US were addressing the distance education alumni audience. Yet, approximately 72 percent of colleges and universities offer distance education courses (Morrison, 2003) and 53.6% of schools participating in the Sloan Consortium's 2004 survey agree that online education is critical to their long-term strategy. The growth of online education only points upward as approximately 2.6 million students were expected to study online in 2004 (Allen & Seaman, 2004).

This paper synthesizes literature related to alumni giving, highlights the dearth of attention given to distance education alumni and provides suggestions for encouraging philanthropy among such alumni.

Ignoring an emerging student population

The majority of research within the field of alumni development focuses on traditional undergraduate student populations at private and public universities (Pumerantz, 2005; Okunde and Berl, 1997; Okunde, 1996; Clotfelter, 2001; Mosser, 1993; Monks, 2003) ignoring the growing body of non-traditional students who are increasingly filling classroom rosters. Non-traditional students are defined as those of multi-ethnic backgrounds, first-generation college students and those from a low-economic background. These students may attend college on a part-time basis and are typically over the age of 22. In defense of the existing research, non-traditional students have historically been associated with lower income and levels of giving (Okunde and Berl, 1997) as compared to conventional students, thus making them a less desirable demographic. In 2004, it was expected that more than 100 million students would be classified as adult learners or non-traditional students (Compton & Schock, 2000).

Distance education students fall within the definition of non-traditional students; in 2000, Educational Statistics Quarterly reported a clear pattern emerging for both undergraduates and graduate/first-professional distance education students. Students who reported participating in distance education programs tended to be those with family responsibilities and limited time. They were more likely to be enrolled in school part time and to be working full time while enrolled. Additionally, characteristics associated with family and work responsibilities (such as being independent, older, married, or having dependents) were associated with higher rates of participation in distance education. According to Dennis (2003) the college student of the future will not look like a college student of today, the proportion of enrollments made up of the

stereotypical white, 18-22 year-old college students will decrease in the next decade. An increasing number of non-traditional students look at the college degree as a workplace credential (Miller and Lu, 2003). The non-traditional student population is thus fast becoming the norm at some colleges and universities nationwide. These students increasingly embrace the flexibility that online coursework can offer to their hectic schedules. Unfortunately, a limited amount of research has been completed in this area. Indirectly, current research supports the argument that it is less common for non-traditional students to become active, donating alumni (Okunde and Berl, 1997). Harrison, Mitchell and Peterson (1995) determined that schools with larger part-time student populations have lower levels of donation.

More specifically related to online alumni, Schejbal and Lescht (2002) conducted a pilot study comparing online graduate student giving with face-to-face graduate students; the data was sorted by degree, gender, ethnicity, residency, and number of hours earned on and off campus. The results indicate that 88 percent do not contribute at all. Alumni who completed coursework on-campus gave more money to the institution than their off-campus counterparts or those who completed coursework both on and off campus. (Schejbal & Lescht, 2001) Alumni development offices have failed to encourage the participation of non-traditional students in development campaigns; or perhaps they have designed alumni programming that does not appeal to this unique and diverse demographic. Regardless of the specific reason, this is a population that has been ignored, a problem that needs to be corrected for the future well-being of colleges and universities.

Suggestions and recommendations

In the absence of numerous, large-scale studies specifically on distance education students, it is still possible to give several suggestions that can be applied to distance education alumni based on study of related research (Monks, 2003; Okunde & Berl, 1997; Okunde, 1996).

1. Distance education programs should utilize principles used by historically Black Colleges and Universities to guide their solicitation process.

The prospect for long-term growth of endowment gifts among traditionally Black college alumni merit a more generous budget to develop sustained and sophisticated approaches to cultivating individual gifts (Drewery & Doerman, 2001). Many demographic concerns regarding Black alumni are also associated with distance education populations, including lack of accumulated alumni wealth and lack of institutional budget dedicated to serving the group (Drewery & Doerman, 2001). Most interestingly, traditionally Black colleges and universities that engaged in strategic capital campaigns targeting individual alumni in the 1970s are generally considered the most academically competitive institutions today (Drewery & Doerman, 2001). For example, Spelman College's successful capital campaign was launched with limited development staff, no annual giving program, no ongoing stewardship program, and no planned giving or major gifts program. (Winbush, 1996) Despite these difficulties, Spelman's capital campaign in the late 1990s resulted in over \$113 million in donations.

Black college giving rates typically fall below 10%, (Holloman, Gasman, & Anderson-Thompkins, 2003). In order to promote greater alumni participation, traditionally Black colleges and universities take specific steps to reach out to their alumni community and personalize the giving process. Successful students and alumni are showcased as examples of the power of their degree programs. In addition, Black colleges and universities act as a support system for their alumni, providing a network of services such as career development, library access, and regional programming for alumni. These services create an active bond that allows the alumni to recognize continuing benefit from their alma mater. Many distance education students are unaware of the services that are available to them as alumni of a college or university. Educating alumni about these services would provide evidence of a tangible benefit gained from association with the alma mater. Showcasing past alumni and personalizing the giving process would also potentially increase giving from online students.

2. Distance education leaders should work to ensure student satisfaction within online programs.

The most significant individual factor associated with alumni giving is satisfaction with one's educational experience (Monks, 2001). Pumerantz (2005) asserts that the experience that students have is critical to future alumni donations. It seems clear that distance education students are more satisfied with programs that encourage interaction, promote community and work to create an affinity relationship between the student and the university. These same ideals encourage traditional students to become donors to their alma mater. Providing dedicated contacts to assist online students with frequent concerns including technological issues, financial aid assistance, and registration would be an appropriate start for the creation of an inclusive student experience. Navigating the campus administrative bureaucracy can be a daunting task for face-to-face students. When trying to seek assistance via the phone and email it become an exercise in frustration and futility. Many large colleges and universities offer international students dedicated assistance to help them integrate within the campus environment; distance education students should receive the same benefit. Research shows that with dedicated hands-on assistance students stay the course and complete their online programs at a much higher rate than the norm (Dahl, 2004).

For example, Kansas State University's online master of agribusiness program enrolled 83 students in 2002 from eight countries and 30 states and boasts a retention rate of 95 percent. Everything, from admission to tuition, is handled through the department which "streamline[s] services for the students (Jorgenson, 2002, p. 5) Student retention levels in the "Online Technology in Education" master's degree program at Lesley University, Cambridge, Mass., consistently reach nearly 100 percent. Students continually cite three factors that lead them to stay in the program:

1. Timely, interesting, relevant course content
2. Timely feedback from and frequent interaction with instructors
3. An interactive online learning community of students

According to Dr. Maureen Brown Yoder, Leslie's Director of Online Learning, "We also pay a lot of attention to them, such as contacting them if we haven't heard from them for a while. I've had graduates say they almost quit a course, but that this friendly interest made the difference." (Dahl, 2004, p. 6)

3. Distance education leaders and development officers should work to promote a familial concept throughout the educational experience.

According to Zieger and Pulichino (2004) a face-to-face component in a distance learning program is vital to establish, maintain, and evolve a virtual learning community of practice capable of transcending the limits of time and space through technology. Pepperdine University utilizes a 'Tech Camp' to orient its new educational technology doctoral students. Data reveals that Tech Camp's week long program is successful in fostering an initial community of learners. (Zieger & Pulichino, 2004) Tarleton State University has designed an orientation program to help students understand the online learning environment and appropriately manage expectations. According to Gaide (2004) student feedback at Tarleton State has shown that the orientation program had reduced student threat level and increased comfort with both the educational program and institution. Campus visitation may increase the distance education student's sense of inclusion into the university community at large.

In the same line of thought, Workman and Stenard (Rovai, 1996) suggested that a simple but effective way of establishing identification with the school is to issue identification cards. Identification cards represent a tangible link to the university and also offer a level of utility as many businesses offer student discounts. If a simple identification card can create a sense of association, imagine if an online program sent university apparel to each participating student? According to Pumerantz (2005) top fundraising institutions successfully integrate the philosophy

of 'family' at the institution. Welcoming distance education students into the university family at the beginning of their educational experience and continuing to encourage the promotion of the familial concept throughout the educational experience will result in higher levels of giving as alumni.

4. A new line of research should examine innovative ways to promote philanthropy among distance education alumni.

Current research defines several factors behind the psychology of giving. Those factors include: socio-economic, geo-demographic, and psychographic factors (Okunde, 1996); an individual's satisfaction with his or her undergraduate experience (Pummerantz, 2005; Monks, 2002); active participation in student government, intercollegiate athletics, performing arts/music, fraternities or sororities, religious groups, or resident hall life (Monks, 2002); a high level of involvement in an internship, contact with faculty outside of class, contact with their major advisor, or contact with campus staff (Monks, 2002); and organizational antecedent factors (organizational prestige), personal antecedent variables (sentimentality) and organizational outcome variables (Mael and Ashforth, 1992). Some of these factors can be addressed by developing an excellent online program, as suggested earlier. However, the new medium for instructional delivery immediately eliminates factors such as athletics, fraternities and sororities, and face-to-face contact with university and college faculty staff. New research needs to examine innovative ways to get students involved from afar; studies need to examine how to help students feel part of a community, both for educational and donation reasons. Unfortunately, with the exception of Schejbal and Lecht's 2002 pilot study, there has been no research concerned with distance education alumni's abilities and propensities to give.

5. There is a need to re-examine the roles currently assigned to students by development offices.

Students are normally categorized as traditional or non-traditional, as highlighted in this article. Although the online student seemingly fits into the non-traditional track, alumni offices need to understand and appreciate that online students can be considered alumni even if they do not complete an entire program online. The University of Florida online program (Ferdig & Dawson, under review), for instance, offers graduate courses to teachers who need professional development classes but already have a graduate degree. Single classes or even certificates (a small collection of courses) can be taken by students who do not need a degree but may have always longed to attend—and belong to—a prestigious institution. In addition, students are now beginning to take online classes because of the flexibility and pedagogic strength of the new medium; these new students may not fall into the non-traditional demographics of socioeconomic status or willingness to give. Considering these students as potential alumni donors opens up a new audience for development offices.

Conclusion

By ignoring the distance education student and alumnus, an ever expanding segment of the higher educational system, we are alienating those that have the knowledge and ability to contribute and promote distance education throughout the country. As Schejbal and Lecht (2002, p. 8) state: "It is important that universities look at distance education and giving, or 30 years down the road they are going to get caught." Students have embraced distance learning and determined that it is a viable and popular medium by which knowledge can be acquired. The sooner alumni development offices come to the realization that distance education students are here for the long term, the better their chances of building inroads into this community for the long term.

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Promoting Faculty Commitment to Distance Learning

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Introduction

Web-based distance learning is transforming teaching and learning in higher education. As the long-standing tradition of the physical classroom as the embodiment of higher education changes, new perspectives on what education "looks like" are emerging. Although distance educators and administrators frequently comment on their struggles with skepticism among university faculty about distance education, there is little systematic exploration of the issue (Kirby, 1988; Dillon & Walsh, 1992). Case studies flourish in the literature, yet little synthesis of these isolated explorations has been conducted.

This paper examines common barriers to distance learning among higher education faculty, discusses intrinsic and extrinsic motivating factors, and examines the role of incentives in promoting participation. Considerations for program planning in support of distance learning initiatives are presented.

New Roles and Expectations in Higher Education

As with anything new or different, many faculty have greeted distance education with skepticism and occasional disdain. Ultimately, the success or failure of distance education lies largely with the faculty, and it is the faculty who play an essential role in its implementation (Betts, 1998). Though reasons for resistance vary, certain themes emerge. The central controversies surrounding distance learning are the cultural implications it has for traditional higher education. Shifts in culture, new roles and expectations, and concerns about how distance education will ultimately be regarded are all sources of anxiety for faculty immersed in this changing environment. "If there is a true crisis in American higher education today, it is a crisis of purpose" (Lucas, 1996, p. xiv). Though this crisis is not a direct result of the recent explosion of distance education, the most pressing aspects of this crisis are both exemplified and exacerbated by the competing priorities that emerge when the development of an instructional web presence emerges at an institution. Changing roles and responsibilities are an inevitable result of innovation, and having so many people undertaking change simultaneously can create a climate of unrest.

Both faculty and students face the significant challenge of retooling their minds to fit the medium of web-based instruction. The instructional pattern of speaking and listening in face-to-face situations is an internalized cultural pattern. Converting the speaking and writing process to one of reading and writing is comparatively more difficult. It cannot be performed subconsciously, but must be planned, designed, constructed, tested and evaluated with full awareness of our goals and means. This is quite a different approach, and it is more or less a scientific process for both faculty and student (Peters, 1998).

The ability of faculty and students to negotiate the transition and embrace the new roles and responsibilities within the medium will determine success for both teachers and students. It is a process that has to be highlighted in faculty training and modeled for

the student. The effective management of the transition is both a function and reflection of program quality.

As most distance learning programs market themselves heavily to the non-traditional student in need of flexible delivery, distance programs must walk the line between meeting the needs of these students while maintaining standards of excellence for instruction. The challenges presented by less than conscientious "educational" providers are difficult to control. This is perhaps the most difficult challenge to circumvent, as many faculty fear a "guilt by association"—worrying that they will be professionally associated with questionable educational providers even if they are working within an educationally sound program. The perception of quality as it relates to an instructor's time and effort is also a potential barrier. Faculty want to feel that their investment of time is viewed as having high value. If the pursuit of distance education is not perceived as an endeavor of merit, faculty may be hesitant to invest the time and energy.

Reformers have urged a realignment of priorities to emphasize a more learner-centered reward structure, but "institutions have been slow to change well-entrenched practices" (Wolcott, 2003, p. 550). Reminders of this fact permeate the literature (Beaudoin, 1990; Dillon & Walsh, 1992; Olcott & Wright, 1995). Until technology integration and distance learning are internalized within the institutional reward structure and not treated as "extra" tasks, the use of technology will remain inconsistent and limited (McNeil, 1990). Reward structures must be re-evaluated to reflect the changing culture of instruction, but change in this area of higher education has been slow. This is one of many barriers faculty interested in undertaking distance learning encounter.

Barriers to Faculty Participation in Distance Education

There are predictable barriers to distance education initiatives, some driven by perception and others by institutional reality. The effective management of these barriers can be a predictor of faculty receptivity to new delivery methods. Faculty support is largely determined by the perceived compatibility of distance education with their beliefs and values about university education in general (Black, 1992). The effective implementation and expansion of quality distance education must extend beyond planning for new technologies; the success of any distance education effort rests primarily on the commitment of the faculty (Gottschalk, 1997). To gain their committed participation, faculty need to have their initial fears addressed and overcome. From there, identifying what motivates faculty to move toward action is the key. In addition to the disincentives that have characterized the traditional reward structure of higher education (Olcott & Wright, 1995), other factors have been identified as obstacles to participation in distance education in particular. Faculty fears related to distance learning itemized by Berge & Muilenburg (2000) included:

1. "faceless" teaching
2. fear of the imminent replacement of faculty by computers
3. diffusion of value traditionally placed on getting a degree
4. faculty culture
5. lack of an adequate time-frame to plan, evaluate and revise online courses
6. public ignorance of the efficacy of distance education
7. increased time required
8. the more technologically advanced the system, the more to go wrong
9. non-educational considerations take precedence over educational priorities
10. lack of technological assistance

These perceived barriers signal obstacles directly related to rapid changes in organizational culture. Administrators face the challenge of weaving solutions to those challenges into the organization. (Berge & Muilenburg, 2000). Regardless of institutional context, faculty developers and program administrators must be aware of the fears their faculty face. Consideration of how these perceptions will be addressed and how fears will be eased should be part of the collective vision for the distance learning program.

Tapping Faculty Motivations

Faculty support is one of many factors that will provide incentive for instructors interested in distance delivery. If this is not provided, its absence can be the disincentive that prevents their pursuit. Support must be tied to motivation, and motivation to incentives. Identifying barriers to participation is fruitless unless incentives that capitalize upon faculty motivation are established. While the previously discussed Berge and Muilenburg's (2000) study spoke specifically to the perceptual barriers that prohibit faculty from embracing distance technologies, other studies have examined perceptions and motivations that incline faculty toward distance education. As with most human behavior, faculty motivations for engaging in distance learning stem from both internal and external motivational sources (Wolcott, 2003).

Overall, research supports the conclusion that faculty are initially drawn to distance education more by intrinsic than extrinsic factors (Taylor & White, 1991; Betts, 1998; Rockwell, Schauer, Fritz & Marx, 1999). Betts' (1998) study of faculty motivation indicated that intrinsic motivators such as intellectual challenge, personal motivation to use technology, the opportunity to reach new student audiences and the chance to develop new ideas were all relevant factors in faculty adoption of distance technologies. Similarly, Rockwell, Schauer, Fritz and Marx (1999) noted the appeal of reaching students beyond their grasp in the residential environment.

Motivation is the path to influencing change, and faculty developers and program administrators must be cognizant of motivation in promoting change. Institutional vision must reflect awareness of motivators and provide a plan for systematically promoting factors to promote receptivity to distance initiatives. Motivation resides largely in the realm of psychology. An effective distance learning administrator must think about how to move the largely theoretical construct of faculty motivation into the practical realm of developing faculty in the area of distance education. As motivation is driven by incentives, the provision of incentives and the minimization of disincentives are crucial to planning faculty development activities for the newcomer to distance education.

Administrative Incentives and Disincentives

The purpose behind examining barriers and motivation is to identify strategies that will attract and retain faculty. In the move to action, program administrators must address the affective factors that influence faculty participation and then outline a system of support that begins with recruitment and continues throughout the life of the program. Underlying these efforts should be a reward structure that recognizes the significant effort it requires to be a skilled distance educator.

Faculty developers and program administrators must be aware of the affective factors that influence decision-making both to embark on professional preparation for distance

education and to persist in it. Developers must provide not only the content-driven information faculty may seek, but also recognize that faculty are often predominantly focused on psychological factors in their teaching (Cravener, 1999). Effective distance delivery requires both mastery of the technology and an understanding of basic instructional design principles. It also requires a reexamination of pedagogy. The goals connected to the design of distance instruction are often the same widely accepted goals in residentially-based instructional development (Kusmaul & Dunn, 1996). To this end, the differences between residential and distance instruction are not so great and should not be exaggerated, but must be noted.

Comprehensive training and ongoing technical support are critical factors. "If the institution does not have a commitment to enhance technological literacy...there will be too many disincentives for a faculty development program to succeed" (Padgett & Conceicao-Runlee, 2000, 331). Instructors need training to ensure a strong start, and continuing support and services throughout their distance education experience to promote maximum quality and satisfaction in the online courses they teach (Lieberman & McNett, 2000). The maintenance of seamless technology and the availability of knowledgeable individuals who can assist is a reflection of administrative commitment to the distance education initiative. The assurance implicit in the provision of sound infrastructure and ongoing support can ease faculty concern about the logistics of distance learning and provide reassurance that their efforts are valued and will be rewarded.

Sustaining Faculty Involvement

With all of the stated barriers, motivations, incentives and rewards, it seems that promoting faculty participation in distance education is a perpetual battle. Fortunately, the battle eases once faculty overcome their fears and are supported through their early experiences. In general, distance educators show positive attitudes toward distance teaching, and faculty attitudes improve as experience with distance education increases (Dillon & Walsh, 1992). Just as lack of familiarity with distance education is a predictor of resistance, increasing experience with the medium is a predictor of support for it (Black, 1992). As faculty find their skills improving, concerns are reduced and the intrinsic rewards of online instruction begin to show themselves more fully and more frequently. Some faculty also find the quality of their residential instruction improving as their distance instruction skills improve (Rockwell, Schauer, Fritz & Marx, 1999), thus promoting further personal and professional satisfaction within the medium.

This realization should indicate the implicit value of peer support and peer mentoring within distance education training and support plans. Experienced peers have the potential to play an important role in motivating reluctant faculty. Once faculty members experience success in the medium, they are likely to stay with it. In practical terms, it is easier for a distance program to retain faculty than it is to attract them, and this should be considered when deciding where to allocate resources and time. If the pursuit of quality distance education is truly a prized institutional goal, administration must first recognize that to drive change, the investment in human capital and potential is at least as important as their investment in technological infrastructure. The technology serves no purpose if it is not being employed in meaningful ways, and nothing of sustainable value will be achieved without significant investment in the human infrastructure (Foa, 1993). Too often, the failure to provide human

infrastructure in favor of the technological is made, and this limited approach leads to proportionately limited success. Faculty must be reasonably certain that their efforts will be regarded similarly among their colleagues and across campus units. To entice faculty toward distance learning, successful integration should be showcased throughout campus, illustrating the positive results across the organization while emphasizing incentives, training, support and reward structures (Foa, 1993). As faculty realize that their efforts are valued, their willingness to engage in distance activities will increase along with their confidence.

Conclusion

Just as faculty must support their students, institutions intending to be successful in distance education must support their faculty. "To remain at the forefront of higher education, faculty development initiatives need to broaden their focus, utilize more diverse methods and formats, focus on providing more learner-centered instruction, and consider positive cultural impact that electronic technologies make possible" (Kolbo & Turnage, 2002). The benefits of promoting innovations in teaching, both in the classroom and at a distance, offer direct and indirect benefit to the institution and the individuals that comprise it. "Institutions committed to encouraging innovative teaching practices are far more likely to attract and keep students, faculty and staff," (Kolbo & Turnage, 2002). Faculty developers are central to the promotion of innovative and effective teaching, both in the classroom and at a distance. Success is dependent upon identifying the needs of faculty and supporting their movement through the stages of implementation (Cavener, 1998).

Excellence in teaching must be the first, because adopting technology will not improve poor teaching, and without excellent teachers, technology will not enhance learning to any degree (Kearsley, 1996). Faculty and administration have both a mutual goal and a mutual dependence, and it falls to the faculty developers to mediate between these two bodies to promote the objectives of the administration while addressing the needs and motivations of faculty. Faculty participation hinges on being intrinsically motivated and equitably rewarded (Wolcott, 2003). Designing a system of faculty support that leverages motivation through the provision of attractive incentives is requisite to the success of any distance learning program.

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Student Perceptions of a Hybrid Course

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Introduction

The goal of hybrid courses is to join the best features of offline teaching with the best features of online learning to promote active independent learning and to reduce class seat time (Young, 2002). Hybrid courses are not traditional distance education courses, as they are not entirely online. They are also not simply traditional classes with a website, as online time replaces some classroom time. Further, these classes often require extensive course redesign as information posted online should augment the offline assignments and discussions. Hybrid courses offer advantages over face-to-face teaching by making the best use of physical resources and maximizing student learning by providing a variety of teaching and learning formats. They also offer advantages over totally online courses, due to the reduced but not eliminated professor-student and student-student contact (Garnham & Kaleta, 2002; Reiboldt, 2001; Robertson & Stanforth, 1999; Volery & Lord, 2000).

Institutions of higher education have become increasingly engaged in utilizing the Internet and computers as pedagogical tools. This is because of the relative affordability of computers and the ever-increasing simplicity and processing speeds of computer and Internet applications (Jurison, 2000). As such, online learning has grown significantly over the past decade due to its real and perceived benefits (McGinn, 2000). According to the National Center for Education Statistics, in 2000-2001, 90 percent of public 2-year and 89 percent of public 4-year post-secondary institutions offered some type of distance education courses with an estimated 1,472,000 enrollments in college-level, credit-granting distance education courses (U.S. Department of Education, 2003). Among institutions offering distance education courses, 90 percent offered asynchronous Internet instruction and 43 percent offered synchronous, or real-time, Internet instruction (U.S. Department of Education, 2003).

With the increased availability of the Internet, many colleges and universities focused on developing fully online courses that required no face-to-face meetings, hoping to attract students who could otherwise not get to campus. In recent years, however, many colleges and universities have encouraged students who live on or near their campuses to take hybrid courses. John R. Bourne, professor of electrical and computer engineering at Franklin W. Olin College of Engineering, Fairleigh Dickinson, surmised that in the near future, "somewhere in the 80-90 percent range of classes could sometime become hybrid" (Young, 2002).

Purpose

As a result of the phenomenal adoption and growth of hybrid learning environments it is imperative that educators and administrators understand the experiences of students who have participated in hybrid learning and assess student satisfaction with elements of these courses. Thus, our main objective in this empirical study is to examine student perceptions and overall satisfaction with a hybrid course. It is not our intention to describe or analyze student retention of material or learning of the information, but

rather student perceptions regarding the course format. This is especially important since student perceptions have been correlated to adoption and willingness to register for online courses (Singh & Pan, 2004). An introductory textile science course taught during the spring 2005 semester was selected for this study. The basis for the selection was that this hybrid course incorporates traditional in-class, face-to-face weekly laboratory meetings as well as online Internet components.

Method

The target population for this study was defined as students currently enrolled in the introductory textile science course at a land-grant university in the Midwest portion of the United States. A total of 163 students were enrolled in the course; 156 students or 96 percent of the students completed the survey.

The questionnaire designed for this study contained items drawn from previous research. The items used to assess participants' attitudes towards the course and the required course components (i.e., required online activities, required offline activities) were based on items previously used by Johnson, Burnett, and Rolling (2002) and Wang and Newlin (2000). Students were asked to evaluate elements of the course by answering questions such as, "How did you learn? Rate the value of the [various offline and online elements] in learning concepts and principles covered in this course." These items were presented in a Likert-type scale format in which participants were asked to indicate their level of agreement (1=strongly disagree, 5=strongly agree) with specific written statements. A limited amount of demographic information (e.g., year in school, major, interest area within the major, GPA) was assessed to allow students to maintain anonymity. As an incentive for participation 20 extra credit points were added to each participating student's final grade. The students had 24-hour access to the questionnaire for one week.

The Course

The introductory textile science course is a required 4-credit course for all undergraduate students enrolled in the apparel, merchandising, production, and design program. The catalog description states that this course discusses "textile fibers, yarns, fabrication, coloration, and finishes; quality and performance application to apparel, furnishing, and industrial textiles." Like other university science courses, the introductory textile science class requires students to memorize factual information as well as apply their knowledge in a hands-on laboratory environment. The introductory textile science class consisted of twice-a-week laboratory meetings. In these meetings, students applied their knowledge of textile science through individual and group experiments and in-class assignments. Other offline assignments included the completion of a fabric names notebook, the creation of an apparel products line or a home furnishings line, and extra credit opportunities (e.g., participation in local needlework club events, a visit to a regional living history museum). Online assignments included lecture content with corresponding weekly quizzes, paragraph response lab assignments, and a mandatory discussion board in which students needed to summarize assigned readings. All online assignments were posted to WebCT, a web-based, university-supported organizational format. The graded components of the Web-based course were open-student, open-book, and open-note.

Participant Characteristics

The final sample was composed of 156 individuals. The majority of the students indicated that they were sophomores (n=79) or freshman (n=37) and nearly all were majors within the apparel, merchandising, production, and design major (n=153). Most participants indicated that they had overall GPAs of either 2.0-2.9 (n=64) or 3.0-3.5

(n=56) out of 4.0. Participants (n=109) typically spent between 30 minutes and 2 hours studying the material for the course each week, and the majority of students believed that they would receive either an A (n=97) or a B (n=45) for the final grade in the textile science course. Most students indicated that this textile science course was not their first course to use WebCT. In fact, the majority of students (n=105) indicated that they had used WebCT in four or more of their previous classes. The participants (n=142) primarily accessed WebCT for the textile science course from home computers. For the most part, the undergraduates indicated that they enjoyed using computers (mean equals 4.11). In general, the participants encountered few problems using computers and the WebCT program to complete the textile science course. Only six students indicated that they had "much" or "great" trouble using WebCT in the course.

Results

Participants' responses seemed to indicate that they had a positive attitude toward the hybrid introductory textile science course. In general, participants tended to agree with the statement that they were satisfied with the course overall (mean equals 3.65). Additionally, participants indicated that their attitude toward the course improved after completing the course. The results of a t-test comparing their initial attitude toward the course (mean equals 2.32) with their attitude toward the course at the end of the course (mean equals 3.68) indicated that their attitude toward the textile science course significantly improved after they completed the course (t-value equals negative 10.69; p-value equals 0.00). Furthermore, participants tended to agree with the statement that they would prefer to have the lecture presented online, but to attend live lab sessions (mean equals 3.36), which was the way in which the hybrid introductory textile science course was presented during the semester. The results of a series of t-tests indicated that participants believed that they preferred the hybrid course format to a traditional, offline course format (mean difference equals 0.39; t-value equals 2.71; p-value equals 0.01) and to a course format that included exclusively online elements (mean difference equals 0.81; t-value equals 5.46; p-value equals 0.00). Considering all of these results, it seems to be the case that the undergraduates who completed the hybrid textile science course were generally content with the presentation format of the course material.

In terms of required course activities, participants indicated that they preferred the required offline activities to the required online activities. The results of a t-test comparing their attitude toward the required offline activities (mean equals 3.31) with their attitude toward the required online activities (mean equals 2.13) indicated that their attitude toward the required offline activities was significantly greater than their attitude toward the required online activities (t-value equals 23.64; p-value equals 0.00). This is not to say that the students did not have a positive attitude toward individual online activities. In fact, out of all of the offline and online activities about which participants were questioned, an online activity (i.e., completing online quizzes) received the highest mean attitude rating (mean equals 3.68) from participants. However, the mean attitude rating for this online activity was not statistically significantly different (t-value equals 1.46; p-value equals 0.15) from the mean attitude rating (mean equals 3.54) for the required activity which received the second highest mean attitude rating out of all of the offline and online activities (i.e., the required offline activity of interacting with teaching assistants during the laboratory sessions). So, while participants did seem to have a positive attitude toward many of the individual online components of the course, they also seemed to prefer the offline

activities, as a whole, to the online activities, as a whole. These findings seem to indicate that, based on student preferences, offline activities should not be abandoned in the introductory textile science course, again supporting the use of a hybrid presentation format for the course.

Discussion

Student perception of the hybrid course improved after completion of the course. Improved perceptions of the course most probably occurred as students became more knowledgeable concerning course expectations and gained a better grasp of course material. The study of textile science requires an understanding of many technical terms and definitions. While this element of the course may have been initially daunting to the students, the course may have become less threatening once the students became actively involved in the learning process. Additionally, the opportunity to access and study the technical information online at their own pace and convenience may have eased the students' tension. Furthermore, the opportunity to apply the material through hands-on activities in face-to-face lab sessions may have served to positively reinforce the students' confidence as they mastered of the course material. Thus, the hybrid learning format of this course worked well for students primarily because the offline, hands-on activities directly supported the online, independent learning of technical content and information.

Students preferred the offline activities to the online activities, with the one exception of the online learning quizzes. The learning quizzes allowed students three attempts at answering lecture content material. These experiences provided immediate feedback to the students. The quizzes also represented a non-threatening assessment of learning because only the highest grade of the three attempts counted towards the final grade. Overall, however, students seemed more satisfied with the offline activities. The students, especially those with a design focus within the major, could have been responding positively to the creative components involved with the production of a fabric names notebook and the creation of an apparel products line. Students may also have enjoyed the active learning and social engagement that occurred both inside of the lab setting and outside of the classroom (e.g., while visiting a regional living history museum or attending a needlework club event). The online activities were more focused on the memorization and comprehension of key course content, whereas the in-class activities included more tangentially related activities. Although students preferred the more imaginative assignments completed offline, they responded positively to the online presentation of the more technical material.

Conclusion

Results from this study seem to indicate that undergraduate students may prefer hybrid courses to exclusively online and exclusively offline courses. While the undergraduates who participated in this study preferred the required offline activities to the required online activities, they also seemed to prefer to have some components of the course online (e.g., the quizzes) and some components of the course offline (e.g., the labs). It would not be recommended, then, to have this textile science course completely online. This is not to say, however, that no courses should be presented exclusively online or to imply that all courses should become hybrid courses. Due to the fact that this study used a survey method with student participants from only one hybrid course, the results have limited generalizability. Researchers interested in the differences between hybrid learning formats and other learning formats should conduct controlled experiments to

obtain more definitive results concerning the differences that exist among online and offline learning formats. Additionally, because student perceptions of learning and the course requirements were assessed, this study's results cannot be used to support arguments concerning the effectiveness of hybrid courses. Future researchers interested in measuring actual student learning and retention of class information could design a study to compare differences in student academic achievement in hybrid, traditional, and distance education classes.

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Reversing Roles to Create an Online Course

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Introduction

Creating courses for the online environment can be an arduous undertaking and the demand for more is high. The design and development process requires numerous hours and intense creative effort on the part of the instructor who is already overloaded with the traditional “duties” of teaching, research and service. Time spent on creating courses to teach online is met with little reward. Individuals teaching online do so for the intrinsic reward and in recognition of students’ needs and in many cases, without release time or assistance to properly prepare a course (Pachnowski & Jurczyk, 2003; Parker, 2003). As a result, the instructor and the student can become overwhelmed and frustrated with teaching and learning in the online environment. How can we optimize instructor time and student learning as we administer online courses?

Once the decision is made to teach a class online, time becomes a valuable asset and the once familiar concept of class structure becomes vague. Gillette (1999) suggested that when teaching online, instructors are required to wear many different hats in order to keep students engaged in their new learning environment; not only are they the course instructor, but an instructional designer and technical support. In addition to the challenge of multi-tasking these newly found “duties,” instructors should also take into consideration the students’ perceptions of online learning to help them succeed. The online classroom looks, feels and “acts” differently from the traditional one. Developing a community of scholars asynchronously who are now anonymous rather than synchronously presents a challenge for the instructor, and must be considered in the design process. Alternatives to the verbal and visual cues normally present in the traditional/synchronous classroom need to be replaced with alternative methods. It is important for instructors to build into their course design a method of obtaining student feedback beyond the traditional university summative evaluations to help determine from the students’ point of view the effectiveness of the design of an online course. Ignorance of students’ perceptions may result in learner resistance and/or failure to succeed (Blythe, 2001).

Purpose for Partnership

To help minimize the time and effort involved with designing and developing an online course, a graduate student and an assistant professor reversed their traditional roles of instructor and student. They worked together over the course of one traditional semester to create an online course to be taught during a two and one-half week mini-semester. The online format for a mini-semester was selected because of the high demand for more online mini-semester courses by graduate students at a primarily commuter campus. A course taken in a mini-semester is a full-time commitment by the student, as they are not allowed to enroll in more than one course during the mini-semester. This approach served several purposes. The primary reason for this partnership was to provide a graduate student with the opportunity to learn the course content in the form of an independent study in order to fulfill a graduation requirement through experiential learning by becoming the course designer utilizing instructional design skills learned in a previous class. Secondary to offering the student an opportunity to learn the course material was to alleviate some of the pressure on the instructor to design and develop an online course for its first online deployment, and to also provide the opportunity to work with a graduate student in the design process as the client. Finally, the graduate student and assistant professor wanted to ultimately assess student perceptions of those enrolled of the course design upon completion of the mini-semester. The process followed by the assistant professor and graduate student to create the online course and the resulting course design will be discussed along with their experiences and lessons learned regarding the reversal of their traditional roles. While many institutions offer graduate and/or teaching assistants to their faculty, this is not the case in this

situation, the graduate student earned remuneration in the form of a course credit. Results from an anonymous survey disseminated within the learning management system (LMS) at the end of the semester to the students enrolled in the course to assess their perceptions of the course design will be revealed.

Process

Experiential learning provides an individual with the opportunity to create projects of value. Students who participate in experiential learning are able to put to use the knowledge and skills learned in previous courses, recognize the relationships of the objectives taught from course to course within a program, and develop a clearer understanding of relationships to real world phenomena (McKeachie, 2002). Prior to this endeavor, the graduate student had taken a course in instructional design devoted to the development of instruction utilizing various models of systemic instructional design. The purpose of the independent study was to not only create an online course, but to also provide the graduate student with some practical experience by utilizing the instructional design skills learned by taking on the role of an instructional designer with the assistant professor as the client.

The course text, syllabus with course objectives, teacher-assistant access to the learning management system (LMS), Educator by UCompass, and some preliminary design ideas were provided to the graduate student/instructional designer by the assistant professor/client. While the instructor determined the primary objectives for the course in advance, the graduate student as the instructional designer was given the freedom to develop activities, assignments and assessments based upon those objectives. Weekly meetings were set up for brainstorming sessions to discuss progress regarding course development. Major content revisions were made via e-mail, and a timeline was developed to ensure that goals were being met. A true partnership was formed; both the graduate student and the assistant professor worked together to establish a quality design for an online course.

Course Design

Through the weekly meetings, it was agreed upon that the course should have an enrollment cap of 25 students to ensure prompt feedback from the instructor regarding student progress. The course was divided into two one-week segments with each Sunday designated as the due date for the previous week's assignments. The remaining half-week was reserved for the final exam.

Educator has discussion forums, chat rooms, e-mail, a course material management system, announcement page, online quiz and examination dissemination, student file exchange and uploading functionality. Similar to other LMS's, Educator is customizable and has the ability to "force" students to a particular section in the course when logging on. "Packets," another function of the LMS, were used throughout the design of the course. A packet is a type of learning object that allows the course designer to "package" together groups of related learning objects. A packet was created for each day in the course and every packet followed the same template; reading assignments within the course textbook and links to related readings, assignments and activities for the day to include discussion forum topics and points for each assignment and activity, and the due date for each item. When students logged onto the course, they were forced into a packet and provided with the day's assignments. It should be noted that students also had the ability to access packets from the previous days and had the ability to access packets for the rest of the week, but not work into the second week. Students were able to exit the forced packet after viewing its contents. At the end of each week, students were forced into a packet containing an itemized checklist of the assignments due for the week. By Sunday midnight, access to course content for the week was turned off.

One of the results of the weekly instructional designer/client meetings was the implementation of virtual learning communities. The nature of many online courses revolves around discussion (Perrin & Mayhew, 2000). Students are required to sift through multiple threaded discussions and respond to those messages often feeling lost or overwhelmed within the mass amount of

threads produced by all the students in the class (Perrin & Mayhew, 2000). This method is not only time consuming, but it can also fail to achieve what the instructor had initially intended--thoughtful reflection and meaningful discussions. The purpose of the virtual learning community was to foster an atmosphere of peer collaboration through discussion and reflection, not to overwhelm the individual with the pressure of having to read the multiple postings that can be generated throughout the semester in a class with many students. Each community was comprised of no more than five students with the instructor placed in each group. Communities progressed throughout the semester together; individuals were responsible only for the discussion within their group. The instructor monitored discussions to ensure equitable progression of thought processes within each community. When the instructor witnessed dialog dramatically different in one group, the information was posted in other groups to share new ideas and thoughts.

The remaining half-week designated for the final exam involved a community peer review of educational technology topic related research papers. Each member posted their paper for review and everyone was responsible for reading and posting questions about the research; over a period of three days, a question and answer session about the research papers ensued. A point system was designed to provide points for questions posted (a minimum of three questions was required), author's responses to questions, in addition to the overall grade to the research paper which the instructor graded. The authors believed that a face-to-face orientation on the first class day was important in order to introduce students to the instructor, their peers, the course content and the LMS. A mandatory first class day meeting was held in a computer lab on campus. The purpose of this meeting was to allow students to log on to the course and become familiar with the LMS functionality, provide an explanation of the course design and assignments, and to meet their virtual learning community peers before going online.

Experience of the Reversal of Traditional Roles

Assistant Professor/Client

The experiences regarding the reversal of traditional roles for the assistant professor/client were positive. With no release time to develop a new course for online deployment, this endeavor provided an opportunity to have assistance in properly designing and developing an entire course before the semester began. The graduate student's instructional design skills and knowledge learned in a previous class helped to ensure proper instructional design methods were used in the course design. Another advantage from this approach was having a course designed from a student's perspective and the ability to view a course from the "outside looking in." Instructors can have unrealistic expectations of their students in regards to assignments and activities in order to learn the course content. Through the instructional designer/client brainstorming sessions and the graduate students' past experiences with other online courses, a learning environment was created that felt more like a small classroom. The small number of students placed in the virtual learning communities and the dissemination of the assignments and activities in small, manageable, organized "chunks" of instruction provided an environment so as not to overwhelm the students in the learning management system.

One of the goals for the role reversal was to allow the graduate student/instructional designer earn credit in the form of an independent study which was centered around experiential learning. Utilizing student-centered methodologies such as experiential learning requires a shift in an instructor's perspectives about education (Rallis, 1995). It was easy for the assistant professor/client to give up the element of control in course design and have someone else share in the design and development process, and as a result of this unique partnership a far superior course emerged. An implication exists that all developers of instruction, online or otherwise, could benefit significantly from receiving an outside critique of their course design.

Graduate Student/Instructional Designer

The experience regarding the reversal of traditional roles for the graduate student/instructional designer were equally as positive. This opportunity allowed the graduate student to put into

action theory learned in previous courses to build a foundation in the online course based upon a combination of her personal teaching philosophy, past learning experiences, and the concepts of Moore's (1989) theoretical framework of interaction in distance education. The graduate student/instructional designer did not have practical teaching experience and therefore relied upon past positive and negative experiences in other classes, both traditional and online, and from the knowledge learned throughout her graduate program to aid in the design of the course. Through her participation in online courses, she had been exposed to situations where the course design was confusing and more time was spent on trying to decipher assignments. As a result, she built into the design of this course ease of navigation, provided students with detailed information and guidelines regarding assignments, defined due dates, point allocation, and "help" notes to provide guidance on the LMS functionality.

Interaction among learners, content and instructor within online courses is important and was prevalent throughout the course. The graduate student/instructional designer's belief in the ability for individuals to reaffirm their knowledge and construct new meaning from the multiple perspectives shared within the community via peer interaction/communication was built into the design. Due to the shortened semester, asynchronous communication was the only form of communication selected. As a result, the discussion board was heavily used to help facilitate learning and interaction in the virtual learning communities. Finally, the graduate student/instructional designer created diversified daily assignments in order to keep students engaged. Because the content of the course focused on learning, instruction and technology, assignments were created to encourage learners to further explore and reflect upon the web tools and the features within the LMS, such as the chat room, email, and discussion boards that might be useful in their future classrooms.

Lessons Learned

Assistant Professor/Client

Lessons learned usually indicate there was an unforeseen problem and advice is provided on how to avoid the situation in the future. That is not the case in this scenario and this situation is unique in that the student was receiving course credit; however, there are potential risks involved. Namely, selecting a student with the technological skills, understanding of instructional design theory, and enthusiasm to take part in this type of endeavor. The student must be dedicated, serious, innovative, self-directed, and enjoy working in collaborative situations. It is recommended that guidelines be established outlining expectations in the form of a contract between the student and faculty member if this type of partnership is to be implemented. Also significant in this situation was the graduate student's exposure to instructional design theory. If students are to take part in the design process for online courses and have not had exposure to instructional design, additional training and/or resources must be provided to educate the student on instructional design and distance education.

At many institutions, the concept of "release time" is not a reality. Developing a course or program that utilizes graduate students trained as instructional designers for course credit to work in tandem with faculty willing to teach online could be implemented. Graduate students would serve as change agents and train faculty on how to utilize the university's LMS to design a quality course in lieu of faculty being tossed into online teaching without 1) reward, 2) release time, and/or 3) assistance. Assistance from a graduate student/instructional designer potentially serves as all three.

Graduate Student/Instructional Designer

This partnership accomplished the original intent by the authors; provide a learning opportunity grounded in authentic experience to teach a graduate student not just the content in a course needed to graduate, but to enable her to synthesize programmatic material. Theory and content taught in previous courses became more than just reading material; it was put into practice. This experience helped to validate the graduate student/instructional designer's philosophy in three areas: The value of learning communities. Life-long learning is a challenge faced by learners in

the Information Age; it is a task that requires determination and self-discipline. The role of the virtual learning community was not only to facilitate information exchange but to also provide a support structure for camaraderie and encouragement among learners. The value of diversity. As an international student, the graduate student/instructional designer is in strong support of diversity. The value of diversity relies on the experiences shared by individuals and the inspiration ignited through that sharing. The opportunity to contribute past experiences and knowledge via the creation of an online class was invaluable. The authors both learned from and inspired one another from this experience. The value of technology utilization. A variety of approaches to teaching and learning that instructors can take in an online learning environment were discovered. Having teacher-assistant access to the LMS enabled the graduate student/instructional designer to explore the functions usually only reserved for instructors, such as creating quizzes, exams, discussion groups and packets.

Course Content

And lastly the course content was mastered through the preparation of the materials for the online class. The course content covers the proper selection of methods and media for learning. Reading through the course material enabled the graduate student/instructional designer to make informed decisions about the course assignments and activities being created for her peers. Practical experience was gained in each aspect of learning, teaching, instruction, instructional design and their relation to one another. McKeachie (2002) states that “actual experience can link learning, thinking and doing...field experiences will not only motivate students to learn current course materials but also increase their intrinsic interest in further learning” (p. 246-247). This experiential learning experience provided the graduate student/instructional designer with the opportunity to integrate knowledge and transform learning into practice.

Student Perceptions of Course Design

While the primary focus of this article is to discuss the experiences of the reversal of traditional roles between a faculty member and a graduate student in creating an online course, it is important to discuss the information gathered to assess student satisfaction with the quality of the design of the course. An anonymous, short, multiple-choice/open-ended question survey was developed and disseminated within the LMS at the end of the semester. Multiple choice questions with responses ranging from strongly agree to strongly disagree, asked whether or not the methods and media used in the course helped the student comprehend the authentic learning content, practice critical thinking skills, transform learning content into personal knowledge, perform problem-solving skills, and interact with their peers and the instructor. The open-ended questions asked students to provide their opinions on the course design and to indicate what changes they would implement.

Student responses to the multiple-choice questions were overwhelmingly positive in response to the methods and media utilized in the course. All students either strongly agreed or agreed with the methods and media utilized in the course. Student responses to the open-ended questions indicated that the course expectations were clear and the online format and assignments provided opportunities for more collaboration, flexibility and meaningful learning. They believed that the overall design of the course was clean and easy to navigate, and their experiences within their virtual learning communities enhanced the learning experience. The following are a few comments from the students enrolled in the course.

I really like the online course. I seem to get a lot more out of the class as opposed to face-to-face courses. There is more access to the instructor on a one-to-one basis. Students seem to be more willing to help each other in this class setting. I especially like the group work in online as opposed to face-to-face classes.

All assignments are designed with students and distance learning study format in mind and fit individual schedules. I liked the organizing format of this class.

This is my first course online and I have loved it. I enjoy the flexibility to work when I can and I learned a lot of technology skills that I needed to learn. I have really enjoyed the comments from my group members; they have provided very valuable information to me.

I liked the discussion group forums and replies. Having to compose a thoughtful reply/evaluation or critique causes me to think about the item in question. When I read the replies, I had several new takes on the subject. My ending opinion broadened.

Summary

Results from the survey and open-ended responses from the students indicated that the goals the instructional designer/graduate student and the assistant professor/client were striving to achieve were successfully accomplished by reversing traditional roles. Minimal changes in the form of grammatical edits were made to the course created by the instructional designer/graduate student; therefore, feedback received by students regarding course design targeted a course created by their peer, a fellow graduate student. Feedback received from the students enrolled, indicated the course was well designed with a high degree of interaction among peers, instructor, and content. The graduate student truly learned the course content needed to graduate via course creation. And finally, in response to the question of how to optimize instructor time and student learning through the administration of online courses, the concept of release time and/or reward for course design was realized via the instructional designer/client relationship. Institutions of higher learning could utilize students with technological and instructional design skills to aid faculty in course development and potentially ease the many frustrations and/or fears experienced by faculty when developing an online course.

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Virtual Citizens: Online Service Learning

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Introduction

In a post-Enron age, where Fisher-Price and Mattel have recalled millions of toys and mortgage companies are foreclosing on thousands of sub-prime loans, university faculty have begun to consider how we can teach students corporate citizenship and ethical work practices. One pedagogy that instructors across disciplines employ to help students develop a sense of their emerging roles as citizens is service-learning. While many instructors in workplace writing courses (such as Business Writing or Technical/Scientific Writing) have integrated service-learning into their courses, this has been a difficult pedagogy to translate into online courses. As a course developer and an instructor of online Business and Professional Writing, and as composition scholars, we explore one way to successfully usher service-learning into the online classroom.

We sought such integration of service with online learning because of the fruitful record of such pedagogy in developing students' global citizenship, a goal increasingly re-gaining currency in both service-learning and rhetoric circles—as well our university's oft-quoted mission statement: "To educate students for Christian service and leadership around the world". The ethical consequences of one's use of rhetoric have never been completely divorced from professional conversations, but in the past few years, such concerns have resurfaced, often bringing discussions of service-learning with them.

An early call for students to enter the public sphere was Susan Wells's "Rogue Cops and Health Care: What Do We Want from Public Writing?", which beckons local, applied solutions to problems wrought by public fragmentation. Ellen Cushman's "The Rhetorician as Agent of Social Change," together with her later "The Public Intellectual," highlights the advantages of writing students' conducting "activist research" to see their writing at work and cause change in their communities. This emergence of public inquiry and activist service within composition circles at the turn of the 21st century corresponded to the larger movement of English departments toward social critique, as argued by John E. Bassett, who notes, "English . . . must remain at the center of an educational practice that helps students make connections among the things they learn and become the kind of citizens who want to learn and to change after they have left our colleges and universities" (332, emphasis added).

More recently, in *Moving Beyond Academic Discourse*, Christian Weisser argues for a more realistic, postmodern understanding of the Habermas's "public sphere," and the consequences such updated understandings can mean for academics and students. Weisser writes

Our work can dramatically affect the individual lives of those we come into contact with and can have valuable and significant effects in our communities in general—as long as we do not assume that these changes will occur overnight or that they will necessarily affect society as a whole. (123)

Weissers's work argues for local, individualized, grassroots efforts between institution and community, service that does not affect large numbers in big sweeps, but smaller enclaves in small, meaningful encounters. He bolsters the claim that service from the university—both in service-learning pedagogy or through volunteerism—need not be on a large scale to be effective. With respect to the private Christian university in particular, John E. Hare explicates the merits of reconsidering the “vertical line” of moral education for both students and community in “Kantian Moral Education and Service-Learning.” Hare boldly addresses the possibility that Dewey’s idealism has failed education, and that recasting explicitly the moral trappings of service-based education can bring back the ethical dimension of this pedagogy. In sum, service-learning scholarship, especially when centered in rhetorical milieux, finds itself always already connected to established conversations of citizenship and ethics; this is a tie we seek to exploit in this integration of community service in online education.

Benefits of Online Writing for Online course developers and instructors are aware that online teaching environments are rich arenas for teaching diverse student populations and integrating rhetorical theory. We have learned, too, that the online environment requires different pedagogies than f2f classes. One cannot effectively take an f2f class and force it into the parameters of Blackboard, WebCT, HTML or any other online delivery system. While the learning outcomes may be the same for both types of courses, the content, delivery, assignments and assessment must be transformed to meet the needs of students, instructors, and technology.

The benefit of the online environment for workplace writing classes is that the communication features of the class (discussion boards, blogs, chat, etc) create a space for meta-discourse. Unlike many face-to-face environments, the online environment inherently creates a medium for students to distance themselves from their writing and the writing of their teams to reflect on the skills used. In breakout groups or as a whole class they can discuss the nature of their audiences, brainstorm a specific approach they plan to use in a specific document, or analyze the context of the rhetorical situation. The asynchronous online environment actually allows more time for reflection and discussion than the rapid-fire discussion of the f2f class. It also creates a written record of the meta-discourse for the writer, the team, or the instructor to return to as they craft and revise documents. Another benefit of online environments for workplace writing courses is that they model neo-professional environments that many students will encounter when they leave the university. Contemporary workplaces expect employees to collaborate with people all over the globe and to use communication tools like those employed in online courses to create correspondence, proposals or presentations collaboratively.

The Pedagogical Importance of Service-Learning

However, online teachers and developers know that certain strengths of the f2f class are difficult to translate to an online course. Service-learning is often one of the first f2f strategies to be discarded when developing online workplace writing courses. Yet for many instructors of these courses, it is the biggest loss. Service-learning is an important pedagogy in the writing classroom because it usually requires that students expand their rhetorical audience considerations beyond the teachers who will grade their texts. In many cases, community-based projects provide the first opportunity for students to create documents that leave the boundaries of the classroom or university. Regardless of how many times instructors stress audience awareness and analysis in a traditional setting, students often have difficulty writing beyond the known entity of the teacher and grader; writing for “real” audiences outside the university community, however, encourages students to change their mindsets and consider the needs and constraints of those audiences. Service-learning also helps students see the cause/effect relationship of their writing. A team may create a fundraising letter to help

the Boys and Girls Club offset gas prices and rising public transportation costs, and by the end of the semester, see that the Club has raised enough funds to cover bus passes for all of their members for the next three months. Such assignments foster a sense of accountability for students and their writing; a letter, flyer or brochure is no longer something to be turned in and crossed off the syllabus, but a document to meet a specific need of a specific organization at a specific time.

Finally, service-learning works to create a model of corporate citizenship. When students interact with and work for local non-profits, they become aware of organizations beyond the mega-corporations (whom they know from the news and their own shopping habits) and see how those non-profit organizations participate vitally in the local community. Students thus use writing to participate in a larger effort to improve their community rather than creating documents with the purpose of merely creating revenue for companies.

Transforming Service-Learning Online

Online courses are increasingly serving not only students who have full-time jobs and different work schedules, but also students who live far away from the campus. At our university, the online workplace writing course is offered during the summer term and serves students who have gone home for the summer or are traveling, often internationally. Transferring a traditional service-learning model to an online class, then, is difficult because students working on the same learning teams live in different geographical locations from both each other and their non-profit organization. It becomes difficult – if not impossible – for students to serve and interact with a local agency. As well, learning teams must also function in an asynchronous communication environment to create documents. Even as students have access to chat and unlimited mobile phone minutes, work schedules and time zones make synchronous interaction difficult.

As with any pedagogy, online course developers and instructors must adapt service learning to fit the online environment. For the past three summers, we have taught two service learning modules in Online Business and Professional Writing. Before the course launched the course developer and the Director of the Volunteer and Service Learning Office at our university chose three local non-profits with which to partner. Our primary criterion was that the agencies have both a local and national presence. We wanted students to be able to research and perform audience analyses via local and national websites and possibly the presence of that organization in their summer location. We chose the United Way of Abilene, Boys and Girls Club of Abilene, and Big Brothers/ Big Sisters of Abilene.

The course developer also selected the types of documents that students would write for these organizations – a fundraising letter and flyer. These documents were chosen because they were easier to handle in an electronic environment (we were concerned that brochures and other more complex documents would not translate well between students', instructors' and non-profits' software) and because they met two outcomes for the course: students would demonstrate an ability to write persuasively and students would demonstrate an understanding of basic design principles. Before the course began, the course developer negotiated what each agency wanted from these documents – what the students would be raising funds for and what they would be advertising through the flyers. As the service-learning modules open, students first learn about the

agencies, not through service in the agencies, but through researching their local and national websites. All students then write proposals to their instructor arguing which agency they are most qualified to assist, after which they are assigned to teams of 3-4 classmates and are given a letter from the agency stating the writing needs. Because they are able to participate in selecting the agency, students are often more invested in the task. Students then collaborate on the documents creating one fundraising letter and flyer from each team. Though the teams are assigned by the teacher, they share interests and motivation because they were able to request the agency they felt the most commitment to.

Since this a multi-section course, there are often 10 or more teams working on documents for one agency; this can yield tremendous benefits. Because the course developer has completed much of the legwork before the course begins and remains the contact person for the teams, agencies that are already understaffed and overworked are not bombarded by 30 or 40 students. Yet at the end of the modules, the agency receives multiple documents for the same rhetorical situation and can choose the document(s) that best fit their need at the moment. Furthermore, this model allows instructors to cull documents that are sub-standard and don't represent the university well. At the end of the semester, students are asked to reflect on their service-learning experience and how they met course outcomes through the project. In a cover essay that accompanies the final portfolio of revised work, each student must include several paragraphs that address the community-based aspect of the course. We offer writing prompts for the student to consider that encourage the synthesis of his or her concepts of community, non-profit writing, citizenship, and service within a scholastic setting. In successful cases, students report a heightening of awareness of the needs of the local non-profit sector and/or a greater understanding of their roles as corporate citizens. Occasionally, a student will even report an intent to aim professionally for the non-profit business world upon graduation.

The design of this assignment corresponds to the model Thomas Deans terms "writing for the community" in his definitive *Writing Partnerships: Service-Learning in Composition*. Such real-world writing projects, Deans argues, goes beyond standard business or technical writing tasks, and "foreground an ethical commitment to community needs and to reflection on service and social justice" (54).

Why Online Service-Learning Works

The execution of this online model of service-learning fits well within established service-learning theory and best practices (for a productive synthesis of recent scholarship, see Laura Julier's "Community Service Pedagogy" in *A Guide to Composition Pedagogies*, pp. 132-148). First, the students are producing documents that help instructors meet the learning objectives of the course—letters and flyers that are audience-specific, persuasive, visually appealing, and perfectly edited. Second, these products fit a real need in the community; the non-profit organizations listed above report an ongoing paucity of volunteers and funds, shortages for which these documents directly solicit solutions. The design of this course places the final destination of our students' work beyond the walls of the academy, directly into a community context where, in the classical tradition of Isocrates, Cicero and Quintilian, their written artifacts can rhetorically effect a better society for all.

In short, the positive symbiotic relationship among all parties is reciprocal, that is, each party involved must have input from the very beginning stages of planning to execution and follow-up. Such inclusive participation at each level avoids an unbalanced power relationship that can often obtain when one partner places its goals ahead of another, as

well as manifestations of noblesse oblige that can easily surface if unchecked. In our case, we sought early input from the community partners to understand what kind of professional documents would assist them in their efforts to adhere to their own missions. We then devised assignments that would clearly lead professional writing students to a place of critical challenge, providing real audiences with real needs that could be served by their efforts. Finally, we deliver the written products to the non-profit organizations at the end of each course cycle, intending that they will find useful additions to their own in-house marketing materials.

An important difference between online and f2f instruction is that the research for a suitable community need, as well as a selection of appropriate responses to it, has already been conducted and front-loaded by the course developer by the time the course begins. This allows the instructors and students to immediately plunge into the projects with creative abandon and to spend more time and energy crafting documents in the neo-professional environment that will align closely with their writing futures. Hence, it becomes important to inform students that the array of service-learning assignments have resulted from copious early research, multiple conversations with agency representatives, and a shared understanding of aggregate needs between the university and the community partners. Taking time to make this point will prevent students' from mistakenly viewing the service-learning assignments as mere add-ons without thoughtful context.

Conclusions

While service-learning in an online environment is not a perfect pedagogy – students do miss out on the opportunity to serve in and interact in the agencies in person – it can be effectively transformed into the virtual classroom. In addition, the online classroom has unique benefits: because students perform audience analyses and consider the purposes of the documents through discussion boards and chat before they even begin, the instructor can, if necessary, become a participant in the meta-discourse as students plan their documents and help them craft the documents more effectively. Students experience the audience awareness and accountability found in writing for audiences apart from their teacher. They become familiar with the constraints and difficulties of writing in non-profits, and non-profits that are often overworked receive assistance. Ultimately, online service-learning helps students to begin to understand their responsibility as citizens.

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Cooperative Learning in the Online Classroom

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Introduction

Cooperative learning is the process of acquiring knowledge or skills through interactions among members of a group working together toward a common goal. Bruner (1984) describes learning as a process, which takes place as a result of social interactions within a group. Vygotsky (1978) emphasizes the importance of group interactions in the development of cognitive skills. Driscoll (2002), in her analyses of the way people learned, contended that learning is social and contextual. Much of the research published on the use of cooperative learning in the online classroom focuses on teachers' perceptions and experiences with the use of cooperative learning in this medium (Dettori, Giannetti, & Persico, 2006; Kearsley, 2000, Wang & Fang, 2005). However, there is very little research on the perceptions of students who participate in the online classes about the use of cooperative learning activities (Fakas, Nguyen & Gillet, 2005; Riley & Anderson, 2006).

Online students who participate in cooperative learning activities learn as much, if not more, from each other than as they learn from the instructor and/or from the course materials. Rowntree (1995) supports this notion by stating that, "The learning becomes not merely active . . . but also interactive" (p. 207). The authors study the role that experience in using cooperative learning in the traditional classroom plays in participants' acceptance of the use of such activities online. They also investigate the influence of participants' familiarity with the technology used in the course on their perception of the use of cooperative learning in the online class.

Literature Review

Conard and Donaldson (2004) described online cooperative learning as a rich environment in which activities required students' interaction, sharing of ideas, and promoting of deeper level of thinking. Salmon (2001, p. 91) argued that students working in cooperative settings online became responsible for their own learning. She contended that, in this setting, "different skills come into play," the most important of which are critical thinking skills and challenges to the "givens." Salmon pointed out that this practice fit the constructivist approach of having students develop their new understanding of concepts by relating them to their already acquired knowledge through a process of negotiation of meanings with group members.

Driscoll called for educators to take advantage of technology to increase participation in social learning communities to promote knowledge building, apprenticeship, and mentoring. She shared the results of her study which demonstrated that graduate students who participated in online, social learning activities tended to outperform those who did not participate in such activities. Choi, Land, and Turgeon reported similar results in their investigation of the effects of the use of small online groups' discussion on students' learning (2001). Hsu reported significant improvements in students' literacy skills in the EFL class after participating in online, cooperative literature circles (2004).

Riley and Andersn (2006) studied the effects of cooperative learning on cognitive outcomes in a public health graduate, online education course. They reported significant positive effects for cooperative learning when compared to independent learning on participants' cognitive skills

such as problem solving and strategic planning. Wang and Fang (2005) conducted a study on the effects of cooperative learning in the online class on the learning process. They reported great benefits to students; learning skills such as autonomy, positive interdependence, individual accountability, groups processing, social skills, and time management. Their students expressed the need for face-to-face meetings despite their satisfaction with the course. McKeachie and Svinicki (2006) highlighted the benefits of collaborative learning for online courses. Holmes and Gardner (2006) stated that, "one of the most powerful factors in promoting learning is this contribution to discussion and collaboration with others who are working towards the same goal"(p.7). Chen, Wu, and Yang stated that, "Electronic learning (e-learning) provides the potential for a more differentiated, and open learning experience" (2006, p. 112). They argued that richness of the online medium benefited cooperative learning. Benson et al, (2002) contended that online cooperative learning classes provided students with varied learning styles with an environment in which they could model and practice critical thinking skills.

Based on many years of traditional public school practices, which did not encourage collaboration among students, cooperative learning was not an easy approach to implement among students in higher education (Draves, 2000; Palloff & Pratt, 1999, 2001). Students felt more comfortable playing a passive role in which they listened to the teacher, took notes, wrote papers, and took tests. Having to participate in collaborative settings forced the students to take risks and take charge of their own learning (Fakas et al., 2005; Kearsley, 2000; Riley & Anderson, 2006; Simonson, Smaldino, Albright, & Zvacek, 2000). These are skills which educators strive to foster in their students.

Methodology

Participants in this study were twenty-eight graduate students enrolled in two graduate, online classes in curriculum as part of a Master's degree program in curriculum and instruction. The students met face-to-face three times during the semester. All class and project activities were carried out online. The participants consisted of nine male and nineteen female public school educators. Among them there were seven African American teachers, while the rest were Caucasian. Their ages ranged from twenty-two to fifty-one. All participants were teachers or administrators in public schools (K-12) in the southern United States. Their teaching experience ranged from none to twelve years.

The students were divided into groups of three to five members. Each group was assigned a comprehensive project which required collaborative group efforts. Group members were to establish the ground rules for their group, assign roles, negotiate assignments, and agree upon a time table. Group members were to keep constant communication with each other while the teacher monitored group activities online. The teacher acted as the facilitator for all groups. The participants were given a questionnaire at the end of the course during which they had been involved in a comprehensive cooperative project. The questions elicited the participants' perceptions about the use of cooperative learning in the online classroom. The questions asked participants about their past experience with cooperative learning online or in the traditional classroom, past training for cooperative learning, aspects of online cooperative to change and those to keep the same, and advice to future students on the same type of cooperative learning task. Student responses were coded both numerically for analysis in SPSS and in text form for qualitative analysis. The quotes from students cited below are drawn directly from student survey responses.

Results

Data from respondents' surveys were recorded; and answers to the questions about participation that they found most difficult, participation that they would change, participation that they would keep the same, and advice to future students in online cooperative learning situations were clustered into groups by meaning without regard to individual wording. Each cluster of comments was then coded numerically, and all the data were entered into the Statistical Package for the Social Sciences (SPSS) Version 13.0.1.

Among the 28 respondents, 16 reported some previous training and experience for traditional face-to-face cooperative learning; 12 reported training and experience with online cooperative learning. Fourteen of the students had no training at all, while six had fewer than 10 hours: 20 of the 28 students, therefore, had little or no training and experience with cooperative learning. Some survey questions also elicited the students' perceptions of the quality of their previous training in cooperative learning. More students (42.9%) expressed their greatest difficulty with the online cooperative learning tasks as the need to rely on other students. "Coordinating schedules to meet or talk to group members – and giving up control to someone else. It is very unnerving to know your grade is dependent upon others" (Student #4). The greatest difficulty was "[g]etting classmates to take the project seriously. One of our group members submitted her questions at the last minute, and another one submitted no questions at all. This placed a heavier burden, at least psychologically, on the remaining two members of the group" (Student #20).

About 53.6% of the respondents commented that they would keep all components of the online cooperative learning experience except the specific component that they indicated to change. For example, one student wrote, "I think that one of our class meetings should be totally devoted to working with our group members – each member should be required to attend" (Student #1). Other than an "on-going conversation" with the group, "I think everything else was fine" (Student #5). The class should "discuss the assignment more... but I would keep everything else the same" (Student #23). Respondents offered three primary pieces of advice to future participants: increase the contact among cooperative learning group members (10.7%), work at the group task every day (35.7%), and set group ground rules as early as possible (53.6%). "Students should start early and set some ground rules for the group discussion. People need to come to a consensus on procedures for the group" (Student #15). "Contribute daily. This will keep [students] from getting behind. Also, set deadlines and stick to them..." (Student #19)

In order to determine differences between definable groups, t-tests for independent samples were run on the responses to the four key questions, grouped by those who had traditional cooperative learning experience compared to those who did not, and by those who had previous online cooperative learning experience compared to those who did not. The data revealed a significant difference ($p = .045$) between students who did have experience with cooperative learning in the traditional classroom as teachers and those who did not in their responses about what they would choose to keep the same in the course. Students who had previous experience with cooperative learning in traditional classrooms overwhelmingly (11 out of 16) recommended that everything but one varied detail be kept the same, while students who had no previous experience with cooperative learning in traditional classrooms recommended equally (4 each of 12) among these three modifications: changes to required activities, changes to group structure, and changes to everything but one varied detail. The students had differing views on what needed to be changed in the cooperative project. Six students indicated that no change needed to be made, while twenty-one of them indicated one aspect of the activity to be changed. One student didn't provide an answer to this question. Thirteen students wanted more face-to-face class meetings. Other students' responses included requests for more discussions or fewer discussions in the whole group; clearer guidelines for the group activities; different group configurations; or voting on the group project.

One-way analysis of variance (ANOVA) with Bonferroni post hoc tests were run among groups by hours of previous training in cooperative learning techniques. A significant difference ($p = .042$) appeared among groups of students by the number of hours of training they had previously completed about the component of the course that they found most difficult: specifically, the most significant difference occurred between the groups with 1-10 hours (reliance on others) and 11-20 hours (lack of face to face) of training ($p = .033$). Significant correlations but no significant regression relationship occurred between the component that students found most difficult and the component that they wanted to keep the same ($p = .044$) and between the component that students found most difficult and whether they reported previous experience with

online cooperative learning ($p = .043$). There was, therefore, no predictive relationship among these survey responses.

Discussion

The results of the study demonstrated that students' familiarity with cooperative learning and the technology used in the course had significant effects on their attitudes toward the use of cooperative learning online. Data analyses revealed that the hours of cooperative learning training students had had in the past correlated significantly with their acceptance of the use of this method in the online classroom. Students who had experience/training in cooperative learning had more positive attitudes toward its use in the online classroom and reported less difficulty working with others. One student stated, "I think that the current assignments are appropriate and completely 'do-able' within the context of an online class" (Student #3). Student # 7 expressed a similar notion by stating, "I do not always enjoy cooperative learning. In this case however, I found the experience both interesting and productive. Everyone in the group participated and we came up with a good product that was the result of our collaborative effort."

Conversely, students who had had little or no previous experience in cooperative learning had negative attitudes towards the use of cooperative learning in the classes and reported more difficulties, the most paramount of which was "having to rely on others." Student # 11 commented, "I found the interaction between groups to be the most difficult aspect of this particular activity." It stood to reason that the authors found that students with online classroom experience had fewer complaints regarding their work in cooperative settings online. This could be explained in terms of students' comfort level with the medium used and their knowledge of the tools available to them in the class. Those who did not have previous experience with online classes found the experience overwhelming. Even though the instructor explained all aspects of the class, demonstrated the capabilities of the website and tools of communications at their disposal in the initial meeting, allowed students ample time to become familiar with the course website, and engaged students in several warm-up activities, many of the students who had had no prior experience with online classes still found the medium frustrating at times. Those students who had little to no experience with online classes commented that the most difficult aspect of the experience was communicating with others. When asked to describe the most difficult aspect of the project, one stated, "Waiting on someone to post or e-mail you back is difficult- so often I would just pick up the phone and call." Another student answered by saying, "not being able to communicate directly with the group," while still another said, "the difficult part for me was not being able to see the persons with whom I am speaking." It must be noted that none of the students chose to use the virtual classroom to see each other using the web camera and microphone despite teacher instruction and encouragement. When asked what they should change in the future to improve the course, the majority of students who didn't have experience with online classes indicated that more time should be dedicated to face-to-face meetings for cooperative groups.

It was interesting to note that over 70% of students, all of whom had a degree in education, had had little to no experience with cooperative learning despite the plethora of research published in the last fifty years on the advantages of cooperative learning. This supports the findings of earlier research on the lack of wide-spread implementation of cooperative learning in traditional educational settings (Kearsley, 2000; Simonson et al., 2000). The authors recommend that those in charge of teacher training must provide more opportunities for future and current teachers to master the use of cooperative learning in the classroom. Further, in order to accommodate graduate students who already work in the field and who no longer have access to teacher preparation programs, instructors of online courses begin with extensive training and practice for cooperative learning procedures, including but not limited to roles to be assigned, communication techniques, and responsibilities to the cooperative learning group.

Conclusion

Learners work together to maximize their own and each other's learning in cooperative settings. However, such settings are rarely offered to students in traditional educational environments as it was demonstrated in this study by the small percentage of students who reported previous experience with cooperative learning. The authors studied the impact of students' previous experience with cooperative learning on their perception of its success in the online class. The authors concluded that students' previous experiences with cooperative learning and technology in the classroom had a significant impact on their attitude toward the use of cooperative learning in the online classroom. These results supported earlier findings from studies by Driscoll (2002) and Wang and Fang (2005). Educators in the online classroom must invest time and effort to familiarize their students with the medium and the technology used in the classroom.

The authors recommend that students, especially those students with no previous cooperative or online learning experience, be involved in extensive warm up activities that help to reduce their anxiety toward the medium and toward working with others. Instructors should not only set guidelines for working in groups online, but make sure that students follow such guidelines. In this study, the instructor established guidelines but trusted the students to take charge and be self-directed in their efforts. The students' responses demonstrated that students with no previous experience in cooperative learning had a much harder time in their efforts to start the project, to establish individual responsibilities, and to adhere to their plans without the instructor's monitoring and prompting.

Baudin, Drira, Villemur, and Tazi (2004) contended that e-learning environments provide tools to foster positive interdependence among learners. Röse, Urbas, Künzer, Christofkindsmüller, and Leuchter (2004) asserted that learners need to be highly motivated to build an online learning community in which collaborative work is most effective. Riley and Anderson (2006) contended that with the dramatic rise in distance education delivery, instructors face the challenge of loss of traditional communication. They argued that cooperative learning helps "mitigate or compensate" for such loss of communication by increasing the interaction among learners.

Online instructors must be aware that such classes offer many challenges for their students, which are not limited to technology as was evidenced in this study. Nevertheless, the online classroom still offers instructors great opportunities to use different methodologies that may not be possible in the regular classroom. For example, the project assigned in this course – to design a whole school curriculum – wouldn't have been possible within the constraints of time and space of the traditional classroom. It is the authors' recommendation, based on the students' responses to the questions in the survey, that teachers of online courses must receive training in the use of cooperative learning in these classes if participation in such activities will be required for such classes. Students in such classes need more direction, monitoring, and facilitation than in the regular classroom. The lack of very structured activities in such classes can easily lead to frustration among students who struggle with the medium or with the collaborative nature of such assignment.

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Online Strategies for Military Cadets

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Introduction

The NDUM is the only tertiary military institution in Malaysia and it offers seven engineering undergraduate degrees. As the premier undergraduate training centre, its educational programmes must ensure the production of talented military officers. The question addressed in this paper is how best to train cadets in order for them to acquire the right skills for a 21st century military with independent and critical thinking amongst the crucial skills. The data for this paper were gathered using interviews with teaching staff and observations at the NDUM. Where appropriate, comparisons with the United States Military Academy, New York (West Point) were made because it has a pervasive computing environment and it is also a military academy.

Online learning has the potential to offer a truly student-centred approach to the learning process since it can be of design rich, can be fully customisable to take full advantage of each individual student and is capable of delivery anywhere and at any time (Zemsky and Massy 2004). The Malaysian Armed Forces (MAF), which is the parent services of the NDUM graduates, has taken the steps to enhance the learning environment at its training institutions by investing in online programmes for the personnel. This is in hope of nurturing Information Communication Technology competency in the workforce and as part of the planning for Vision 2020 (a Malaysian government plan) in which one of the challenges outlined is to establish a knowledge-based society. The knowledge-based society demands new and better ways of learning while taking into consideration the advancement of technologies (Norsaidatul Akmar Mazelan, Harnevie and Valida 1999).

Benchmarking against other military academies' experiences such as West Point which have proven that the best approach to educate its cadets is through a blended medium between face-to-face sessions and a technologically supported medium of online strategies, the NDUM may need to consider the same alternative. What can be learnt from the West Point experience is that it is very strict about its face-to-face sessions because West Point believes that cadets can benefit significantly in these sessions (Juhary 2007). From there, cadets can pursue their revision and exploration using digital technologies at their own leisure. Should the NDUM have a similar model to West Point's learning approach?

The Learning Environment at the NDUM

In justifying the needs for online technologies at the NDUM, it is first necessary to assess the characteristics of its present learning approach and environment. Currently, the NDUM only employs an face-to-face method with the exception of the Nautical Science Programme (see the second half of this paper). The face-to-face method is primarily based on behaviourist principles to learning since all features in the classrooms originate from them; for example the lecturers are the providers of knowledge and cadets are passive participants in the classes (see Observation Notes below). The only technology used is the overhead projector. The lecturers at the NDUM utilise predominantly white board and marker pens to teach cadets.

Furthermore, because the number of cadets in one class is around 25 to 35 for tutorial sessions and can be up to 150 per lecture session, the use of online strategies as a support system may be worth the effort, cost and time effective in the long run. The differences with West Point classes are that West Point has a maximum of 18 cadets per class (an average of 12 cadets per session) and the physical arrangements, that is, a three-sided square arrangement and blackboards on all four walls, are also different to reflect the number of cadets (Juhary 2007). Another difference is that the overhead projector is not the only technology available in West Point classrooms; there is a wide range of technologies supported by wired and wireless Internet connection in West Point classes (West Point Webpage 2007).

Observation Notes

What actually happens in classes at the NDUM? If cadets failed to achieve good results, would that be because they have inadequate facilities, poor quality of teaching or poor quality learning environment? What is the learning and teaching framework?

It is observed that even though facilities in the classes are lacking in terms of teaching aids, cadets can still learn. This is where teaching skills of the lecturers become important. It is difficult to discern quality teaching at the NDUM since there is no one single approach that can be claimed supreme. In terms of measuring the learning and teaching framework, the author outlines two criteria based on the methods of teaching and kinds of activities in the classes. It is found that most lecturers use tell and test method. This method is used especially in lecture sessions and tutorial classes. For example, a lecturer explains a mathematical concept; each cadet then tries to solve a mathematical problem and after a while one cadet will be asked to give the answer. If the answer was correct, that was the end of it and if it was wrong, then another student would be asked to give the answer. Further, the activities in classes are categorised as passive activities. Cadets are to find solutions individually or in groups. Interactions are only limited to cadets in their small groups and between them and the tutor. The activities are often the same for discussions in small groups and presentations of the solutions in front of the class. Feedbacks given by the tutor and cadets were often very limited.

It is vital to argue who initiates this environment – the lecturers or cadets themselves. Some lecturers try very hard to introduce a variety of learning activities but the attempts fail because cadets refuse to take up more challenges in their learning process. Some cadets appear eager to try new methods of learning such as the use of CD-ROMs, interactive multimedia and other online strategies but then they are hampered by the lack of options for independent learning.

The Nautical Science Programme

It is essential to examine the only academic programme that has online strategies at the NDUM. This assessment can provide a sample study for the NDUM in justifying its needs for digital technologies for all academic and military programmes. The Nautical Science Programme is a specifically designed programme for the seamen or the future navigators of the Royal Malaysian Navy (RMN) ships. The intake for this programme has been very small during the early years of the NDUM. However, the intake has increased tremendously from 10 cadets in 1998 to 180 in 2006. The main reason for this increase of intake is the establishment of four Computer-Based Training (CBT) laboratories and one simulator. M. Radzi, a teaching staff at the NDUM (M. Radzi, Z., personal communication: interview, March 29 2006), indicated that cadets in this programme must be taught with these new tools:

In this academy, our programme is the only one that uses e-learning [computer-based training – CBT] and simulation technologies. It is very important for our students to

have these two tools. Firstly, if we want to be effective and efficient in teaching and learning, we must have the CBT and simulators. This is because students cannot visualise the problems and tactical aspects of navigation. Secondly, the accreditation for seamen or ship navigator requires that students are taught using the CBT and simulators. The facilities must be validated and certified by Standard of Training and Watch Keeping Certification 1995 [or STCW 95]. This is a world standard certification. Even terminologies used are standardised. Thirdly, students will face problems on board real ships if they are not trained and taught first using the CBT and simulators. Students must be exposed to the CBT and simulators [first] and gain some sort of level of competency before being allowed on board a ship.

M. Radzi is supported by Muirhead (2003) who stresses that the CBT laboratories will help trainees to understand crew safety and to give familiarisation training required under STCW 95. Given the fact that cadets in the Nautical Science Programme will be navigating the RMN ships in the future, the use of online technologies is inevitable. Nonetheless, the cost of four CBT laboratories and a simulator is high. According to M. Radzi, the whole project costs almost RM1 million. It took him and his committee about two years from 2002-2004 to prepare the proposal and find the right supplier. The budget came from the NDUM's budget but, because it was not enough to complete the whole project in one year, the financial support has to come from two years allocation of the university's budget. M. Radzi further clarified that the approval for budget and specifications come from the Science and Technology Research Institute for Defence (STRIDE), the Ministry of Defence Malaysia's division for defence technology and research. At present, the whole project is just 60 percent complete but this is adequate for the certification by STCW 95. Otherwise, cadets in the programme will not be validated and certified to navigate ships.

The hardware and furniture in the CBT laboratories and simulator are locally made and customised. However, the database and software came from Germany because of the similarities to Malaysian shores and ports. This facilitates students' learning on the CBT and simulator. The installation for this project took about six months; it was fully operational in 2005. The cadets in this programme are exposed to the use of the CBT and simulator from their first year at the academy. The CBT laboratory is used mainly for self-directed learning where cadets can come any time and learn with it. One CBT laboratory allows for three to four cadets at a time. This is where cadets collect many inputs about navigating a ship. The CBT laboratories offer online quizzes, exercises and notes to cadets. The simulator depicts the real navigation cabin on ships; thus there will be a Captain's role, a Navigation Officer's role, a Radar Plotter and other related roles. It appears that this simulator is where cadets transfer what they have learnt or gained from the CBT laboratories. The most important aspect of the simulator is that it is used for assessment; a lecturer assesses cadets in the simulator. This assessment is part of the curriculum for cadets and it is divided into two types: assessment for proficiency/ability and assessment for tests. With the use of technology, the programme is preparing cadets to shift towards automation and multi-skill concept.

The CBT laboratories and simulator at the NDUM are working reciprocally. In order to keep cadets engaged, many different interactive approaches such as hyperlinks and buttons are used so that cadets have to interact with the course. Interaction and comprehension are also encouraged by different kinds of testing, including interactive multiple choice questions and drag and drop operations. Based on this author's personal observations of the learning activities in the laboratories and simulator, the courseware

was designed in such a way that builds cadets proficiency based on their previous experience (old knowledge) gained either by the courseware itself or lectures/tutorials. As was strongly emphasised by Dewey (1990), cadets' learning experiences with the CBT and simulator allow them to use their existing knowledge to further their understanding. Welsh et al. (2003) suggest that the 'declarative elements' of skills can be taught using e-learning (through the CBT laboratories) such as what to call parts of a ship but not the procedural elements such as how to navigate the ship. This is where the simulator takes over the process of learning for cadets in the programme.

Based on the interviews with teaching staff, it is affirmed that cadets from the Nautical Science Programme obtained higher academic results than the cadets in other academic programmes. While it is inconclusive to deduce that online strategies have been the reason for this, the fact remains that the only difference in the teaching and learning approach is the absence of digital technologies in other academic programmes at the NDUM. Could it be possible that because cadets in the Nautical Science Programme are given more options in their learning, they are more motivated and thus take more responsibilities in their learning? Then, could it be possible that because of these factors, cadets perform academically better than the rest of their friends in other programmes?

It is critical to evaluate the other academic programmes at the NDUM on their needs for new technologies. As was mentioned earlier, the NDUM offers mainly engineering degrees and the Engineering curriculum is one that can certainly benefit from these technologies. According to an instructor, (M. Nor, N., personal communication: interview, January 17 2006), especially for engineering experiments that are difficult to perform live, simulation technologies can help cadets to perform the experiments repeatedly and learn from previous mistakes. He gave an example of a mechanical engineering course that requires the use of a heavy and huge machine which can be simulated; cadets can manoeuvre the machine in the simulated environment. Besides learning by doing (as was promoted by Dewey) and learning from mistakes, the simulation technologies can ensure the safety of cadets and lecturers alike. In addition, another instructor (Daruiz, D.D.I., personal communication: interview, January 24 2006) emphasised that cadets should be prepared to enter a world whose competitiveness is greatly influenced by technology. By giving them the right technologies to learn with, cadets will become more confident to join their parent services after graduation. Supporting this need for students' future preparation with technologies, Thompson and Bieger (2006) suggest that students need to be able to compete during and after their studies, and e-learning and simulation competence does give them the edge to do so.

Characteristics of Online Strategies

Based on this author's observations and in-depth interviews with the teaching staff at the NDUM, there are two key characteristics of online strategies for the Nautical Science Programme at the NDUM. By and large, these characteristics are unique only to the programme: as supplementary tools and as assessment tools to graduate and to be commissioned. The first characteristic is also the characteristic of new technologies at West Point (Juhary 2007). This suggests that digital technologies are not totally replacing the traditional way of teaching and learning. The second characteristic is an important indication that online strategies play a pivotal role for the future MAF officers. Without the technologies, cadets cannot be awarded the degree of Bachelor of

Science (Nautical Science) which allows them to navigate the RMN ships. Prior to this, the cadets in this programme were sent to a Navy college (a single service military college that caters to only the Navy personnel and awards only certificates to its graduates) that has pervasive e-learning and simulation technologies.

While the Nautical Science Programme is a technological leader within the NDUM, this programme also demonstrates that new technologies are not the only solutions to the problems faced by the university and cadets. This is because the nature of teaching technologies is not the only issue that needs to be considered if the NDUM is to produce officers of great ability. Special attention needs to be paid to how cadets can be encouraged to actively participate in their own learning processes by articulating their views and engaging in more self-directed learning.

Implications & Conclusion

The learning environment at the NDUM would best be a mixture of two critical elements. e-Learning and simulation technologies can never replace face-to-face sessions at the NDUM. What is expected is a compromise between what is best delivered in face-to-face sessions and through new technologies. This is because some courses may be effectively delivered using the former than the latter. It is argued that cadets will benefit from a blend of learning and teaching practice in terms of the media of instruction: a combination of traditional sessions and new technologies. Further, cadets need the face-to-face sessions for reasons that cannot be facilitated by online strategies – role modelling of their military lecturers. This is what West Point is promoting; dedicated instructors in face-to-face sessions and a sophisticated technologically supported learning environment.

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Environmental Factors in Small Business Computing

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Introduction

The information technology (IT) function in an organization must complement and support the mission of the organization (Oz, 2006). Extrapolating this principle, at a micro level, a specific information system must support some specific functional objectives of the organization (Booth and Philip, 2005). However, this fit between functional and information system objectives, does not guarantee system success (Scott and Vessey, 2002). Many information systems result in failure because the environmental factors of the organization are not conducive to system success (Biehl, 2007; Klaus, Wingreen and Blanton, 2007; Booth and Philip, 2005; Scott and Vessey, 2002; Galliers, Madon and Rashid, 1998). This outcome becomes even more probable in case of a small business because the IT personnel in large organizations are generally more aware of the significance and relevance of these factors for system success; this, however, is not the norm in a small organization (Williams, 2003).

A small business typically encounters various types of resource constraints, in conducting its operations (Gonzalez, 2004; Williams, 2003). With respect to computing personnel, the IT department may comprise of a very small number of employees who are responsible for supporting an IT infrastructure that is outside their areas of expertise (Williams, 2003; Ballard 2000). These personnel might not fully recognize the environmental factors relevant to an information system and may also lack the expertise to effectively incorporate these factors into system development and implementation process. A small business that outsources its IT function and support, still encounters challenges because external IT professionals would normally lack adequate understanding of the organization's computing environment, and the organizational personnel might not be able to fill the required information gap (Williams, 2003; Ballard 2000). In many small businesses, the managers or end-users themselves have to provide the IT support. Needless to say, these personnel are not trained to identify and incorporate environmental factors into organizational computing.

While the information systems (IS) literature recognizes the significance of environmental factors in organizational computing, it offers few insights for a small business to effectively address these factors (Biehl, 2007; Gil-Garcia, 2005). This paper presents practical guidelines that can help small business personnel incorporate relevant environmental factors into an information system development and implementation process. Furthermore, these guidelines can be employed as a framework by faculty to present the merits and relevance of these factors to students in the courses that cover the application and development of information systems to support organizational operations and decision-making, particularly in a small business.

System Development/Implementation Strategies

This section briefly reviews the primary systems development methodologies. This review should help the reader relate to the environmental factors presented in the next section.

System development life cycle, prototyping and agile methods are the primary strategies employed in developing and implementing an information system (Oz, 2006). The system development life cycle is a multi-phase information systems development approach entailing the following phases: system investigation, analysis, design, development, and implementation. Prototyping involves developing a model of the intended system to ensure clear understanding of the system objectives and then implementing the prototype itself as the final system, or developing and implementing the final system based on the prototype, using the system development life cycle methodology. Agile methods entail developing the system software as fast as possible and then enhancing it per user requirements. Regardless of the method employed, unless the intended system has very well-defined requirements, user participation in the system development process is highly encouraged (Saleem et. al., 2006; Scott and Vessey, 2002). This assertion is based on the argument that the development of a satisfactory system requires blending of two types of expertise: technical expertise and the system-related functional expertise. Needless to say, the intended users of the system are the best source of functional expertise to draw on (Saleem et. al., 2006). User participation in the system development process ensures that the system meets the user information requirements (Saleem et. al., 2006; Scott and Vessey, 2002).

While user participation promises a good fit between user information requirements and system objectives, the system-related environmental factors must also be addressed in order to ensure successful implementation of the system (Saleem et. al., 2006; Gil-Garcia, 2005). The next section presents the environmental factors pertaining to information systems development and implementation in a small business.

Environmental Factors for Small Business Computing

Computing infrastructure in an organization evolves over time. The effectiveness and efficiency of this infrastructure in supporting organizational operations and decision-making depends upon the effectiveness and efficiency of the infrastructure's component information systems. Careful application of system design methodologies and user participation in system design process is expected to result in an adequate information system (Saleem et. al., 2006; Scott and Vessey, 2002). However, insufficient attention to computing environmental factors can result in system failure. These environmental factors include the following: business sector of operations, geographical dispersity of operations, growth potential, organizational culture, personnel computer literacy and training, and the existing computing infrastructure of the organization (Biehl, 2007; Booth and Philip, 2005; Sumner, 1999; Kanungo and Chouthoy, 1998). These factors are discussed in subsequent sections.

Business Sector of Operations

The business sector, such as retail sales, healthcare, manufacturing, insurance, etc., in which a small business operates, posits significant implications with respect to the computing infrastructure required for the organization (Lentz and Bleizeffer, 2007; Hamilton and Revah, 2005). For instance, a small business with a significant number of on-line transactions can employ different strategies in supporting its on-line operations. A business whose clientele comprises primarily retail customers may decide to outsource its e-commerce operations to an ASP (application service provider) to reduce operating costs and personnel requirements (Patnayakuni and Seth, 2001). On the other hand, a business that mainly operates in a business-to-business setting with fewer customer contacts may choose to keep its e-commerce and business database

operations in-house for security and customer service considerations. However, this strategy will significantly increase computing personnel and system administration requirements. Consequently, a clear awareness and understanding of the requirements of the business sector of operations on the part of IT personnel is imperative to achieve proper alignment of computing infrastructure with the business sector.

Geographical Dispersity of Operations

A small business may operate at a single location or it might be dispersed over multiple locations in a city, region or country. The dispersity of the firm and the intensity of business interactions among various locations must be considered in developing the computing infrastructure for the business. A small direct retail sales business that operates in one location or multiple independent locations, may find adequate commercial off-the-shelf software products to support its operations (Pollard and Hayne, 1998). This strategy will be cost-effective in terms of software costs and personnel requirements. A dispersed business with the need for intense interaction among its various locations will need to install compatible hardware and software that can support the required data sharing. If different branches of the business exist within the same city, then utilizing a local Internet Service Provider (ISP) for the connectivity may be cost effective; the same strategy can be employed if the branches are at multiple locations and same ISPs are serving those locations (Gonzalez, 2004). If that is not the case, then the organization might need to hire personnel with adequate networking skills to support connectivity and data sharing (Ballard, 2000). Thus, it becomes imperative for a small business to consider geographical dispersity of its operations in planning its computing infrastructure.

Growth Potential

A business that has the potential for significant growth will face challenges in the form of upgrades, redesigns and modifications to computing infrastructure (Noltemeier, Wirth and Krumke, 1999). Initial infrastructure designs that take such growth potential into consideration will significantly reduce costs associated with enhancements required to accommodate growth. Allowing for growth potential is particularly important for a small business to avoid dealing with prohibitive upgrade costs. A small business, in direct retail sales, and exploring on-line sales, must consider this possibility in its computing infrastructure design decisions. In a growing organization, as a rule, information systems design must adhere to scalability, modularity and extensibility principles (Oz, 2006).

Organizational Culture

Over its lifetime, an organization establishes operational procedures that correspond with its business operations and decision making. Evolution of IT support function generally follows these operational procedures. Established organizational and IT procedures become part of the organizational culture, and at times it may be difficult to modify these procedures (Middleton, 2004). A small business with established manual operational procedures might experience extensive employee resistance in automating these procedures. In such an organization, a cultural change is warranted which may require intensive coaching and training at various management levels and intended users of the system. Taking a pro-active approach is the best strategy to manage user resistance to information systems implementation, or technology-based changes to the established operational procedures in the organization (Klaus, Wingreen and Blanton, 2007; Lentz and Bleizeffer, 2007).

Personnel Computer Literacy and Training

It is common for a small business to experience lack of IT personnel with the skills and training to support the varied computing needs of the organization (Williams, 2003; Ewusi-Mensah, 1997). Given the limited resources to afford technical training for its IT personnel, the management might want to prioritize the computing support needs of the organization and ensure that its IT professionals are trained to support its most critical computing needs. To protect itself against the possibility of personnel turnover, it would be advisable to train different personnel in different areas and then provide in-house cross-training (Winston, 1999). This should help the organization effectively handle computing emergencies as well as IT personnel turnover.

Existing Computing infrastructure

The existing computing infrastructure in an organization holds implications for a new information system to be implemented. If this system represents an extension to an existing information system, then it may simply posit that the organization must ensure compatibility between the new and existing information systems. On the other hand, if the new system represents a major technological change, then the organization might even opt for a complete redesign of its IT infrastructure (Gupta and Moitra, 2004). Nevertheless, regardless of the approach followed, such modifications can prove to be significantly disruptive. To minimize this impact, the modification would need to be properly managed to ensure personnel acceptance of the changes (Lentz and Bleizeffer, 2007).

Conclusion

An information system supports operations and decision-making in an organization. Despite the compatibility between an information system and its business objectives, the system can still result in a failure due to environmental factors. In case of a small business, this outcome becomes even more probable because of unique aspects of a small business. Specifically, the personnel responsible for implementing an information system in a small business might be unaware of or unable to identify the environmental factors relevant to an information system. This paper asserts that a small business must examine and address factors such as the business sector of operations, geographical dispersity of operations, growth potential, organizational culture, personnel computer literacy and training, and existing computing infrastructure in introducing a new information system or enhancing its computing infrastructure. Ignoring these factors can result in a failed information system, and an ineffective and inefficient IT infrastructure. Consequently, it is imperative that the students in organizational computing and related courses be adequately exposed to the merits of these factors to ensure their professional success as well as successful information systems for small businesses.

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Distance Learning: College Students' Perspectives

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Introduction

The Twentieth century has been replete with unprecedented change in the age of information technology including collaboration between faculty and students, simulated learning environments, electronic textbooks, digital libraries, and virtual universities with global presence (McMurray & Dunlop, 2000). The new information technology era has introduced exciting potentials for the field of education, more specifically, new approaches to knowledge construction and new methods of learning. Today more than two thirds of America's four year degree-granting institutions offer courses online or through web-enhanced modes. For the most part, these courses involve the conversion of text-based material into HTML for delivery over the World Wide Web.

Student Feedback

Amongst the published literature, there is promising indications that the web is a viable means to increase access to education (Gibson, 1998; Lockwood, 1998; White, 2005). Nonetheless, while research supporting the use of online modes is plentiful, student's perspectives on the effectiveness of distance learning have remained relatively unexplored. The literature on student feedback of online learning tends to vary quite a bit depending on the contexts being studied. Studies assessing perceptions of online learning to date have primarily investigated factors such as computer based-habits, expectations of online learning, web-skills, attitudes towards online learning experiences, and online communication tools (Kenny, 2007; Palmer & Bray, 2001; Stacy & Fountain, 2000; Taley-Ongan & Gosper, 2000;). Within the published literature, the broad issues surrounding course development and course delivery of education appear to be more technological, administrative, and instructional.

Traditionally, in higher education the construction of knowledge and communication of course material has rested primarily with the instructor. With the newer technologies, however, much of the responsibility for knowledge building has been shifted to the student, in particular with activities requiring collaboration. For many students, it is not an easy task to become acclimated to new modes of teaching while assuming more responsibility over their learning than has been traditionally expected. (Byrd & Matthews-Somerville, 2007).

Models of Learning

Theories and models of personality (including perceptions), motivation and learning, and the ways in which they relate to and influence each other, have been discussed in literature for years (Ames, 1992; Daniels, 2001; Dweck, 1986; Ryan & Deci, 2000). According to Dörnyei (2005), personality factors are "heavily implicated in the learning process in general..." (p. 29) and therefore, it is necessary to better understand student's perceptions regarding the qualities that make the delivery of online courses effective.

Built upon a foundation of constructivism, online learning can potentially provide many important payoffs. It has the potential to significantly enhance the intellectual quality of learning environments and outcomes. It has the properties to support higher-order learning and create cognitive presence congruent with deep and meaningful learning (Garrison, 2002). In the case of the distance learner, online learning offers the flexibility and convenience to complete learning units when and where the learner desires. Thus, allowing the learner to construct meaning and make connections between newly learned information at their own pace. For institutions of higher learning, online education has been used to not only diversify course offerings, but also to

expand their access to appeal to non-traditional students who otherwise would have limited access to higher education.

In addition to expansion of course offerings and heightened convenience, distance learning has pedagogical potential beyond traditional methods of learning. For instance, multimedia capabilities can be used with learning exercises that allow learners to apply concepts realistically. Animation can help demonstrate concepts and events difficult to portray in traditional classes, which, in turn, can facilitate a more accurate communication of important ideas. Distance learning can deliver “new” information not contained in traditional courses, effectively reinforcing other course information through offering examples, explanations, assessments, and exercises. In this way, online instruction can potentially enhance learning compared to what can be accomplished using a traditional on-site classroom approach (McEwen, 1997).

Although distance learning (and various blended approaches that integrate online components into traditional classes) is quite prevalent at many institutions of higher learning, it still remains at an early stage of development. Consequently, developers and deliverers of online learning need broader understanding of how students perceive and react to elements of distance learning along with how to apply these approaches most effectively to enhance learning (Koohang & Durante, 2003).

Estimates suggest that the amount of money that U.S. companies spend on the IT-based delivery of training grew from \$3 billion in 1999 to \$11 billion in 2003 (Koprowski, 2000). According to Eduventures, an organization that studies trends in education, online enrollment in college and universities has more than doubled in the past few years, jumping from 1.98 million in 2003 to 2.33 million the following year (Ramano, 2006). Projections further suggest that online offerings will continue to increase significantly in the years to come (Meyen, Aust, Gauch, Hinton, & Isaacson, 2002). In an attempt to address some of the gaps in research, this purpose of this study was to investigate student perceptions of a variety of interrelated factors in the distance learning context, including student’s perceptions of technological issues, effectiveness and advantages of distance learning, and successful online learning environments.

Methods

Procedure

Research Design. A non-experimental, purposive group was used for this study. This study focused on the perceptions of education major’s views regarding distance education courses. This study was guided by two primary research questions: (1) What is the relationship between individual student characteristics and perceptions of the effectiveness of online learning? (2) What factors do students believe to significantly impact the successful delivery of online courses? It was hypothesized that individual student characteristics were significantly associated with perceptions of distance learning contexts. More specifically, it was believed that non-traditional students would rate online modes of learning more positively than traditional students. It was also hypothesized that factors, such as accessibility of instructor and immediate feedback, were significantly related to students’ perceptions of successful online courses.

Participants and Survey Instrument. The sample consisted of 135 enrolled in four upper level special education classes and one graduate class at a university located in a diverse, suburban area. Ninety-five percent of the sample consisted of undergraduate Early Childhood/Special Education and Elementary majors and the remaining 5% were graduate students in the School of Education. This purposive sample of students represented the number who volunteered to participate in this study. Classroom sessions were used to administer the surveys because it was likely to result in a much higher return than if surveys were mailed.

Online Learning/Distance Education Questionnaire (OLDEQ). The survey entitled “Online Learning/Distance Education Questionnaire” (OLDEQ), which was a 45 item self-administered survey, was the primary data collection instrument used in the study. The OLDEQ

was developed by the investigator and designed to utilize a 5-point Likert rating scale (1= strongly disagree to 5 = strongly agree). The questions on the survey presented students with a set of statements for which they had to choose a response. The survey was designed to get feedback on a range of issues concerning the online learning experience of the students. The questions fell into five categories: (1) background information, (2) technological issues (e.g., accessibility of internet for studies, comfort with communicating electronically), (3) effectiveness of online learning, (4) advantages of online learning, and (5) factors that contribute to the successful delivery of online courses.

Data Collection. To examine student perceptions of distance learning, the OLDEQ was administered by the investigator to the students in four education courses. Surveys were handed out, a brief overview of the study was explained, and the class was collectively asked to participate. All students were informed that their participation in this study was completely voluntary, and their responses would contribute to the study of student perceptions of distance learning. The students were also told that survey responses would be anonymous because the identities of the participants were not related to the outcome of the study. For the one graduate class, surveys were sent out electronically and similar procedures were taken for students who received their surveys electronically, with the exception of anonymity of their identities. Those students who returned surveys electronically were informed that while their identities could be determined based on the return email, it would not be used for the purposes of the research project. For the students who received the survey on-site, the students were assured prior to beginning the survey that their course grades would not be impacted by their responses marked on the survey. All the participants completed the survey within 11 minutes and returned the completed survey to the investigator. All the surveys were reviewed for completeness at the time the surveys were returned. It had been determined a priori, that those questionnaires containing items that were not completed would not be included in the analysis. The same procedure occurred for surveys returned electronically. All of the questionnaires were determined to be complete and were included in the analysis.

Data Analysis. Pearson product-moment correlations were performed to determine the relationship between individual characteristics and perceptions of distance learning. A frequency count, using Excel, was also employed to further examine the differences in the responses to specific survey items.

Survey Return Rate. A total of 135 surveys were administered in upper level education courses. Four surveys sent out electronically were not returned, rendering a return rate of 97%. Of the 131 usable surveys, 98% were completed by women and 2% were completed by men. In terms of age, 71% fell into the 18-27 bracket and 29% fell into the 28 or more bracket. Forty-one percent had a grade point average under 3.0 and 34% identified themselves as White/Caucasian, 56% as Black/African American and 10% as other. Seventy-three percent had some prior experience with distance courses: 27% taking one course and 43% taking two or more. Thirty-six percent of the participants worked full-time, 36% part-time, and the remaining 26% did not work. All participants were in the Education program: 76% had at least four years of more of post-secondary education. No freshman participated in the study.

Results

The first research question of this study concerned the relationship between individual student characteristics and perceptions of distance learning. As predicted, individual student's characteristics were significantly related to perceptions of distance learning. Work status ($r=.04$, $p < .05$) was significantly correlated with the belief that not all courses are appropriate for online learning while university status ($r=-.04$, $p < .05$), learning styles ($r=-.04$, $p < .05$), and number of distance education courses taken ($r=-.02$, $p < .05$) were negatively correlated. University status ($r=-.00$, $p < .05$), learning styles ($r=-.00$, $p < .05$) and race ($r=-.01$, $p < .05$) were all negatively correlated with the belief that online learning is an appropriate method for learning core

education classes. While work style ($r=-.04$, $p < .05$) and university status ($r=-.01$, $p < .05$), were found to be negatively correlated with the belief that the same amount of learning occurs in both online and traditional courses, race ($r=.00$, $p < .05$) was found to be positively correlated. Learning style ($r=-.02$, $p < .05$) was the only variable found to be significantly related to the belief that similar grades could be earned in an online course than in a traditional course. Finally, contradictory to the finding that many non-traditional students who work part and full time believe that not all courses are appropriate for delivery through online modes, work status ($r=-.03$, $p < .05$) was found to be negatively related with the belief that online courses meet academic needs. The second research question concerned student's perceived factors that contribute to successful online courses. Between 52 and 62% of the respondents strongly agreed that all the factors identified on the survey, including accessibility of instructor, immediate feedback, and instructor's knowledge of equipment response to emails, return of phone calls, and return of assignments, contributed to the successful delivery of online courses. Five to 19% reported to be unsure of the degree in which the factors contribute to the successful delivery of online learning and 4% disagreed that immediate feedback, instructor's knowledge of equipment, response to emails, and return of phone contributed to successful deliveries of online courses.

Conclusion

There are a number of findings identified in previous research which were also supported in the results of this study. The alternative hypotheses suggested that individual student characteristics were significantly associated with perceptions of distance learning contexts and factors such as accessibility of instructor, immediate feedback, and instructor's knowledge of distance education equipment would be perceived by students to be significantly important for the successful delivery of online courses. To no surprise, these hypotheses were confirmed. These findings provide an empirical base for the elaboration of theoretical linkages between individual differences, perceptions and motivation for cognitive engagement. Perhaps, for the sample used in this study, the added roles and responsibilities of learning in a distance learning environment is less of an advantage to students who have the option of selecting the traditional classroom. Or perhaps, given the fairly new transition into the technology age, some students have simply not adequately learned how to transform their roles from passive learner to active participant.

For the most part, 62% disagreed that online learning did not offer any advantages over traditional courses. However, it is unclear why 22% agreed that there were no advantages to online courses over traditionally delivered courses. When attempting to better understand the patterns found, it is important to note that there were significant differences found in the perceptions of those who worked full or part time and those who did not. Although the results of this study are not intended to be generalized beyond of the scope of the participants within the study, it does add to literature base for which further exploration can be conducted.

While the survey used in this study was a solid springboard to assess general student perceptions of distance learning, the respondents were still quite diverse in their responses. The results of this study support previous research which has suggested that the web is a viable means of increasing access to education (Gibson, 1998; Lockwood, 1998; White, 2005). Nonetheless, while this study added to the evidence of using the web as a tool for learning, it did not provide needed information regarding the perceptions of the use of the web as a medium for delivering instruction (e.g., CourseInfo (Blackboard), WebBoard, WebLearn, Course Websites). Often times, it is not only the ability to access electronic modes that makes online learning a benefit to students. Not having the software tools clearly and logically organized, objectives plainly stated, meaningful feedback, and easy navigation available can make even the most advantageous task cumbersome. Therefore, it is crucial that researchers continue exploring issues such student's perceptions of online learning platforms, which will in

turn assist instructors and course developers in better understand how to utilize technology for effective learning.

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Practical Guide for Facilitating Online Courses

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Introduction

A strong predictor of a student's success in an online course is the ability for faculty to create an online community. The facilitator should initiate actions that will create a social climate among students that supports the group learning process. Collaboration is a key component in an online community. It is necessary for students to become fully engaged in interaction and collaboration to deepen the student's knowledge of the subject (Wisenberg & Hutton, 1996; Hacker & Wighall, 1997; Gunawardena & Zittle, 1997; Clow, 1999; Phillips & Peters, 1999; Roblyer, 1999; LaRosa & Whittle, 2000; Ebersole & Woods, 2001; Garrison, 2006).

Fulfilling both objectives is important in assisting students to make a successful transition to the online learning format. Although many students can be expected to have experience in this medium, undoubtedly some will not. Therefore, in some respects, the facilitator's role during start-up is to "level the playing field" so that all students feel comfortable and contribute effectively to the group learning process as time unfolds.

Community building exercises are also essential during this first week so that effective interactive learning becomes possible. For example, each student should be required to post a short biography detailing, at a minimum, his or her professional background and interests. Each student should also be required to post responses to two or more of these introductions. A discussion thread should be set aside for special use during the first week to facilitate spontaneous conversations. Apart from building the necessary social fabric essential for later student success, these messages can help students uncover common interests and backgrounds useful for later responses within content oriented discussion threads and for later team building for group-oriented exercises.

Weaving Content

Online courses are learner centered and as facilitators we should be there to guide students and direct their activities along productive paths that are consistent with course objectives and personal goals. The key component of an online course is the collaboration that occurs among students and the facilitator in understanding and building upon course content in personally relevant ways. For this type of collaboration to be successful in the course, it should include communication that is purposeful and reflective of the material (content). Each student should be stimulated and motivated to analyze the material and translate it into knowledge that has personal meaning and that can be shared with other students at the same time.

Successful facilitation of a course ensures that students are effectively engaged along positive and purposeful pathways to knowledge. It recognizes that a successful, knowledge driven community is framed by three core elements: social presence, cognitive presence, and teaching presence. Therefore a main task for the facilitator is to

enhance the cognitive presence of the community by effectively weaving course content into the spontaneous social fabric that has been created through the on-line format. (Garrison, 2006).

As a practical matter, this task requires that the facilitator guide students by effectively weaving or relating content to discussion threads in order to deepen a student's knowledge of the subject matter. Effectively relating course content to student assignment postings and responses to such postings increases the student's practical understanding gained from the course. It also establishes a sense of accomplishment and direction among students by connecting loose ends and strengthening conceptual linkages brought out by student comments. When weaving is done correctly, it summarizes the major points of the on-going discussion by pulling together the disjointed threads, and integrating the contributions of all participants (Shi et al, 2006).

Effective weaving can be accomplished through various methods. It also requires a sense of timing on the part of the facilitator. When conversations within threads are going well, it is usually better for the facilitator to wait until one or more common themes relating to the course content are being discussed collectively by students. When appropriate, the instructor can then intervene by summarizing key points brought out by students and then asking other prompting questions to move the discussion along a path intended by the assignments (Deubel, 2003). However, when it is clear to the instructor that discussions are not proceeding along the intended paths, then he or she should intervene, in an inclusive manner, to bring the discussion back to where it should be.

The summarization of key points by the facilitator has two main purposes. First it should reinforce student perceptions of how widely accepted content or theory applies in diverse situations. Second, it should provide a means for students to personalize course information (content) into practical knowledge that they can use at work or in their everyday lives. Once key points have been summarized, leading questions asked by the instructor should then encourage students to further investigate the practical applications of course content that have personal meaning.

Facilitator Feedback

Although almost any content can be uploaded onto the web, the real learning associated with on-line courses occurs when the instructors and students engage in meaningful, content-oriented interaction. Effective on-line learning requires the instructor and students to interact on a variety of levels. The interaction requirements placed on the facilitator require an intense personal commitment. No amount of technology can substitute for an unresponsive instructor who does not consider his or her class as important as other activities. It is through a diversity of interactive activities that the students and instructor have the opportunity to form a learning community. This idea is supported by Rovai (2002):

A second factor is social presence. Some instructors feel that once they design their course and place it online their job is mostly done, that the community of learners will take care of itself and thrive, and learning will occur. What is likely to happen in such situations is that the sense of community will wither unless the community is nurtured and support is provided in the form of heightened awareness of social presence (p.9).

Clearly, a model of timely, concise, and relevant feedback by the facilitator supports and accelerates this awareness. To this end, an instructor should strive to interact with each and every student by giving them individualized feedback within the discussion threads and graded assignments.

It is through successful facilitation within discussion threads that the students are able to form a proper cohort which allows the students to feel ‘safe’ in their work environment. By monitoring a discussion as it unfolds, the instructor gives students timely feedback and ensures a safe learning community by maintaining a high standard of discussion. Also, by participating in the discussion as it is occurs, the instructor can correct the direction of a discussion when necessary. Timely instructor participation also ensures that learners know that their instructor is present, active, and aware of what is happening within the shell. Additionally, this sense of continuous instructor presence can prevent many behavioral problems within the discussion threads which might otherwise occur.

Effective instructor feedback is also an important element of the grading process. However the effectiveness of the feedback depends in large part on use of a grading rubric to: a) communicate what is expected of the student and b) provide a framework by which the facilitator can judge the quality of student work. The rubric is essential in conveying the requirements for any assignment and providing effective qualitative feedback to students. By closely aligning the instructor’s response to the student’s work based on the criteria that have been set forth in the rubric, areas that meet expectations and those needing improvement can be clearly conveyed to students. A numerical score without good, specific feedback does not help the student to improve future work.

Creating a Sense of Community

Cohorts of learning communities give the student in the virtual environment a sense of connectedness. Ultimately it is the instructor’s presence that supports this kind of interaction. Wegerif (1998) defines this experience as the “threshold experience” in which students either feel that they are a part of the community or distinguish themselves by feeling that they are outsiders observing the community.

This leads to the following question that we can ask ourselves as facilitators. How is it that we can make students feel included in the virtual classroom thereby bringing them across Wegerif’s threshold and into the community? In developing our answers we should be aware that developing a greater sense of inclusion among students has the added benefit of encouraging more of them to participate in discussions and projects. A community of learners ideally represents a safe haven in which each individual can explore ideas and hopefully use new concepts at work.

Developing this sense of inclusion among students is most difficult at the beginning of an online course. Some groups have a difficult time getting off the ground. When this happens, the instructor’s effectiveness at the start of the course is particularly crucial. In such cases, it is important that the instructor send out the appropriate prompts to start the group along a path leading to a successful team experience. The benefits are clearer for all involved when a sense of community is established as early as possible because students have the opportunity to work effectively and learn from one another over a longer period of time.

Clearly, we all wish that the students enrolled in our courses exit the class with a foundation based on a comprehensive understanding of the subject matter. We also hope that we are producing good critical thinkers that have not only strong problem solving skills but also the ability to work as a part of a team. We should also realize that these objectives are all achievable through the establishment of effective learning communities. Such communities offer students the opportunity to work as a collaborative group, improve their communication skills, promote understanding and tolerance of a diversity of viewpoints and thereby achieve more than would otherwise be possible. If we are successful as facilitators, we will have helped our students reach these goals.

Professional Development

Throughout the course, the effectiveness by which facilitators guide students towards the creation of personally useful knowledge should be viewed as an-going process. If viewed over the long term, any facilitator's effectiveness in a particular course is largely dependent upon how well he or she has kept abreast of new content and supportive technologies which facilitate communication among all course participants. Therefore once hired by an institution, all facilitators need to continuously seek out new and useful knowledge pertinent to their particular roles as online educators. In practical terms, this means systematically dedicating a portion of their times to staying current with new research in their content areas and the latest trends and innovations in facilitating technologies. Moreover because of today's complex and technologically changing world, this type of commitment on the part of facilitators is no longer optional. It is a responsibility which facilitators need to recognize when choosing to instruct through the online medium.

Apart from committing time to such efforts, facilitators should be open to new developments and be willing to include or adopt them as situations warrant. This might be particularly stressing at times. In particular, the willingness to adopt new methods and technologies is largely dependent on capabilities to adapt rapidly to new situations. Further strains can be expected because facilitators often times have busy schedules requiring well developed time management skills. However with proper tools and a purposeful commitment, continuing success is always within reach.

Conclusion

To ensure the success of a student in an online course, the facilitator must create a sense of community where the learner is fully engaged in interactive discussions. The key component of an online course is the collaboration among students and the facilitator and a sense of community is created through this. Timely feedback by the facilitator is a critical element to the success of the online course. As we all know, teaching any course is a complex task. Instructors require substantial time to test new ideas, assess their effects and adjust strategies or approaches for the betterment of students. However this "searching out" process is essential for continual improvement of the online learning environment in personally relevant ways. It should help facilitators reach students more effectively by guiding the online learning experience continually along more practical and therefore meaningful paths.

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