Editor's DeskTop

Since its founding in 1993, the Association for University Regional Campuses of Ohio has sought to provide faculty with the opportunity to meet colleagues from across Ohio and to gauge their activities against the best that are currently being offered at regional campuses. As the contents of this volume indicate, many faculty have been more than diligent in keeping abreast of not just the latest technology but also the latest scholarship. Moreover, they have been actively engaging in the application of scholarship to their disciplines and to their classrooms.

As editor, I am once again pleased and proud to present the work of faculty from across Ohio's state university regional campuses. Volume 11 of the *AURCO Journal* is an exceptionally representative collection of 15 articles from 8 of the state's 23 regional campuses (35% of all campuses): Kent State University—Stark (3 articles); Miami University—Hamilton (1 article) and Middletown (1 article); Ohio State University—Marion (3 articles, 1 in collaboration with OSU—Columbus); Ohio University—Southern (1 article); University of Cincinnati—Clermont (2 articles); University of Akron—Wayne (2 articles); Wright State University—Lake (2 articles).

In all, 7 of the 8 state universities (87%) are represented by faculty, with one article a collaborative effort by OSU—Marion and OSU—Columbus. In addition, for the first time, the journal includes the winning student essay, for which the student has received a $500 scholarship from AURCO.

Articles and approaches are as diverse as the classes, campuses, students, and faculty themselves. Four articles deal with classroom pedagogy. In two papers, Gordon J. Aubrecht, II, continues his investigation of how the "inquiry" method works in physics classes, one paper emphasizing the use of reworked pretests and the other examining students' expectations about teaching after having participated in an "inquiry" class. Paul B. Weinstein indicates how faculty can become more than just lecturers by actively engaging students in historical questions through bringing historical personages into the classroom. Barbara Widanski shows one method for preparing students during lectures.

Two articles seek to examine and explain student behavior. Gordon J. Aubrecht, II, and Romanian colleague Cristian Raduta examine how physics students from the United States and Romania approach specific problems in physics. Joseph Cavanaugh attempts to explain why students prefer to take online courses.

Three articles consider purely technical considerations encountered in the contemporary classroom and in reaching larger communities through current technology. Rob Kairis explores a first–year information literacy program, while Claudia Khourey–Bowers designs a personalized virtual learning environment. In his elaboration of security considerations for wireless LAN deployment in the university, Pradeep K. Mohanty describes the security concerns always on the minds of those using the latest technology. Susan Baim indicates the current methods for employing the Internet and software programs in the design of surveys for automatically programmed response designs and for those employing e–mail as the means to gather data.

Two articles approach the topic of outreach to local communities. Chen Ferguson indicates how outreach is incorporated into revising a management program to educate the local workforce. Mindy McNutt explains how the senior capstone project connects students directly with the community and how each has benefitted in the process.

In the final category of articles are three dealing with a variety of concerns that are sociological and historical in nature. Gregory D. Loving suggests ways in which the concept of diversity may be most appropriately defined and employed in teaching. Debra Johanyak explains the comeback, "waking the dead," of Shakespeare in the regional and community colleges. Lastly, Bei Cai takes a historical look at the issue of collectivism and individualism as it concerns the Chinese during a period of significant cultural change.

Acknowledgments

No journal is the work of one individual. I wish here to thank the individuals who have helped to make *AURCO Journal* the leading publication of Ohio's twenty–three regional colleges.

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Third, Gretchen Bollenbcher, recently retired from Wright State University—Lake, who even in retirement has kept her academic interests alive in proofing the journal. Without her experienced eye for detail, the journal would not be as professionally presented as it most assuredly is.

Special Acknowledgment: My special thanks go to Philip Harris, mathematics instructor of Wright State University—Lake Campus, who at the last moment was asked to provide mathematical equations for the journal. Without his very generous and gracious and time–consuming efforts, one paper would have never appeared in this publication.

AURCO Journal Online

AURCO Journal is now available online at Ohio University—Southern at the following location: www.southern.ohiou.edu/aurco. My thanks go to Terry Quinn, Associate Editor of *ETUDE & TECHNE* and mathematics professor at Ohio University—Southern for arranging for the online version and to Dean Dan Evans for allowing AURCO to use the technical resources of Ohio University—Southern.

Arthur A. Molitierno
AURCO Journal Editor
Wright State University—Lake

Plenary Address

Rethinking 21st Century Learning And Accountability In Public Higher Education: The Challenge Of Organizing The Learning–Centric Public University[1]

Address Presented on April 17, 2004

Stephen J. Kopp
Former Provost of Ohio University

Abstract

The ascension of the Knowledge Age and the decline of the Industrial Age have transformed the landscape of American higher education at its most fundamental level. Increasingly, universities are challenged to prepare students for a future in which opportunity will be made manifest largely for people who can think independently, critically, creatively, and inventively. To complicate matters, these educational outcomes are expected to be developed within the context of more universal access involving students who enter college with more varied backgrounds and wider gradients in preparedness. Moreover, many may arguably approach learning in far more dissimilar ways. This article highlights the nature of the leadership challenges confronting public universities and regional campuses. It also introduces ideas and questions that are intended to stimulate a rethinking and reframing of organizational priorities toward a focus on integrative and comprehensive strategies that have the potential to systematically address and account for these higher learning outcomes.

Preface

This article was developed from the keynote address presented at the Southern Campus of Ohio University in Ironton, Ohio, to commemorate the tenth anniversary of the founding of the Association

of University Regional Campuses of Ohio. I was honored to be invited to give this address. It provided an opportunity to share and discuss ideas of importance for the future of Ohio public higher education to an audience that clearly cares about such matters. I wish to extend my most sincere thanks to organizers of this meeting. Their spirit of volunteerism and enthusiasm clearly serves as the heart and soul of this organization. I also wish to offer a special thank you to Dean Dan Evans, his staff, and colleagues at the Southern Campus for their most generous and warm hospitality.

Introduction

The expectations of a baccalaureate education are more expansive than ever; yet, the evidence demonstrating that these expectations are fulfilled during the course of undergraduate education for all students has never been more tenuous. Some probing questions may help illustrate the nature of this situation. For instance, what are the achievement and/or performance gaps between the knowledge and the caliber of thinking and significant learning[2] demonstrated by students graduating in the lowest tenth percentile of the graduating class as compared to students graduating in the ninetieth percentile? Are these differences acceptable and, if so, based on what criteria or standards? What do they signify with respect to the meaning of a baccalaureate degree? When educators are pressed with this question, the accomplishments of a relatively few, yet highly accomplished students are often touted to draw attention to what is possible, rather than what is routinely accomplished in institutions of higher learning, all the while redirecting attention away from the outcomes achieved (if known) by the majority of enrolled students.

Arguably, many public universities are not organized to perform and meet either effectively or efficiently the increasingly more complex responsibilities assigned to higher education. Possessing many vestiges of bygone eras, many universities continue to try to respond by overlaying function after function on organizational structures designed to educate a very different kind of student and to meet a far different set of educational expectations. Opportunity for higher learning is no longer limited to a select and privileged few in society. Educating people

for the factories and career paths involving regimented and compartmentalized skills that operate within hierarchical frameworks is declining in importance. No longer are simply remembering and repeating knowledge sufficient. Certainly, the question can be asked whether remembering and repeating were ever sufficient, but these two elements of education remain the dominant methods of instruction and mode of academic recognition. The essence of the challenge is illustrated in the following quotation attributed to a college senior [1]:

> So you get here and they start asking you, "What do you think you want to major in?" Have you thought about what courses you would like to take? And you get the impression that's what it's all about—taking courses, and majors. So you take the courses. You get your card punched. You try a little of this and a little of that. Then comes GRADUATION and when you wake up and look back at this bunch of courses, it hits you. They don't add up to anything. It's just a bunch of courses. It doesn't mean a thing. (Willimon and Naylor, 1995, 57–58)

Public universities aspire to missions and priorities that often are unrestrained (i.e., to be everything to everyone), paradoxical (e.g., simultaneously increase undergraduate enrollment, reduce class size, and increase research funding with little or no change in faculty resources), and ambiguous (e.g., providing "distinctive" education). Collectively, the conditions created frequently contribute to internal conflict, polarization, competition, and unsustainable activity. Absent coherent, inspiring leadership that catalyzes compelling organizational purpose, goals are pursued subjectively, often with approaches often characterized by varying degrees of fragmentation, incoherence, inefficiency, and compartmentalization. Not surprisingly, progress, if any, is slow to be made evident. As a result, rather than focusing on needed reforms that will matter most for the future, the tendency has been to concentrate on superficial matters, like image–building and pumping up artificial rankings. To illustrate, customer satisfaction has overtaken learning and the importance of actively engaging students in the mental work involved in inquiry and the pursuit of truth. Specialization has overtaken developing the foundations of the

enlightened mind. Accounting (e.g., course and credit collecting) has overtaken advancing the caliber of thinking as a priority. Glorifying commercialization (e.g., sports entertainment grandeur) has overtaken the responsibility for holistic education to prepare all students to become active, discerning citizens in a democratic society.

Ideally conceived, a university is a place dedicated to teaching, research, and service because such activities individually and collectively are intended to yield learning that benefits society and creates public value in different ways. Put simply, a university is expected to be a place rich in opportunity for learning and actualizing the vast human potential centered in these institutions. Educators presume that through teaching students learn to construct knowledge and advance cognitive development in ways new and advantageous to the particular person and ultimately society. Through research, knowledge and understanding are formed which are new in the absolute sense for humanity and change or advance current thinking. When these advances and the thinking involved in creating them are transferred and infused into the classroom and extended to the larger community, the value of research is amplified immeasurably. Through service, knowledge is disseminated and put to work for specific and applied purposes that benefit communities and other public stakeholders, while benefiting students through experiential learning opportunities. Presumably, the transfer of these latter two activities occurs and accrues to the benefit of students and stakeholders. Baccalaureate education should be much more than the sum of its parts. It is expected to develop and hone a diverse and far–ranging complement of cognitive and affective foundations, skills, and attributes essential to career and life transitions and to effective participation in an increasingly complex and global society. Some of the qualities of a baccalaureate education include (See **Table 1**.):

- in–depth knowledge and integrative thinking skills (e.g., critical, resourceful, and inventive thinking) required to deal with the complex challenges of modern life, a career, and the changing global landscape
- lifelong learning strategies and competencies that will enable graduates to adapt and reinvent themselves by acquiring new career skills as new opportunities arise and as existing skills become outdated
- the skills and strategies for solving new and increasingly more

complex problems, constructing new knowledge and understandings, appreciation for esthetics, artistry and other dimensions that add richness and quality to life, and the capacity to make judicious and informed judgments across multiple domains

■ well–developed personal and interpersonal skills, moral and ethical acumen, and the self–discipline to act conscientiously and assume civic and community responsibilities expected of an educated citizen in a democratic society.

Table 1. Changing Educational Expectations

21st Century Foundations	Description
Communication	– Language proficiency and expression (reading, writing, listening, speaking) using conventional and technology-based media
Scientific	– Knowledge of science, scientific thinking (*e.g.*, hypothesis formulation/testing), probability and statistics, mathematics/abstract and logical and symbolic thinking and relationships between science, math and technology
Technological	– Capacity to use computers, electronic devices, networks and applications to learn, access and analyze information, and adapt to changing technological and software platforms
Visual	– Ability to decipher, interpret and express ideas using images, graphics, icons, charts, graphs and digital media (*e.g.*, video)
Informational	– Ability to find, retrieve, evaluate and utilize information appropriately and productively
Inter-Cultural	– Recognition, appreciation, understanding and respect for the diversity of people, cultures and differences; including global awareness – comprehension and recognition of interconnectedness among and between nations, commerce and peoples across the globe
Ethical	– Capacity to form reasoned ethical and moral judgments
Inventive/Creative Thinking – Creating Intellectual Capital	▪ *Adaptability/Ability to Manage Complexity* – ability to plan, design and manage resources in new ways, understanding interdependencies within systems, systems' thinking; knowledge transfer to discover deeper meanings and relationships ▪ *Curiosity, Creativity and Risk-Taking* – *curiosity* – using the desire to know and the quest for greater understanding as the catalysts for lifelong learning; *creativity* – using imagination to develop new and original concepts/approaches/associations; *risk-taking* – willingness to place something of value in a position/situation of jeopardy in order to chance the discovery of new phenomena, creative solutions, or advance new ideas ▪ *Higher-Order Thinking and Judicious Reasoning* – process of creative problem solving leading to sound, informed, judicious, logical interpretations, deductions, judgments and conclusions

Despite these noble intentions, the public chorus calling for reform in higher education has grown louder and more emphatic with each passing

year [2]. Buried amidst the finger–pointing, and at times outright denial, is the tacit accountability that must be assumed by academics (faculty, administrators, and staff) for advancing learning and thinking in all students who earn college degrees. At one end of the spectrum, the acts and processes involved in education and the construction of knowledge have become dissociated from the knowledge itself {"knowing" (remembering) ≠ "knowing how" to think and construct knowledge}. Similarly, the developmental processes, the meaningful mental work required to discipline the mind to think critically and construct knowledge have also become disaggregated and fragmented amidst the compulsion to cover more and more content. The challenge is to reunite these processes. In addition, research and scholarly and/or creative endeavors at many research universities have become compartmentalized and isolated from the classroom as more and more faculty negotiate and are granted release time from undergraduate teaching.

At the other end of the spectrum, organizational leadership has focused too long on whittling and tweaking the present system to trim costs and maintain the semblance of normality by focusing on the perimeter of the organization in response to challenges that call for a thorough reexamination of core functions and priorities and the re–conceptualization of essential operational frameworks aligned to meet the challenges of the future. The challenge is formidable and has few guiding precedents. Perceptions of entitlement and turf are pervasive, while navigating this political landscape is treacherous. As a result, rarely is planning undertaken that contemplates long–range reforms to address complex, integrated systems' issues, like how to improve learning productivity across the curriculum, how to re–conceptualize and realign services, offices, and functions to foster organizational collaboration that improves efficiency, how to improve the evidentiary basis of educational outcomes and accountability for significant student learning, and how to reorient institutional incentives and recognition to be aligned with such reforms. Such widely recognized and various major issues inspire considerable rhetoric and attention and even an occasional pilot project here and there, but in the end these issues precipitate little systemic action or change within most institutions.

Envisioning the Learning–Centric Public University

Conceptualizing higher education in terms of learning leads to some provocative, if not unsettling implications. What if advancing significant learning, critical thinking, and adapting to meet the needs of each learner served as the fulcrum for rethinking the operational and administrative domains of the university? Imagine a university predicated on a culture of innovation, imagination, and continuous learning and self–improvement. Organizationally, what would change?

Fundamentally, significant learning is about learning how to learn. It is an active, immersive process that exercises the brain through thinking and alters it, both structurally and chemically. Arguably, learning begins with a question or problem—one that evokes deep personal meaning and compels the learner to think, probe, engage in mental work, and seek greater meanings, truths, answers, etc. As such, learning is motivated by inquiry, innate curiosity, and absorbing questions. It requires learners to question, reason, test, verify, and refine their thinking. Learning is heightened when multiple senses are activated and engaged. It depends on regular mental work involved with thinking, connecting, integrating, synthesizing, and testing of ideas, principles, concepts, and meanings to form, remodel, and maintain mental and neural knowledge and memory networks. It involves self–discipline and disciplined thinking, as well as systems–thinking across disciplines—making connections and interconnections between ideas and understandings. Learning is self–generative, a resourceful process that engages contexts, dispositions, patterns of thinking, and ways of knowing. It involves the construction and deconstruction of knowledge and understanding and the transfer of knowledge across discipline domains in the search for truth. Learning also entails the active search for meaning which is influenced by experiences and enhanced by contemplation, reflection evaluation, and critical thinking.[3] Experiences often serve as the provocateurs, which catalyze further learning. As such, learning is a developmental continuum enhanced by connections to prior knowledge and experiences and inspired by imagination and insight.

A logical corollary to this conceptualization is that organizing and aligning university systems, resources, and infrastructure to support learning is a prerequisite for success in meeting the educational challenges

of the Knowledge Age. Progressing from a teaching–centric institution, organized for content and/or information delivery, to a learning–centric institution, organized for learning and development of the whole person, requires fundamental, transformative change in institutional thinking, identity, philosophy, and practice. It begins with reframing the institution's core purpose to one that concentrates on students, their thinking and learning as well as advancing learning opportunities for all members of the university community. It means advancing enlightened operational domains organized for learning as well as the integration of strategies, processes, and physical resource designs and structures required to support and advance learning–centered experiences. It also means that discipline–oriented research and creative work is integrated within the framework of the learning strategies used to actively engage learners in the mental activities required to advance their cognitive development. These strategies may include activities, simulations, and experiences designed to develop sophisticated patterns of thinking, knowledge construction and deconstruction, cognitive fluencies, and synthesis of ideas and concepts. Ultimately, this transformation requires rethinking and realigning roles and responsibilities throughout the university in accordance with basic principles and research findings about how humans learn—questioning assumptions, postulating, testing, authenticating the efficacy of educational practices designed to advance learning—as well as experimentation to create more powerful learning experiences and increases in learning productivity. This realignment also implies a commitment to heightened institutional self–accountability for the outcomes achieved by all students, particularly graduates.

To this end, institutional planning must focus on identifying and prioritizing learning expectations, processes, and outcomes and the development of diagnostic metrics and criteria for monitoring and verifying their attainment. These assessments must occur at multiple levels across the institution and provide authentic, longitudinal measures of institutional effectiveness. The clarity of these stated outcomes will be a major pre–determinant of success. Curricular reform should parallel and emphasize this focus in advancing learning, thinking, and the demonstration of outcomes.

An approach for achieving this latter goal would be to organize and

orient courses and curricula differently, beginning with the delineation of longitudinal and cumulative learning outcomes (expectations) → defining the indicators that will be used to monitor the progress toward accomplishing and sustaining these outcomes → experimenting with and refining learning strategies and approaches (processes) that will foster and advance the learning domains targeted → with the final stage in the planning process culminating in the internalization of effective strategies and approaches to advance active, student–involved learning, which include organizing content, elements, principles, and conceptual foundations essential to constructing understanding and knowledge, while reinforcing key elements of thought and frameworks of thinking. In addition, these planning considerations must include the internalization of effective strategies and approaches to advance active, student–centered learning. This process is illustrated in **Figure 1**.

Organizing as a learning–centric institution also involves a mission that embraces continuous improvement to foster creativity and collective action to develop and advance strategies and practices that will further

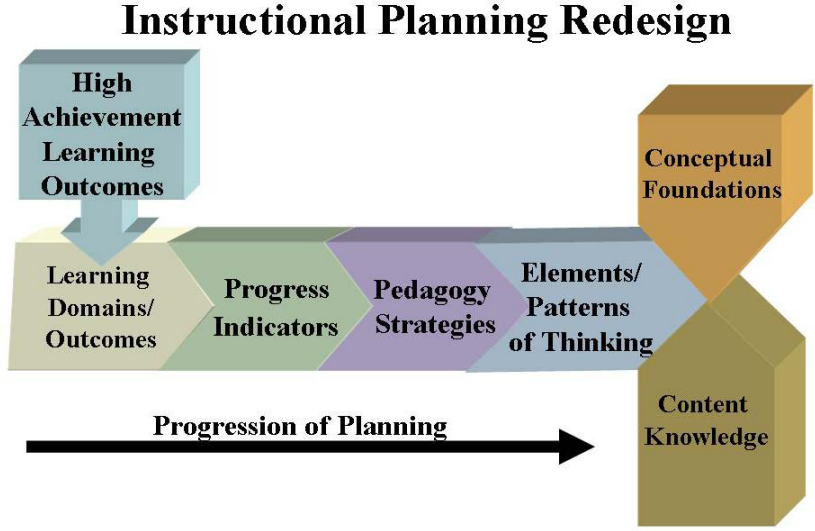

Figure 1: Progression of planning considerations involved in the redesign of curricula and courses to improve coherence, integration, and foundations of thinking and learning.

empower students and enhance their learning. This ongoing research should be directed toward improving the effectiveness of the metrics and pedagogy deployed in order to amplify and accelerate the learning that takes place. Assessing and documenting the validity and reliability of learning outcomes should include consideration of indices from multiple domains, e.g., predictive, longitudinal, and cumulative learning measures.

Faculty And Student Challenge

A conceptual diagram that illustrates the various dimensions of this endeavor and institutional conditions that have the potential to either enhance or mitigate learning opportunities is presented in **Figure** 2. Key transformational elements of this model are the activities and

Figure 2: Depicted as a puzzle, each component represents domains that are important in the evolution to a learning–centric university.

redefined roles of faculty and students, the conceptualization of instructional spaces and resources as learning–centered, and the alignment of programming objectives with measurable, developmental outcomes that reflect empowered learning. This diagram is presented for illustrative purposes and is intended as a formative guide for conceptualizing the relationships between the various components of this planning process.

Rapid advances in educational technology now provide the capacity to create unparalleled educational experiences which can be designed to match the individualized learning needs of students. Never before has it been possible to provide personalized, mass education. The possibility of designing experiences tailored to support the individualized learning of students is within the grasp of today's technology; yet, faculty–centric instructional practices have been slow if not resistant to taking advantage of these opportunities. These advances have the potential to narrow the widening gap between workforce expectations and the readiness of college graduates to effectively self–direct research, deploy, adapt, integrate, and manage information effectively, especially in problem–solving situations.

To address these issues, reform of current educational practices and constructs is essential. Accomplishing this objective will mean shifting the control and access to learning resources in ways that are empowering to the learner. In this model the role of faculty and the role of students in the learning process necessarily are redefined. Instructional spaces are redesigned to support active, learning–centered experiences. This learning–centric enterprise features student–centered learning in which the role of the students and their responsibilities for learning encompasses and supports more active, multifaceted engagement as a "researcher of knowledge," an active "collaborator" in the learning process, an "initiator of ideas and information," and a "solver of problems." The role of the student as simply a passive receiver of information is already passé and should be de–emphasized.

This modification in the role of students is accompanied by a re–purposing of the role of faculty as well. It forecasts that the time faculty members invest in the learning process is more likely to produce greater learning and retention when that time is devoted to developing the thinking acumen of students and their ability to apply what is being

learned. This model presumes that content can be introduced and developed more efficiently outside of the classroom and brought into the instructional setting electronically as needed. Instead of performing the role of declarative knowledge and content dispensers, faculty should see themselves more significantly as designers and architects of learning experiences. The redesign of instructional spaces parallels and supports these modified roles and engagement expectations, particularly the emphasis on active learning and empowering the learner with the tools and resources needed for learning. Transitional considerations related to these issues are addressed in **Table 2**.

To emphasize this latter point, consider the meta–messages expressed

TRADITIONAL INSTRUCTIONAL PRACTICES		21ST CENTURY INSTRUCTIONAL STRATEGIES	SOME RESOURCE IMPLICATIONS
• *Oral, declarative instruction; lecture format predominates – auditory learning emphasis*		▪ Learner centered, modules customized to reflect individual learning styles and intelligences	▪ Omnipresent information access; information search and retrieval
• *Single subject instruction; artificial time-blocks; minimal emphasis on learning/ knowledge transfer*		▪ Integrative learning; guided inquiry; active, inter-disciplinary student exploration and discovery; student as problem-solver	▪ Requires honing of efficient strategies for learning; simulation and modeling capabilities beneficial
• *Passive or one-way modes of instruction predominate*		▪ Interactive, interdisciplinary modules focused on higher order thinking and active learning	▪ Reliable, efficient learner access to digital resources
• *Individual, competitive work; passing memorization-based tests*		▪ Collaborative learning environments; demonstration of skill/knowledge mastery through formative assessment	▪ Access to collaborative learning tools; flexible spaces; examinations designed to investigate and authenticate learning
• *Teacher as dispenser of knowledge*		▪ Research and information management, collaborative, cooperative work environments	▪ Efficient learner access to information resources
▪ *Teacher does the thinking for students*		▪ Teacher as challenger and guide for developing higher order thinking skills; learning to "think like…"	▪ Ready access to expert thinkers anytime, anywhere
▪ *Ability grouping*		▪ Heterogeneous grouping – technology applied to equalize learning opportunities	▪ Fast network access and "user-friendly" publishing tools
▪ *Assessment based predominantly on knowledge recall, specific skills*		▪ Performance- and outcome-based assessment; relevant to real world expectations	▪ Longitudinal and developmental diagnostic tools for evaluating individual student progress
▪ *Discipline-specific instruction*		▪ Integrated thinking; interconnections across multiple disciplines	▪ Interactive models; cognitive-motor-sensory integration; simulation technologies
▪ *Theoretical emphasis*		▪ Theory-to-application (practice)/application to theory emphasis	▪ Simulation, immersive applications, on-demand delivery

Table 2: Transitional Instructional Strategies and Resource Implications

by traditional classroom designs in which seats are aligned in multiple rows, all facing the instructor and the controls to the room are housed in a podium for the instructor. They forecast and predispose activity centered on the faculty member as the professor and controller of knowledge and the role of students as the dependent receivers of information. These roles and expectations are reinforced by longitudinal experiences and conditioning which takes place during years of education

as a student. The re–engineering of learning spaces to help break this mold both from a symbolic as well as a functional perspective is an important component in a comprehensive plan for institutional reorganization centered on significant learning.

Administrative And Organizational Leadership Challenge

Far too little attention has been given to assessing and analyzing the nature of the academic leadership challenges triggered by this changing landscape. Even less consideration has been given to verifying strategies and practices which foster conditions that encourage a culture of organizational innovation and receptiveness to the changes[4] required to manage and overcome these challenges. Expanding operating costs, double digit tuition increases, and declining public support all point to the need to do much more with less. This formula equates to a need to rethink organizational structures, practices, operations, and alignments on a level well beyond that which can be accomplished by incremental improvements. After more than three decades of whittling operating costs at the expense of full–time faculty, institutions of higher learning are confronting a future in which options for budgetary cost containment are rapidly disappearing. No longer can we look to compartmentalized change in the present system to trim costs while maintaining the semblance of normality and focusing on the periphery of the organization to effect change. In terms of leadership, the time has arrived to re–examine core functions and re–conceptualize the modern university in terms of essential operational frameworks required for the future.

Comprehensive organizational reform offers one of the few remaining strategies to effect a long–term solution to the persistent budgetary compression confronting many public higher educational institutions. It has always been a potential solution, but like the elephant in the room, few academic leaders have opted to acknowledge or embrace it. It is potentially a potent solution but also one that is highly charged and abounds with complex and difficult tests of leadership. Absent a compelling sense of shared purpose and destiny, these challenges often are viewed largely as unmanageable and too risky. In the past it has been prudent politically to champion the need for increased funding

and then tailor budget plans in ways that do not upset the institutional equilibrium and the tradition of incremental budgeting. To illustrate, organizational practices and programming are examined and evaluated in terms of their effectiveness and contribution to the institutional mission far too infrequently. Rarer still is planning that contemplates long–range, systemic reforms to address the complex, integrated issues institutions of higher learning now confront. Instead of developing leadership strategies attuned to the realities of public university environments (e.g., shared governance, shared power and authority, faculty tenure, civil service codes, collective bargaining agreements, etc.), administrations often use these conditions as the obstacles that excuse inaction. This reality is vexing to others, such as trustees of publicly appointed boards who espouse the need to use positional command authority and tactics to make necessary institutional changes.

Before characterizing the leadership required to address this challenge, one should address the fallacy inherent in command and control approaches. The temptation exists to characterize Higher Education as a business, one that should be operated and managed as such. Based on the preponderance of business people serving on current public university boards, this attitude is not surprising. This approach leads to the rationalization that if corporate management practices were infused into public universities, they would largely solve the contemporary problems facing institutions of higher education. Yet, a closer examination of the diffuse, intricate, complex, and interconnected nature of these organizations reveals certain important insights. One such insight is that authoritative leadership practices, which emanate from positional and centralized authority and precipitate unilateral action in business, seldom produce sustainable change or movement in higher education institutions and often lead to organizational dysfunction, cocooning, and stasis. Another insight is that academic, not–for–profit institutions possess many nonbusiness characteristics. Power is shared, and a myriad of stakeholders are involved. A multitude of jurisdictions exists which when dominated by special interests tend to promulgate compartmentalized and often fragmented activity and internal competition. The work of academics is not easily commoditized. In addition, covenants exist which provide for intellectual, scholarly, creative activity, and academic freedom with the possibility of lifetime

tenured employment for faculty. In many states, there is no stipulated age for mandatory retirement. Lastly, the importance of the spirit of volunteerism that manifests itself on many campuses cannot be ignored. To many, the work that faculty, staff, and administrators perform is regarded as a calling, a responsibility to give freely of one's time to assist students or colleagues, to engage in research that advances new ideas and discoveries, to immerse oneself in creative activities, etc., all of which tangibly or intangibly benefit humankind. This work is not simply transactional, as it is in business. Because of cost, the prospect of Higher Education becoming a transactional business is untenable. Taken as a whole, these characteristics of higher education institutions produce conditions, demands, and expectations that are atypical of traditional organizational leadership challenges and certainly are unlike those found in most for–profit businesses. They are far more akin to public leadership challenges which require very different leadership acumen, skills, abilities, and strategies to effect solutions and mobilize change.

The challenges facing public higher education call for leadership [3] that is guided by a spirit of inquiry, deep listening, collective learning, systems–thinking, shared power, judicious risk–taking, and a respect for consultative and accountable decision–making. It recognizes the potential inherent in diffusing power and empowering individuals and groups to effect change within an organization. It values the importance of leading through ideas and ideals that inspire collective action across the university and fosters a shared commitment to achieving a compelling vision for the future. In addition, this leadership approach recognizes the interconnectedness and complexity of contemporary challenges, the importance of collaboration, and collective effort that leverages and aligns activities and/or functions across multiple domains to optimize resources and maximize progress. It also values the interdependence and importance attached to nurturing mutual trust, a sense of meaningful, shared interest, and shared destiny. This leadership style is also characterized by personal passion, strength of character, motivation to make a positive difference, integrity, and inner strength. Perhaps, as importantly, it is not hierarchical. It fosters conditions and attitudes which invite others to take an initiative, to take calculated risks, to lead, to empower others, and to incorporate multiple strategies for accomplishing priority goals.

Case Study—Ohio University

By midyear 2002, a combination of factors provided the opportunity to begin a comprehensive institutional migration toward becoming a learning–centric university. Ohio University had just affiliated with the new pathway for institutional accreditation with the Commission on Higher Learning of the North Central Association, the Academic Quality Improvement Project. The four projects endorsed by the campus established conditions receptive to initiating this transition. These conditions were enhanced further by the approval of the faculty–led, new general education program in May of that year. A new provost joined the university in July with espoused goals of 1) improving undergraduate education; 2) advancing opportunities that foster active and/or applied learning and critical thinking; 3) refocusing the institution systemically on learner–centered educational practices (i.e., organizing for learning). This agenda was widely endorsed. It was launched through a series of inclusive active listening, visioning, and discussion sessions which ranged from campus–wide meetings to individual unit meetings. This process engaged all sectors of the university (e.g., Facilities Management, Information Technology, Advancement, Residence Life and Housing, Student Affairs, Admissions and Financial Aid, colleges, and academic departments, etc.) and groups (faculty, students, staff, administrators). It focused on creating a shared vision and understanding of the numerous challenges. Three questions were posed, which served as catalysts for this process. They were:

- What does "learning" mean to you, especially your assumptions about how people learn?
- What are the criteria and indicators that you use to evaluate your own learning?
- "Organizing for Learning" suggests changes in the life and/or organization of a university. What changes would you recommend to better position our university as a learning–centric institution?

This process fostered the development of a shared vision for engaged learning at Ohio University and provided the impetus for examining potential organizational and operational assumptions and practices that

act as potential impediments to learning. **Figure 3** summarizes the initiatives that evolved from these efforts. Various ideas and plans were

Figure 3. Illustrates the array of initiatives planned and launched within an eighteen month timeframe. Most of these initiatives were launched and lead by groups of faculty and staff from across the university. The resources that made these initiatives possible were derived from repurposing people's time and efforts and redirecting budgetary expenditures to activities that made a greater difference in learning opportunities.

advanced successfully. They included expanding active and/or experiential learning opportunities for students, establishing college–based residential learning communities, fostering faculty development, increasing student participation in undergraduate research and creative endeavors, improving inclusiveness, global awareness and appreciation for diversity on campus, increasing student retention, building community, encouraging a culture of learning assessment and accountability, prioritizing international initiatives, implementing a new general education curriculum, and developing a high performance and service excellence information technology organization that better serves

the focus on engaged learning. The progress achieved was considerable and occurred in less than eighteen months. In large part momentum for change and improving the university reflected the grass root support and leadership that was cultivated among faculty, staff, and students. The mobilization and empowerment of members of the university community to advance this shared vision was instrumental in the rapid progress that was made. Through the collective efforts of everyone involved, these agendas were activated in ways that have proven sustainable. They continue to yield meaningful results within the university, even after a major change in institutional leadership.

Lessons Learned

By no means exhaustive, these closing thoughts are shared to stimulate further discussion and debate. The essence of this comprehensive challenge involves integrating all sectors of the university to support and focus on the core—learning, creativity, innovation, and higher student achievement. The ever–changing and increasing complexity of modern life has continued to fuel rising expectations of a university education. These expectations need to be met. Understanding and internalizing the complex processes involved in how people learn holds an important key to redesigning institutional frameworks. Enlightened and inspirational leadership is another important key in the pathway to success. Ohio University embarked on establishing a leadership role and a commitment to making the transformation to a learning–centered institution. The power to sustain the momentum, to change our world and remodel our conception of education rests with leaders courageous enough to lead such an endeavor and inspire organizational change and leadership from within. The lessons learned are framed as predictions for the future:

- The future will belong to public universities that optimize resource utilization to deliver greater student achievement and public value for state investments through innovative and resourceful initiatives that advance the caliber and productivity of learning achieved at these institutions.
- The future will belong to universities that can solve the following

conundrum: how to integrate what we know about human learning to advance learning productivity, while capitalizing on the vast potential provided by advances and investments in technology to produce higher order learning outcomes and achievement commensurate with stakeholder expectations, and do so at less cost.

- The future will belong to public universities led by individuals who engage in catalytic leadership practices that build on the strengths and unique character of institutions of higher learning (e.g., shared governance, distributed power, multiple jurisdictions, etc.) and inspire collective action that achieves compelling goals.
- The future will belong to universities that can create and sustain an empowering culture that embraces change, innovation, creativity, and institutional self–accountability. This culture will need to encourage and reward creativity and sensible risk–taking and experimentation throughout the organization.
- The future will belong to universities that can make a successful transition from the outdated practice of sorting and stratifying students to creating learning opportunities and adapting them to actualize the full potential each student brings to the institution.

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Endnotes

[1]The perspectives shared in this article are intended to be provocative—to inspire debate and intellectual discourse. I regard them as a call for reflective thinking, comprehensive questioning of assumptions, and collective responsibility for improving public higher education.

[2] Taxonomy of Significant Learning involves foundational knowledge, application, integration, human dimension, internalization (sense of purpose, meaning), and learning how to learn (capacity for self–education). Greater explanation of this concept can be found in: Fink, L.D. (2003). A taxonomy of significant learning. In L.D. Fink, *Creating Significant Learning Experiences, An Integrated Approach To Designing College Courses,* pp. 27–33. San Francisco: Jossey–Bass.

[3] Operational definition of critical thinking—"To have reasoned control over and self–awareness about one's conscious and subconscious thought processes (e.g., beliefs, values, and inferences). The ideal of critical thinking is to learn to think for oneself, to gain command over one's thought processes, and engage in reflective practices designed to improve one's thinking based on standards and elements of intellectual reasoning. It entails a commitment to analyzing and evaluating one's thinking, to question when it is rational to question, to believe when it is rational to believe, to conform when it is rational to conform. Critical thinkers routinely apply the intellectual standards (clarity, accuracy, relevance, logic, breadth, precision, significance, completeness, fairness, and depth) to the elements of reasoning (purposes, questions, points of view, information, inferences, concepts, implications, and assumptions) in order to develop and improve the quality of one's thinking and intellectual traits (intellectual humility, autonomy, integrity, courage, perseverance, empathy, fair–mindedness, and confidence in reason)." This definition is derived from: Paul, R. and L. Elder, (2001). "The parts of thinking." In R. Paul and L. Elder, *Critical Thinking, Tools For Taking Charge Of Your Learning And Your Life*, pp. 49-57. Upper Saddle

River: Prentice Hall.

[4]Creating an academic culture that supports change and innovation mandates leadership that tacitly imparts permission to question the *status quo*, peer norms, and practices. It involves the recognition that individuals must be empowered to think independently and creatively, to rise above the conventional tendency to conform to group attitudes and behaviors, and to be recognized positively for it.

Biography

Stephen J. Kopp served as provost of Ohio University from 2002–2004. He is professor of biological sciences and currently is serving as a special assistant to the Chancellor of the Ohio Board of Regents. Prior to joining Ohio University, Kopp served as the founding dean of The Herbert H. and Grace A. Dow College of Health Professions at Central Michigan University from 1997 to 2002 and as the founding dean of the College of Allied Health Professions at Midwestern University (1992–1997). From 1979 to 1992 he served in a variety of academic positions at Midwestern University, including administrative roles as chairman of the Department of Physiology for twelve years and assistant director of the NMR Laboratory for six years.

Kopp earned a Ph.D. Physiology from the University of Illinois in 1976 and a B.S. degree from the University of Notre Dame in 1973. His areas of scientific and scholarly expertise include basic biomedical research in diabetes, cardiovascular physiology, cardiac muscle biochemistry, myocardial and cerebral ischemia, and cellular mechanisms of hypertension and diabetes treatment. Areas of applied scholarly activity include public health surveillance, health literacy, applied learning and critical thinking, learning space design, and qualitative and quantitative learning outcomes assessment. Kopp has authored or coauthored over 85 peer–reviewed articles, book chapters, and publications. He has also delivered a number of invited keynote addresses in various countries, with topics ranging from "Learner Centered Education and Opportunity in the Knowledge Age" to Organizing for Learning/Critical Thinking Centric Education to "P–31 NMR Studies of Cerebral Metabolism." He may be reached at kopp@ohio.edu.

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Call For Papers

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Call for Papers

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Refereed Papers

Uses Of Reworked Pretests In Physics By Inquiry Classes

Gordon J. Aubrecht, II
Ohio State University—Marion

Abstract

Physics by inquiry is a course for prospective teachers taught with the expectation of student mastery of the subject through hands–on experiences and reasoning on the basis of that experience in new situations. Students in physics by inquiry classes are given many occasions to obtain feedback. For many years, we asked students to do a pretest at the beginning of each section in order to promote thinking about the subject of the section before the students begin the experiments. Several years ago, we modified the pretests so that students rework the pretests after doing the section. Students can see clearly how their ideas have changed as a result of their experiences. Students for the first time have cited the pretests as an important element in their learning. I shall give examples of the way pretests are used and show how students' ideas have been changed.

1. Introduction

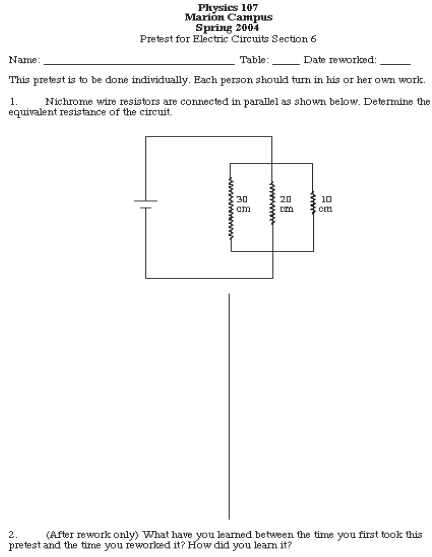
Ohio State University offers three physics by inquiry courses: Properties of Matter, a module dealing with mass, area, volume, density, and concentration; Electric Circuits, a module dealing with current and potential difference in the context of connections of batteries, bulbs, and wires; and Optics and Astronomy, several modules dealing with single and multiple sources of light, shadows, and effects of the motion of the moon and sun. We use the Physics by Inquiry books (McDermott et al., 1995, 1995a) as course textbooks. Each module includes many sections of the text. A section deals with a small part of the topic; for example, one section of the text's module "Astronomy by Sight" is "Phases of the Moon." Typically, fewer than 100 pages of the text will have been covered by the end of a one–quarter course.

As may be seen from the syllabi,[1] the physics by inquiry courses are taught with students in groups (of 3 or 4). They gain almost half their fixed number of points by attending, doing homework, doing journals, and reworking the pretests. The remaining points, approximately 53%, come from the exams.

2. Pretests And Reworking

Pretests have been used for a long time as an introduction to every new section of the module being studied. Students did them but never returned to reconsider their answers. Faculty sometimes examined the pretests to see the sorts of changes in student thinking that occurred by comparison with answers on the exams, but little use was made of the pretests beyond this examination. A few years ago, a suggestion by one of the OSU faculty members teaching physics by inquiry led us to revamp the pretests to make them into a greater part of the student learning experience. In retrospect, this change is so advantageous that it is hard to believe we hadn't implemented it long before.

Figure 1 shows an example of the appearance of a pretest. The



Physics 107
Marion Campus
Spring 2004
Pretest for Electric Circuits Section 6

Name: _____ Table: ____ Date reworked: ____

This pretest is to be done individually. Each person should turn in his or her own work.

1. Nichrome wire resistors are connected in parallel as shown below. Determine the equivalent resistance of the circuit.

2. (After rework only) What have you learned between the time you first took this pretest and the time you reworked it? How did you learn it?

Figure 1: The appearance of the pretest; pretest for Section 6 of Electric Circuits

student writes the answer to the left before beginning work on that section. After completion of the work, the student rewrites the answer on the basis of knowledge gained. Many students have commented on the value of seeing the differences in their before and after answers. In the journal we asked the question "What do you find helpful?" Before the change in the use of pretests, there were few answers mentioning the pretests, and those that did were similar to this student answer: "Probably the only thing that I don't yet see the significance of is the pretest." After the change, many comments were offered. For example: 1) "All in all the pretests probably help the most. Because I can compare what I already knew with the concepts that I have learned. So it is a definite way to see what I understand, and what I don't. I have something right in front of me to track the concepts." 2) By a different student, "Using pretests at the start of a section help[s] me to get thinking on what is coming up. When I go back to do the post–test, I see what I had learned during that section. Especially I learn how to explain my reasonings better."

The foregoing student comments assure me that there has been a change in student perception of the pretests. In **Figures 2–6** (consult **Figures** at the conclusion to this paper), we present a few examples of actual reworked pretests. Note the changes apparent between the initial understanding and that after reworking in these examples.

To illustrate the changes in the explanations that show how the student's ideas have changed, one needs only compare before and after (note that sometimes the "before" is left blank). For example, in one reworked pretest with questions as given in **Figure 5** (but not shown here because the writing is hard to read), before instruction the student wrote, "We know that the voltages in a series add up to equal the total voltage from Ex[periment] 6.3 and . . . voltage in parallels are split in half."

This answer shows several interesting things (similar connections are observed also in **Figures 2–5**). First, the student referred to an experiment in giving the answer prior to working the section. This is significant because in the first few pretests such connections to experimentation had not been made. Additionally, the student made the simple assumption that the sum of voltages of the two parallel elements add to the total voltage. This is an echo of the student's

experience with Kirchhoff's First Rule (the sum of currents into a node is equal to the sum of currents out of a node) and the student's previous statement that the sum of the potential differences adds to the total potential difference. It is implied, correctly here, that this result is caused by the battery. Even though the student was incorrect, the reasoning has been tied to experience, just as we hope to see.

In reworking the answer, the student wrote, "Between 1 and 2 there is 3 V because the batteries' voltages add up. Two and three .75 V because it is in a parallel branch, so 2 and 4 have .75 V because it is in parallel to branch 2/3." Clearly, there has been a great change in the student's approach. Why? The student answered the "what has changed?" question by saying, "From experiments and checkpoints I have learned that elements in parallel have the same voltage as shown in that it agrees from [sic] what I've learned from Kirchhoff's Second Rule." This point is important and difficult to believe for students who have not had the experience of measuring the potential differences in real circuits. Kirchhoff's Second Rule says that the potential gains and losses around any closed path add to zero. This rule tells us that the potential differences across parallel elements must be the same. This student appealed to experiment again as the highest authority and to the checkpoints, which assures me that I am doing my job.

3. Assessment Of Student Learning In Physics By Inquiry By The Students Themselves

The final course grade represents a summative evaluation of a student's learning. In the journals, we also ask for formative evaluations. One such question is, "Do you think you've learned new ways of learning that will be of use in other contexts? Please explain how, or why not." The pretests now figure prominently in the answers.

Student answers included sentiments such as this: "I love the 'raising curiosity' before beginning to solve a problem. When we are given a pretest to see what we know, when I don't know, I want to learn even more." Another student answered, "I like these because when I'm done with the section in the book I can see what I have learned from it." One student saw one of the reasons we adopted the change, saying, "The pretests are a nice way of studying without knowing it."

Perhaps the deepest answer is this one: "The pretests do play a role in helping students learn the material. I think it helps because we take our present knowledge and try to apply it to the experiments we will do in the chapter and then later on we can see if we were right. This helps in two ways; one it slows us down and makes us think about things before we just right [sic] the answers, and two it helps us review what we have learn [sic] . . . proving that school is not a waste of money."

One of the difficulties with the inquiry course is its novelty to students, which gives rise to an emotional reaction. In one case, a student wrote, "The following adjectives can be used to describe this course, not in any particular order: frustrating, rewarding, challenging, enlightening, fun, difficult, different, bizarre, interesting, stimulating, baffling, intimidating, entertaining and gratifying. Those are all of the things I have felt during this quarter. Where else can you find a course that causes you to run through such a gamut of emotions? If you like variety, then this is the course for you. If you aren't afraid of a challenge, this course is for you. If you can triumph over being defeated, then this course is for you. If you [like] trying new things, this course is for you."

Because of the structure of having to belong to a group, people skills are also discussed in end–of–quarter evaluations. One student wrote that "this class has greatly changed my ways of looking at the world. First, I have realized that in the world people have varying levels of knowledge and common sense. I have learned that there are some with a vast knowledge of many subjects and I have learned that in life one will encounter and need to work with those who have very little common sense or a lack of knowledge in certain subjects. Often, this lack of knowledge and common sense is quite amazing! Second, I have learned that when faced with a challenge, you make the best of it and see what you can learn in the end."

In summary, we have changed the pretests, originally used merely to introduce students to ideas to come and pique curiosity, to make them an important educational component of the course. Pretests help students come face to face with the central theme of the section and master it. The course is aimed at fostering student mastery of the subject. The pretests now take more student time and thought and help the student attain mastery in several ways. Pretests give me, the teacher, a final chance to identify students who need help on the material in a

section and proffer that help. Students receive points for a reworked pretest only if they get it completely correct. I return the pretests with post–it notes with hints and questions as many times as necessary to have the student complete the rework satisfactorily. Pretests give students a demonstration of how their thinking has been changed by their experiences. They provide a summative evaluation for the student of the section. They convey a sense of competence and can boost student self–confidence. Only if a student chooses not to rework the pretests is there no gain.

I leave the last words to a student who initially struggled with the course: "I am truely [sic] saddened that this quarter has come to an end. I have enjoyed this class so much and have a new respect for the process of true learning and understanding. I am not suggesting that I have come to understand all or am some type of authority on the subject; but I can say that this class has ignited something in me. This class captured my interest and I hope that when I become a science teacher, I will be able to impliment [sic] this unique st[y]le in my classroom. There was an incident in class several weeks ago that solidified for me the importance of understanding: not going into too much detail, a student was able to recognize which 'technique' to use, which numbers to 'plug in' but had ZERO understanding about the process and its meaning relative to that particular problem. I said to myself that I would never want to be satisfied with that type of 'understanding.' I wouldn't want my children exposed to such a stradegy [sic] to achieve a 'desired' outcome: a grade, and be satisfied or comfortable with the fact that they have absolutely no understanding of the subject. I am aware that this policy is quite prevalent in our school system and the unfavorable results are plain for all to see. It's time for a change!"

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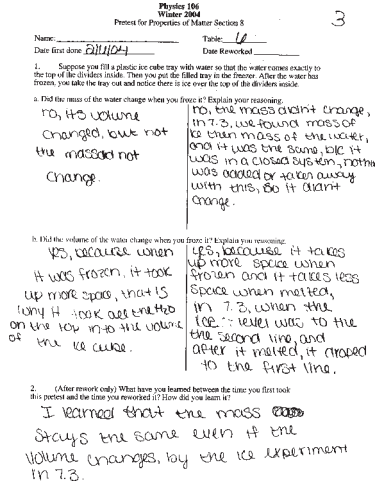
McDermott, L. C. et al. (1995). *Physics By Inquiry, Vol. I: Properties Of Matter; Heat And Temperature; Light And Color; Magnets; And Astronomy By Sight: The Sun, Moon, And Stars*. New York: J. Wiley and Sons.

McDermott, L. C. et al. (1995a). *Physics By Inquiry, Vol. II: Electric Circuits, Electromagnets, Light And Optics, Kinematics; And Astronomy*

By Sight: The Earth And The Solar System. New York: J. Wiley and Sons.

Endnote

[1]Current syllabi may be examined at my website, URL http://www.physics.ohio–state.edu/~aubrecht.



Physics 106
Winter 2004
Pretest for Properties of Matter Section 8

3

Name: _____ Table: 6
Date first done 2/11/04 Date Reworked _____

1. Suppose you fill a plastic ice cube tray with water so that the water comes exactly to the top of the dividers inside. Then you put the filled tray in the freezer. After the water has frozen, you take the tray out and notice there is ice over the top of the dividers inside.

a. Did the mass of the water change when you froze it? Explain your reasoning.

no, the volume changed, but not the massed not change.

no, the mass didn't change, in 7.3, we found mass of ice then mass of the water, and it was the same, bic it was in a closed system, nothing was added or taken away with this, so it didn't change.

b. Did the volume of the water change when you froze it? Explain you reasoning.

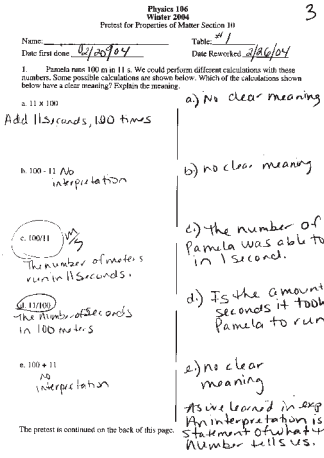
yes, because when it was frozen, it took up more space, that is why it took all the H2O on the ice in to the volume of the ice cube.

yes, because it takes up more space when frozen and it takes less space when melted, in 7.3, when the ice was level with to the the second line, and after it melted, it droped to the first line.

2. (After rework only) What have you learned between the time you first took this pretest and the time you reworked it? How did you learn it?

I learned that the mass stays the same even if the volume changes, by the ice experiment in 7.3.

Figure 2: Reworked pretest for Section 5 of Properties of Matter.



Physics 106
Winter 2004
Pretest for Properties of Matter Section 10

3

Name: _____ Table: #1
Date first done 2/20/04 Date Reworked 2/26/04

1. Pamela runs 100 m in 11 s. We could perform different calculations with these numbers. Some possible calculations are shown below. Which of the calculations shown below have a clear meaning? Explain the meaning.

a. 11 x 100
Add 11 seconds, 100 times
a.) No clear meaning

b. 100 - 11 No interpretation
b.) no clear meaning

c. 100/11
The number of meters run in 11 seconds.
c.) the number of meters Pamela was able to run in 1 second.

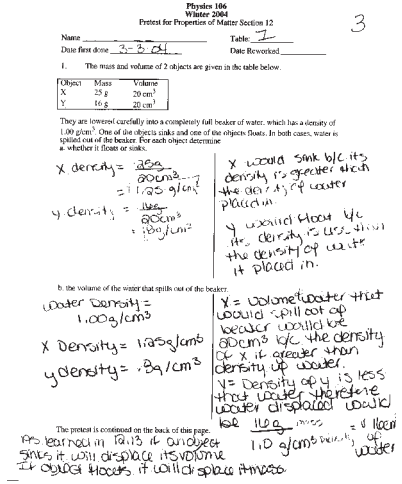
d. 11/100
The number of seconds in 100 meters
d.) Is the amount of seconds it took Pamela to run 1 meter

e. 100 + 11
No interpretation
e.) no clear meaning

As we learned in exp. 10.1, An interpretation is a statement of what the number tells us.

The pretest is continued on the back of this page.

Figure 3: Reworked pretest for Section 10 of Properties of Matter.



Physics 106
Winter 2004
Pretest for Properties of Matter Section 12

3

Name _____ Table: 7
Date first done 3-3-04 Date Reworked _____

1. The mass and volume of 2 objects are given in the table below.

Object	Mass	Volume
X	25 g	20 cm³
Y	16 g	20 cm³

They are lowered carefully into a completely full beaker of water, which has a density of 1.00 g/cm³. One of the objects sinks and one of the objects floats. In both cases, water is spilled out of the beaker. For each object determine
a. whether it floats or sinks.

X density = 25g / 20cm³ = 1.25 g/cm³
X would sink b/c its density is greater than the density of water placed in.

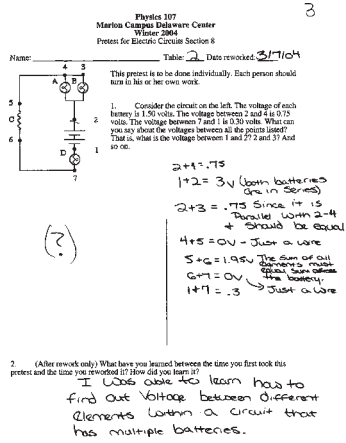
Y density = 16g / 20cm³ = .80 g/cm³
Y would float b/c its density is less than the density of water it placed in.

b. the volume of the water that spills out of the beaker.

Water Density = 1.00 g/cm³
X Density = 1.25 g/cm³
Y density = .8 g/cm³
X = Volume of water that would spill out of beaker would be 20cm³ b/c the density of X is greater than density of water.
Y = Density of Y is less than water therefore water displaced would be 16g mass / 1.0 g/cm³ density = 16 cm³ of water

The pretest is continued on the back of this page.
As I learned in 10.3 if an object sinks it will displace its volume
If object floats it will displace amount

Figure 4: Reworked pretest for Section 12 of Properties of Matter



Physics 107
Marion Campus Delaware Center
Winter 2004
Pretest for Electric Circuits Section 8

Name: _____ Table: 2 Date reworked: 3/7/04

This pretest is to be done individually. Each person should turn in his or her own work.

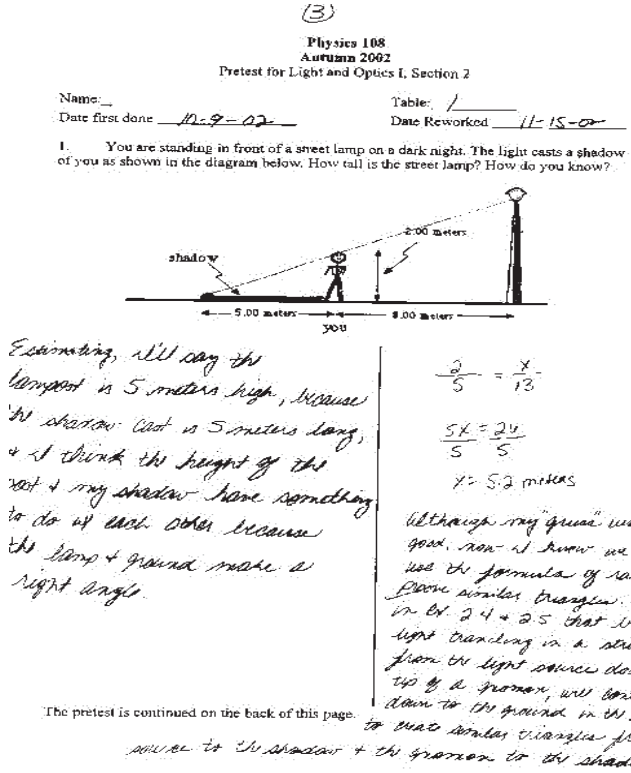
1. Consider the circuit on the left. The voltage of each battery is 1.50 volts. The voltage between 2 and 4 is 0.75 volts. The voltage between 7 and 1 is 0.30 volts. What can you say about the voltages between all the points listed? That is, what is the voltage between 1 and 2? 2 and 3? And so on.

2+4=.75
1+2= 3V (Both batteries are in Series)
2+3 = .75 Since it is Parallel with 2-4 + Should be equal.
4+5 =0V - Just a wire
5+6 = 1.95V The sum of all elements must equal sum across the battery.
6+7 = 0V Just a Wire
1+7 = .3

2. (After rework only) What have you learned between the time you first took this pretest and the time you reworked it? How did you learn it?

I was able to learn how to find out voltage between different elements within a circuit that has multiple batteries.

Figure 5: Reworked pretest for Section 8 of Electric Circuits



(3)

Physics 108
Autumn 2002
Pretest for Light and Optics I, Section 2

Name:_ Table: 1
Date first done 10-9-02 Date Reworked 11-15-02

1. You are standing in front of a street lamp on a dark night. The light casts a shadow of you as shown in the diagram below. How tall is the street lamp? How do you know?

shadow
2.00 meters
5.00 meters
8.00 meters
you

Estimating, I'll say the lamppost is 5 meters high, because the shadow cast is 5 meters long, & I think the height of the post & my shadow have something to do w/ each other because the lamp & ground make a right angle.

$\frac{2}{5} = \frac{x}{13}$

$\frac{5x}{5} = \frac{26}{5}$

$x = 5.2$ meters

(although my "guess" was pretty good, now I know we can use the formula of ratios to prove similar triangles. We learned in Ch. 2 & 2.5 that because light traveling in a straight line from the light source down to the top of a pronom, will continue down to the ground in the same angle to make similar triangles from the source to the shadow & the pronom to the shadow.

The pretest is continued on the back of this page.

Figure 6: Reworked pretest of Section 2 of Light and Optics

Biography

Gordon J. Aubrecht, II, is professor of physics at OSU—Marion. He graduated from Rutgers University summa cum laude and earned his graduate degree at Princeton University. His original research interest was particle physics theory, but he is currently studying how students understand atoms, nuclei, and the interaction of light and matter. He was awarded the Distinguished Service Citation of the American Association of Physics Teachers in 1994, was elected a Fellow of the American Physical Society in 2000, and was presented with the John B. Hart Award for distinguished service from the Southern Ohio Section of the American Association of Physics Teachers in 2002. He received the AURCO Distinguished Service Award in 2004. In 2004, Aubrecht also received the Howard Maxwell Award for Distinguished Service from the Ohio Section of the American Physical Society and the Louis Nemzer Award from the Ohio State Chapter of the American Association of University Professors for his defense of academic freedom. He is the immediate past president of AURCO.

Inquiry Experience And Students' Expectations About Future Teaching

Gordon J. Aubrecht, II
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Abstract

Inquiry classes involve student experimentation and reasoning from their experiences. The aim in teaching inquiry classes in physics is mastery, and mastery requires reflection. Reflection is encouraged in many ways—in group discussions, during checkpoints, and so on. A weekly journal is used to insure that out–of–class reflection occurs. One journal question deals with student conceptions of their expected use (or nonuse) of inquiry techniques in their own classrooms in the future. I report on students' answers to this question over our decade–long experience in running this course, which reflects how much or how little the student expects to use the techniques.

1. Introduction: Why Is Inquiry Important In Science?

Children have natural curiosity. But after a few years of school, children seem to become less curious. Elementary and middle school teachers are required to know so many things about so many subject areas that they have little likelihood of becoming science experts. Perhaps it is because of this lack of expertise that many teachers discourage their students from asking questions of them and of nature. Teachers' lack of subject–matter and confidence in science may lead them to interpret students' questions about content as a questioning of the teachers' authority.

I teach three inquiry courses in physics, each of which is based on the research of the Physics Education Group at the University of Washington (McDermott, 1991, 1993). Many prospective teachers on my campus take these physics courses, and their prior experience is that teaching means telling. They are unaware that any other way of teaching exists. They have learned to, and therefore they expect their students to

learn to, cram, memorize, and immediately forget.

Physics by inquiry attempts to break this cycle by providing an alternate experience for prospective teachers. The course emphasizes the scientific approach to nature—providing experiences from nature, discussing those experiences, proposing models that explain those experiences, evaluating the models by doing more experiments, etc. Because we rely on student experiences, and the students themselves set up the experiments, they have personal, kinesthetic knowledge of their subject.

We believe with Zull (Zull, 2002) that the role of concrete experience must be supplemented by reflection for learning to occur. We build on the learning cycle, **Figure 1**, which Zull argues is effective as a result of its reflecting the structuring of connections among areas within the brain.

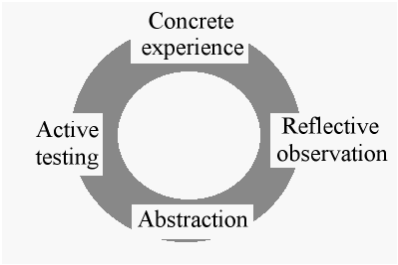

Figure 1: The learning cycle

In Section 2, we describe course conditions. In section 3, we exhibit a selection of typical answers to one journal question, and in section 4 we summarize the results of our investigation.

2. Physics By Inquiry Course Organization

Ohio State University offers three physics by inquiry courses: Properties of Matter, dealing with mass, area, volume, density, and concentration; Electric Circuits, dealing with current and potential difference in the context of connections of batteries, bulbs, and wires; Optics and Astronomy, dealing with single and multiple sources of light, shadows, and effects of the motion of the moon and sun. We use the *Physics by*

Inquiry books (McDermott et al., 1995, 1995a) as course textbooks. Typically, fewer than 100 pages of the text will have been covered by the end of a one–quarter course.

Physics by inquiry courses are taught in a way that encourages students to cooperate (students must work in groups) and tries to assure student mastery of the topics. The syllabus they are given the first day of class shows students that only about half (53%) the final course grade comes from examinations. The remainder of the grade is based on attendance (which is important for both understanding and group success), homework, reworked pretests, and journals.

The courses are taught with concept mastery in mind. While complete mastery is not always gained, the average course grade is near a B+. The research basis of the materials is the elicit–confront–resolve model of learning. Most students come with ideas, ideas which are brought forward by asking students to make a prediction (the question being determined by research on student thinking about the subject to elicit student answers inconsistent with reality), by doing an experiment that shows that the actual working of nature is discrepant from the expected student response, and by helping students build a model that encompasses the experimental results, thus resolving the apparent discrepancy. Models are continually revisited and form the basis of student reasoning on the topics.

One important feature of the course is a complete lack of lecture. Teachers interact with students mainly through discussions at appropriate points, called checkpoints in the book, and with the individual groups. We proffer help as needed, of course. Students are led to construct their own and their group understanding of the phenomena being studied. The discussions follow from questions the instructor bases on the material covered since the previous checkpoint. Reflection is supported in several ways: in group discussions, in questioning at checkpoints, in reworking of pretests, and in the journal.

3. The Journal Questions About Inquiry

As noted above, the journal is an important component of the course. In it, we solicit answers to both content and course–related questions. The journal topic for week 6 provides information on the students'

likelihood of using inquiry themselves when they become teachers. The questions are posed as follows: "For the following four questions only, imagine you are an elementary or middle school teacher. (1) What physics concepts taught so far in this class could be taught in your classroom? Would you teach the concepts the same way you learned them or modify their presentation depending on the age of the students? If you modify, how would you do that? (2) How would you adapt the structure of the material to work in a time period of about 45 minutes each day? (3) Would you use the same inquiry method of teaching as the instructors are doing right now? Why or why not? Would it be necessary to modify the teaching method also? (4) How would you keep elementary or middle school students on track in a group effort? How would you determine whether the group is functioning, and how strict you should be with students who are disrupting the group and/or falling behind?"

In this paper, we consider the student responses only to the underlined questions contained within the larger set of questions. I categorized the responses into the following six categories:

- Yes
- Yes, but . . . [something more than adoption as used in our class, but without major changes]
- Yes, but have some lecture
- Have students do some experiments, but teach mostly by lecturing, giving demonstrations
- Probably not, absolutely not
- Don't know (what the student would do if a teacher).

In addition, I noted whether students did or referred to experiments or demonstrations in their response.

The responses of 251 students fall into categories as shown in **Table 1** and **Figure 2**. About one–quarter plan to use the unmodified inquiry method, while one student in six plans to use the method with slight modification. Only about one–tenth of the students are adamantly opposed to using the method. To provide more context, selected student statements that fall into each category are provided below. The range of the answers gives a sense of student thinking that the summary table cannot.

don't know	yes	yes, but ...	yes, but some lecture	some exp., mostly lecture, demo	probably not, absolutely not
10	60	40	47	74	17
			Total: N = 251		
4%	24%	16%	19%	29%	7%

Table 1: Student responses to whether they plan to use inquiry in their own future classes

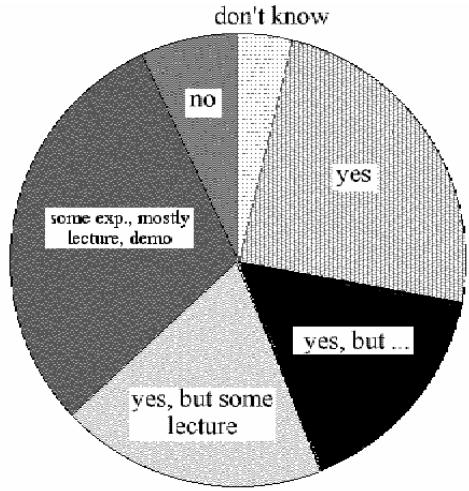

Figure 2: Student responses to whether they plan to use inquiry in their own future classes

Yes

■ "I can't think of a better way to teach science in general. Hands on experience is something I think would promote student interest as well as learning."

■ "I would use the same class structure as we are using now. It gets really frustrating at times. . . . But I'm learning a lot because of the way that the class is set up."

■ "I realize now why it is so important to communicate in a simple,

clear, and precise manner; it is easy to get lost, lose interest and understanding when the person explaining or demonstrating throws in everything and the kitchen sink and most of the babble. . . ."

- "I think using the inquiry method could be just as effective on younger students as it is on college students, so I would probably use it."

Yes, But

- "The way it is taught in class seems to be one of the most effective but I think I would step down on some of the more complex parts (such as math)."
- "I would let the students learn on their own to a certain point but as previously stated i [sic] would try to help the students as much as they needed."
- "I would use the inquiry method but I wouldn't allow students (groups of students) to work at their own pace."
- "I think I would not lecture, but give some guidelines and something to think about before they perform the experiments."

Yes, But Have Some Lecture

- "I think we would work as one big group instead of more than one since they will probably be less likely to get work done and understand concepts on their own or just working with each other."
- "I would modify the material, I would leaev [sic] it to major concepts only, and I wouldn't put as much emphases on a complete understanding, as I would on just knowing the material."
- "I would do it much the same way done in this class but probably demonstrate a few things in each section first before turning them loose."
- "Students enjoy demos or lab but they need to be structured and expectation set from the beginning and the paper work to keep track would be tremendous."
- "I would discuss the main points of the concept but still have them try it. I feel that experimentation is still a good method."

Have Students Do Some Experiments, But Teach Mostly By Lecturing, Giving Demonstrations

- "I would need to show the students how to set–up each experiment and work through it with them, rather than making the small groups try to figure it out entirely on their own with checkpoints only at the end of a section."
- "I would have to be heavily involved in the experimental side of the concepts and more ask the class what they think will happen when I do parts of the experiment and why. . . ."
- "Just teaching them the basic idea of how these things work and having them perform some exercises to see the ideas in motion would suffice."
- "I would still use prediction but by raise of hand or group discussion. Then perform the experiment, check against predictions and discuss reasons for results."
- "I don't think that I would require them to do as much thinking on their own; I would definitly [sic] help them out a lot more."
- ". . . the teacher would have to just tell the students what certain things are. . . ."
- ". . . less inqury [sic] and more demonstration, allowing the students to tell what happened. . . ."
- "I need to give them information instead of let [sic] them think because they are too young for that method."
- "I could lecture one or two days, and then let the other three days be hands on days."
- "I don't think that it would be necessary for me to use inquiry with my students because it might be too hard for them to think of things on their own, however if they understood the concept well enough then I would go into some inquiry."
- "I just don't think it feasible, so it would become a demonstration in front of the class asking questions and having the students assist me as one large group to figure out the answers, having me perform a couple of the different ideas."

Probably Not, Absolutely Not

- "I will not [be] going to use same inquiry method of teaching as the instructor[s] are doing now because once they do the experiment and they get that this thing work[s] like this and then [the] instructor come[s] and ask[s a] question and they change most of all way of thinking. . . ."
- "I think that the inquary [sic] idea is a joke. I do not feel that is benificail [sic] at all."
- "I would teach them the concepts through lectures and class demonstrations."
- "i [sic] would lecture just because of time restraints. i [sic] love this inqurery [sic] method and it helps me to keep motivated not having to sit aroulnd [sic] till everyone got the concept."
- "I would not use the same inquiry method of teaching as the instructors are right now. Why, because it would be too compilicated [sic] for the students."
- "I would not use the inquiry method. I would probably just instruct while they tried doing it themselves at their desks, and then asked them questions as a class, like why do you think that the candy had the same mass of the square nut?"
- "I do not think that elementary kids could find these things out on their own."
- "I wouldn't use the inquiry method . . . just because it takes too long for a class of 30 younger students to grasp. I would teach with experiments as well as lectures and explanations."

4. Summary

We have not been as successful as we might have hoped at changing students' hearts and minds. One bright spot (but probably to be expected) is that 62% mentioned doing experiments or having students do experiments in their future classes. Since the class so emphasized experimentation, it may not be a surprise that students would mention it in the journal. However, informal conversations indicate that few students would have thought of mentioning experiments in a classroom context at all before their experiences in the physics by inquiry class.

The amount of time spent in the course plays an important role in

student responses. We have noted that the fourth or fifth week is the nadir—many students seem ready to call it quits. After this, though not on a predictable schedule, many students change their minds and come to see things differently. A student writes, "Some days I really hate going in for class. But lately I have felt better and have actually enjoyed it. I liked it more when I felt as if I had really found out something ahead of where we were. I don't know if it happened later in the quarter because I was more used to how it all works or if I am just understanding it more." Ideally, we would like to have two quarters to influence the students, but many students (those we weren't able to reach before the end of the course) opt out of a second quarter. Time also plays a role in coming to terms with the experiments, as it should. It takes time to assimilate new ideas which come rapidly in the physics by inquiry courses. An example of this effect is seen when one student writes, "When I look back at some of the experiments we did, I think to myself 'why did I have such a difficult time grasping the concept?'"

Has the class succeeded in its aims? Not fully, to say the least. On the optimistic side, about 25% of students say they would apply the inquiry method when they become teachers, and another 16% are interested in using it, but with minor modifications. On a final evaluation in the journal, one student writes, "I feel inquiry based instruction is very open. We learn everything by doing it ourselves, and if there is something we have a question on, it is usually figured out by thinking up an experiment to try it out. There are no study and answer kind of sheets, or tell all formulas." We regard this student's answer as a great success for the course. She has taken responsibility for her learning. She appeals to the idea of experiment as the final arbiter of answers about how nature works. She recognizes she can design an experiment herself to address her particular questions about nature.

On the pessimistic side, about 50% of the students would partly or mostly lecture, and almost 10% were completely turned off by inquiry (at least as we have practiced it here). Even those who are convinced have mixed feelings, as exemplified by this student's comment in the final journal: "I know what the course is designed to do, and I think to an extent it works, but since it is so different from how we're traditionally taught, many people got frustrated and may not have gotten as much out of the class as possible. This type of curriculum stimulates those

who learn in a different manner than by hearing or reading. Many people learn best with a hands–on process. This stretches those who learn in other ways. You are right in that we will always remember this course. I am still debating as to whether I liked it or not to be honest."

At the very least, physics by inquiry has demonstrated to students that there are alternatives to lecture, that teaching needn't always be telling. Students may have heard about this before, but in my class they live through the actual experience. I have had modest success in changing some students' minds about what constitutes teaching. To me, these are important outcomes.

In this paper, some reasons students give for considering adopting or not adopting inquiry techniques in their own future classes have been identified. One important unanswered question here is whether these students who say they will use inquiry techniques actually will use them in their own classes. Another research question is whether students are more likely or less likely to adopt inquiry techniques after they take education courses. These considerations should be the subject of future research. The ultimate proof of the effectiveness of this pedagogy will come only when these teachers' own students begin to arrive ready to be inquirers in college classes.

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American And Romanian Student Approaches To Solving Simple Electricity And Magnetism Problems

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Abstract

A student learns physics differently depending on context. Although physics subject matter is the same worldwide, the instructional methods used, the way the exams are held, and the cultural context in which the physics learning process takes place all influence the way students understand and assimilate physics understanding. We present in this paper results obtained from a brief electricity and magnetism survey taken by two populations of students: pre–engineers from the Ohio State University, USA, and second–year physics majors from Bucharest University, Romania. We wish to investigate possible differences in responses in the respective countries. Students were asked to analyze the forces and trajectories of charged particles in regions of magnetic field. Students in both countries exhibited similarities in many aspects of their answers and some differences. They collectively generally know less about electricity and magnetism after instruction than we, as teachers, would have wished.

1. Introduction

Much work has been done in the past decade in considering the way students approach electricity and magnetism (E and M) problems. Much of this research took place in other countries. For example, Törnkvist et al. (Törnkvist, Pettersson, and Tranströmer, 1993) found that Swedish students have great difficulties with the field concept. Electric field lines in the neighborhood of charges and materials constitute a representation that is not generally understood by more advanced university students.

Viennot and coworkers found difficulties with student understanding of the principle of superposition (Viennot and Rainson, 1992; Rainson, Tranströmer, and Viennot, 1994) as the students applied it to electric fields. Eylon and Bagno (Bagno and Eylon, 1997; Bagno, Eylon, and Ganiel, 2000) worked with Israeli teachers and students. They found three critical areas of deficiencies in students concerning E and M:

(1) the structure of their knowledge (understanding the importance of central ideas, qualitatively);

(2) their conceptual understanding (understanding the relationships between the electric field and its sources);

(3) their ability to apply central relationships in problem solving.

We are interested in the similarities and differences between American students and those in other countries. Our null hypothesis is that the students are the same in all countries.

Aubrecht in the university physics textbook *Models of Reality* (Aubrecht, 1990–2002) and Knight in the text *Physics for Scientists and Engineers* (Knight, 2004) have also wrestled with ways to address student incomprehension of field ideas at the introductory level. McDermott, Shaffer, and coworkers have attempted to address some student difficulties with field representations and Gauss's Law through Part II of their Tutorials in *Introductory Physics* (McDermott, Shaffer et al., 1998). Much of this work has also been presented at American Association of Physics Teachers (AAPT) meetings.

Raduta (Raduta, 2001) surveyed many E and M misconceptions in the literature for his OSU generals paper "Students' Misconceptions Related to Electricity and Magnetism." He identified seven general classes of E and M misconception already discussed in the literature. They are:

A. Students' misconceptions related to application of Faraday's law;

B. Students' misconceptions related to the interaction between the magnetic field and electric charges;

C. Students' failure to recognize important ideas from E and M, such as the symmetry of the electric and magnetic fields, and their penchant for believing Ohm's Law to be fundamental;

D. Students' perceptions that the electric and magnetic fields are "static" in nature;

E. Students' misconceptions related to erroneous interpretation of

a symbol or due to ambiguous presentations from the textbooks;

F. Students' misconceptions related to the direction of the Lorentz force and to the application of the right–hand rule;

G. E and M misconceptions related to mechanics misconceptions.

Despite this body of work cited in Raduta (2001), much further work remains to be done on this subject. In addition, Raduta further identified four areas of student "misconceptions" we thought had been missed or understudied in current research. These are:

A. Mathematics–related misconceptions—e.g., misuse of mathematical tools;

B. Tempting incorrect analogies between electric and magnetic fields—e.g., electric field : charge :: magnetic field : "charge";

C. Lack of ability to see the connection between Maxwell's equations and the laws—e.g., Gauss's Law for electric fields, Ampère's law for magnetic fields, the Biot–Savart law for magnetic fields, Faraday's law connecting changing electric and magnetic fields, and Coulomb's law for electric forces;

D. The geometry of the Lorentz force law—e.g., belief that **F** is always perpendicular to **v**.

OSU graduate student Cristian Raduta has done much work on this project. He came to the United States for graduate work in physics education, but a medical problem arose and he had to return home to Romania. We are taking advantage of circumstances to perform some tests of possible similarities and differences between students studying physics in these two countries while investigating some more neglected areas of research on student understanding of E and M. We referred to Raduta's list (above) in devising questions.

We decided to determine whether university physics students who had studied E and M really were able to apply and understand the Gauss and Lorentz force laws, identified by Raduta as underresearched areas. We asked one relatively straightforward, multiple part question about each topic on a survey administered to over 50 students from each country. In both cases, the groups were chosen because they were convenient for us to study (the number of American physics majors is too small; the Romanian engineers attended a different university).

The American students attended OSU and were taking the second quarter freshman introductory course which focuses on E and M. They

had just completed the E and M segment, and all had completed the first quarter of the sequence which focuses on classical mechanics. The Romanian students were second–year physics students at the University of Bucharest. Generally, the material learned in the last years of Romanian high school physics resemble that learned in the first two years of American university physics courses; thus, these students may be considered somewhat more advanced than the U.S. students.

In Section 2, we present an analysis of our data on the Gauss's Law question. The problem was presented to 74 students (66 American, 8 Romanian). More Romanians have taken the survey (a total of 52), but the data for this part are still in the process of being evaluated. In Section 3, we discuss the Lorentz force question. We use the results from all 74 Americans and 52 Romanians. In addition, several individual students from each of the countries were interviewed in detail about their ideas. In Section 4, we summarize and discuss our results.

2. The Gauss's Law Problem

We first discuss how students worked on a Gauss's Law problem (given below). Gauss's Law relates the flux of a field (the surface integral of the field lines penetrating a surface) to the sources of the field enclosed within the surface. For the electric field, the Gauss's Law relation is $\Phi_E = 4\pi k Q_{enclosed}$ (in integral form, this is $\int_{\substack{closed\\surface}} \mathbf{E} \bullet \hat{\mathbf{n}} \cdot d^2A = 4\pi k Q_{enclosed}$),

where $Q_{enclosed}$ is the charge enclosed within the Gaussian (closed) surface. The constant k is the Coulomb's Law constant, $9\times10^9 \mathrm{Nm}^2/\mathrm{C}^2$; $4\pi k$ may also be written as $\frac{1}{\varepsilon_0}$, where ε_0 is the permittivity of free space.

The problem was presented as follows. In the picture below [refer to **Figure 1a**], is the small solid insulating sphere at the center whose surface is uniformly charged with positive charge $+q$. It is surrounded by a larger hollow sphere whose inner surface (radius *b*) is uniformly charged with charge *-q :*

a. Determine the electric field at distance r from the center of the sphere when $r < a$.
b. Determine the electric field at distance r from the center of the sphere when $a < r < b$.
c. Determine the electric field at distance r from the center of the sphere when $b < r < c$.
d. Determine the electric field at distance r from the center of the sphere when $r = c$.
e. If you know that the electric potential at $r = c$ is V(c), what is the electric potential for $r > c$?

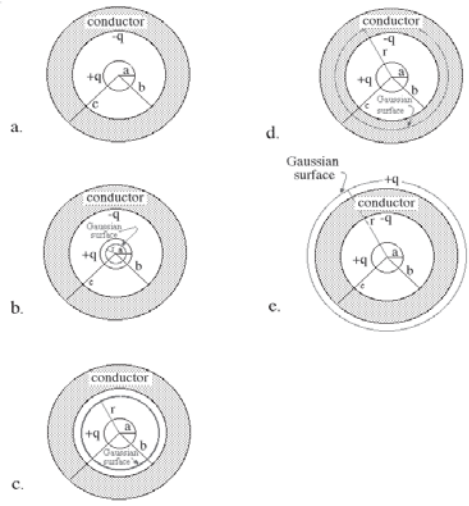

Figure 1: The situation of the Gauss's Law problem and the arrangement of the Gaussian surfaces

We present here the expected correct solutions. The Gaussian surface will be shown by an additional concentric circle in all cases for **Figures 1b–1e**. For **case a**, since the sphere is insulating and we are told the charge is on its surface, there will be no charge inside the surface. The Gaussian surface is entirely within the insulating sphere (**Figure 1b**). Because there is no charge enclosed, the electric flux $\Phi_E$must be zero.

Hence by symmetry, the field E is zero. The radius **r** of the Gaussian surface may be increased from 0 to *a* without changing the result. So, E = 0, $r < a$.

For **case b**, since now there is charge contained within the Gaussian surface, the amount of charge enclosed must be $+q$, the total charge put onto the surface of the insulating sphere. Now the electric flux is $\int_{\substack{closed\\surface}} \mathbf{E} \bullet \hat{\mathbf{n}} \cdot d^2A = +4\pi kq$. By the symmetry of our construction (**Figure 1c**), the integral is simply $E(4\pi r^2)$, so $4\pi r^2 E = +4\pi kq$, and so $E = \frac{+kq}{r^2}$, the same as it would be if a point charge were at the center, at any point $a < r < b$.

For **case c**, the Gaussian surface is now totally inside a conductor. Inside a conductor, any electric fields cause charges to rearrange and move in such a way as to eliminate those electric fields. Depending on our assumptions, we may have the charge $-q$ on the inner surface cause a charge $+q$ on the outer surface of the conductor (**Figure 1d**). In any case, after the transients are gone, there is no electric field at all inside the conductor. Hence the electric flux Φ_E must be zero. By the symmetry of the Gaussian surface, the field E must be zero anywhere between $b < r < c$.

For **case d**, if we assume the concentric sphere was originally uncharged, as discussed above, it must have charge $+q$ on its surface. Further assume that no one grounds the sphere, so that that charge remains. (Of course, depending on initial conditions and what someone could do to transfer charge to or from the sphere, the outer surface could have any charge.) We assume here, as we expect the students to assume (though we allow the student to choose any explicitly stated possibility), that the outer sphere carries charge $+q$ on its outer surface (**Figure 1e**). Now the electric flux is $\int_{\substack{closed\\surface}} \mathbf{E} \bullet \hat{\mathbf{n}} \cdot d^2A = +4\pi kq$. By symmetry of our construction, the integral is simply $E(4\pi r^2)$, so $4\pi r^2 E = +4\pi kq$,

and so $E = \frac{+kq}{r^2}$, the same as it would be if a point charge were at the center, at any point $r > c$.

For **case e**, we use the fact that $\vec{E} = -\vec{\nabla} V$ to solve. Integrating $E_r = -\frac{dV}{dr}$, and given that we have found E in part (d) as $E_r = \frac{+kq}{r^2}$, we can find V by integration to be $V(r) = \int_c^r -E_r dr = \int_c^r \frac{-kq}{r^2} dr = \frac{+kq}{r} - \frac{+kq}{c} + V(c)$.

We plan a complete analysis of our results from this question, but this paper discusses our current preliminary analysis. Our overview of our results from the five parts is given in **Table 1**. It is not apparent from the summary of **Table 1**, but no student in the sample correctly

Category	American	Romanian
Total number of students	74	8
Mostly correct, explanations given	12	2
Some right, some explanation, misuse of formulas	3	1
At least one answer correct (usu. a or c), explanations and formulas	14	0
At least one answer correct (usu. a or c), no explanations but formulas	19	0
Formulas used, all of them wrong	8	0
Formulas and written materials, misguided	5	0
Only written materials, but misguided	2	0
Nothing, or wrong answers with no formulas or explanation	11	5

Table 1: Preliminary results form the Gauss's Law question (N = 82)

answered all parts. **Table 2** provides more detail.

The correct designations were assigned generously: for example,

Task	Correct	(%)	Incorrect	(%)
a	22	29%	52	71%
b	20	27%	54	73%
c	43	58%	31	42%
d	10	14%	64	87%
e	1	1%	73	99%

Table 2: Students answering each force part correctly and incorrectly (or had no answer)

the statement "the electric field is zero because it is within the object" was counted correct in part (c). It should also be noted that students could have simply memorized the maxim that "there is no electric field inside a conductor" and produced the correct answer by applying it.

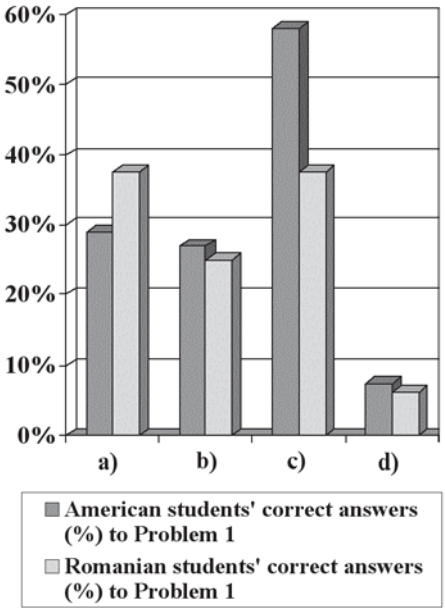

Figure 2: Differences in student answers (percent)—because of the small number of Romanians, the differences are not significant

Given the lack of detail in students' answers (discussed further below), we were not able to identify which students might have found the answer by memorization. Clearly, their classes in both countries left students ill–prepared to find the potential from the field (**Figure 2**).

3. The Trajectory (Lorentz Force Law) Problem

We turn to the second of the questions we asked of the students. It was stated as follows: You have a charged particle inside a region containing a constant uniform magnetic field:

a constant uniform magnetic field:

a. What is the magnetic force (magnitude and direction) acting on the charged particle if the initial velocity is zero? What is the trajectory of this particle?

b. What is the magnetic force acting on the charged particle if the initial speed of the charge is v (known, but unspecified here) and the direction is parallel to $\mathbf{B}$? What is the trajectory of this particle?

c. What is the magnetic force acting on the charged particle if the initial speed of the charge is v (known, but unspecified here) and the direction is perpendicular to $\mathbf{B}$? What is the trajectory of this particle?

d. What is the magnetic force acting on the charged particle if the initial speed of the charge is v (known, but unspecified here) and the angle between $\mathbf{v}$ and $\mathbf{B}$ is α? What is the trajectory of this particle?

We present here the expected correct solutions. In **case a**, according to the Lorentz force law, the total force on a charged particle in a region containing electric and magnetic fields is given by the vector equation (the bold symbols denote vectors) $\mathbf{F} = q(\mathbf{E} + \mathbf{v} \times \mathbf{B})$. In this problem, $\mathbf{E} = 0$. Therefore, in this region of space, $\mathbf{F} = q \cdot \mathbf{v} \times \mathbf{B}$. Since $\mathbf{v} = 0$, the net force $\mathbf{F}$ is zero. The particle remains at rest.

For **case b**, as we found above, in this region of space, $\mathbf{F} = q \cdot \mathbf{v} \times \mathbf{B}$. In this case, the cross product of the two vectors is zero because they are parallel. The net force $\mathbf{F}$ is, consequently, zero. The particle continues to move without any change in its motion (i.e., in a straight line at constant velocity).

For **case c**, again as found above, in this region of space, $\mathbf{F} = q \cdot \mathbf{v} \times \mathbf{B}$. The cross product of two perpendicular vectors is perpendicular to both and the magnitude of the cross product is the product of the magnitudes of the vectors. Thus, $\mathbf{F}$ is perpendicular to both $\mathbf{v}$ and $\mathbf{B}$ and the magnitude of the force is $F = qvB$. From elementary mechanics, we know that if the force is exactly perpendicular to the velocity, the particle's trajectory is a circle about the axis along which the magnetic field lies.

For **case d**, again in this region of space, $\mathbf{F} = q \cdot \mathbf{v} \times \mathbf{B}$. We may write $\mathbf{v} = \mathbf{v}_{\parallel} + \mathbf{v}_{\perp}$, where $v_{\parallel}$ is the magnitude of the component parallel to the magnetic field and $v_{\perp}$ is the magnitude of the component

perpendicular to the magnetic field. Given the angle α, $v_{\parallel} = v\cos\alpha$ and $v_{\perp} = v\sin\alpha$. Clearly, $|v_{\parallel} \times B| = 0$ and $|v_{\perp} \times B| = v_{\perp}B = vB\sin\alpha$. If there is an initial component of velocity along the magnetic field direction ($v_{\parallel} \neq 0$), the motion caused by $v_{\parallel}$ goes on without change (answer to **b**), while the motion caused by $v_{\perp}$ makes the particle go around in a circle (answer to **c**). The nonzero $v_{\parallel}$ means that the plane in which the circle is traced is moving. Thus, the particle's trajectory is a spiral.

Students do not know in many cases the difference between a scalar and a vector. In many cases, students would have a scalar in one side of the equal sign and a vector (or a vector product) in the other side. Even if a student made this mistake, we decided to include them as having a correct answer (but only if everything else was correct).

The results on this set of questions are summarized in **Table 3** (for the force part of the questions) and **Table 4** (for the trajectory part of the questions) and shown in **Figure 3**. The results from **Table 3** and **Figure 3** show that we physics teachers have had some effect on our students in terms of their being able to identify the force acting on a charged particle in a magnetic field. More than half correctly identified the force acting in every case.

The results from **Table 4** and **Figure 3** show how little effect we physics teachers have had on our students' overall understanding of the charged particle's trajectory. **Table 5** presents the results from a slightly differing perspective. Romanian students were less knowledgeable about the magnetic forces than American students but slightly more likely to be able to identify the trajectories caused by the force when the velocity

	American (N = 74)		Romanian (N = 52)		Overall (N = 126)	
Task	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
a. (F = 0)	81%	19%	44%	56%	66%	34%
b. (F = 0)	78%	22%	37%	64%	61%	39%
c. (F = qvB)	57%	43%	50%	63%	54%	46%
d. (F = qvB sin α)	60%	40%	25%	75%	48%	52%

Table 3: Students answering each force part correctly and incorrectly (or had no answer)

Task	American (N = 74) Correct	American (N = 74) Incorrect	Romanian (N = 52) Correct	Romanian (N = 52) Incorrect	Overall (N = 126) Correct	Overall (N = 126) Incorrect
a. (at rest)	43%	57%	37%	64%	40%	60%
b. (straight line)	32%	68%	46%	54%	38%	62%
c. (circle)	7%	93%	33%	67%	18%	82%
d. (spiral or helix)	0%	100%	19%	81%	8%	92%

Table 4: Students answering each trajectory part correctly and incorrectly (or had no answer)

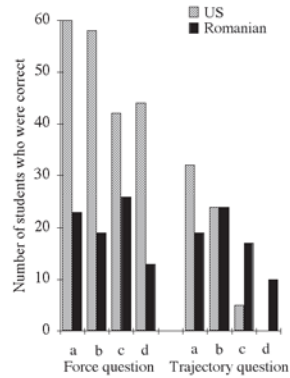

Figure 3: American and Romanian student answers to the force and trajectory parts of the Lorentz question

is perpendicular to the force. We see that Romanian students who answered correctly were more likely to use a greater number of words to express their answer than American students. Many more American

	Many words / rich explanation Correct	Incorrect	Total	Some words / some explanation Correct	Incorrect	Total	Very few words (if any) / almost no explanation Correct	Incorrect	Total
US students	7	4	11 (14.8%)	32	23	55 (74.3%)	3	5	8 (10.8%)
Rom. students	18	10	28 (53.8%)	4	6	10 (19.2%)	4	10	14 (26.9%)

Table 5: Breakdown according to student approach to force question, **part c**

students preferred to "let equations do the talking." **Table 6**, which shows representative Romanian and American "good" answers, illustrates these differences.

Task (correct answer)	Romanian good student	American good student
a. ($F = 0$; no change in motion, so $\mathbf{v}$ is 0)	The magnetic force for a charge in an uniform field is: $\mathbf{f} = q\mathbf{v} \times \mathbf{B}$. If $v = 0$, then $f = 0$, and it will not be accelerated in the field, hence we can't speak of direction of the force, but we can say that the magnitude is always zero.	$\mathbf{F}(L) = q\mathbf{v} \times \mathbf{B}$; if $v = 0$, then $F(L) = 0$; $\parallel$ to magnetic field
b. ($F = 0$; no change in motion, so $\mathbf{v}$ is constant)	$\mathbf{v} \parallel \mathbf{B}$, $v \neq 0$, $\mathbf{f} = q\mathbf{v} \times \mathbf{B} = qvB \sin \alpha$; $\mathbf{v} \parallel \mathbf{B} \Rightarrow$ $\mathbf{v} \times \mathbf{B} = 0$, $\sin \alpha = 0$; $f = 0$; Hence the trajectory is a straight line parallel the lines of magnetic field. The equation of the motion will be: $x = x(0) + vt$, where $v = ct$.	$\mathbf{F}(L) = q\mathbf{v} \times \mathbf{B} = qvB \sin \alpha = qvB \sin 0^\circ = 0$; across magnetic field
c. ($F = qvB$; circular trajectory, speed is constant)	If $\mathbf{v} \perp \mathbf{B}$, then $\alpha = 90°$, $\sin \alpha = 1$. The trajectory of the particle will be a circle perpendicular to the magnetic field lines. The magnitude of the force is $f = qvB$, and the direction is that of the radius of the circle pointing towards the center of the circle.	$\mathbf{F}(L) = q\mathbf{v} \times \mathbf{B} = qvB \sin \alpha = qvB \sin 90^\circ = qvB$, $\perp$ to $\mathbf{v}$ and $\mathbf{B}$
d. ($F = qvB \sin \alpha$; helical trajectory, the parallel and perpendicular velocity components are constant)	$\theta(\mathbf{v};\mathbf{B}) = \alpha$, is the superposition of the two previous cases, and the trajectory of the particle will be a helicoidal one, with parameters radius and step: step = v($\parallel$) T; radius = f(v($\parallel$); m), where m is the mass of the particle. The magnitude of the magnetic force is $f = qvB \sin \alpha$ and the direction is always perpendicular to the trajectory.	$\mathbf{F}(L) = qvB \sin \alpha$; $\parallel$ to $\mathbf{v}$ and $\mathbf{B}$, $\perp$ to $\mathbf{v}$ and $\mathbf{B}$

Table 6: Representative (good) written answers to magnetic force trajectory question

The limitation of a paper and pencil survey include lack of understanding of the dynamics of student thought as it develops when tackling such a problem. We, therefore, wondered if our observations on the stylistic differences were truly characteristic of these two groups.

To try to probe this question, three American students and three Romanian students were interviewed and videotaped as they answered these Lorentz force questions. They were asked to explain out loud their solutions for each part of the trajectory problem as they thought about them (a "think–aloud" protocol), and we attempted to observe any stylistic differences between these two small (we hope representative) samples of the larger student populations. Our results are presented in **Table 7**. The results from these videotaped interviews do not contradict the results obtained in the written survey. As in the written surveys,

Student		Phrases used	# of words used, part c answer	times student refers to subjects other than questions
Mike	A	short	36	0
Barney	A	short	40	2
Timothy	A	long	68	1
Artenie	R	long	89	4
Ilie	R	long	58	1
Cristi	R	long	67	3

Table 7: Characteristics of students' answers to the trajectory problem (names changed)—A: American; B: Romanian

American students interviewed seemed to exhibit greater confidence in their answers than Romanian students did, answering each question with fewer words than students from Romania. American students may have been more focused during the interview than Romanian students were ("pure activity mode" vs. "mixed activity mode").

4. Conclusions From Our Study

The questions we asked appear simple to physicists, and we as teachers hope to have communicated our knowledge of that simplicity to our students in our teaching. We would hope as teachers for all students to have complete and correct answers, though, considering the situation realistically, we would expect that not all students would be able to answer every part.

Our results may best be described as sobering. We do not feel satisfied about students' answers to either question. **Table 8** shows the overview of our results. At best, about one–fifth of students could give a completely

	Average correct score		Percent with totally incorrect answers		Percent with totally correct answers	
	American	Romanian	American	Romanian	American	Romanian
Gauss's Law[a]	29%	31%	35%	63%	16%	25%
Force	69%	34%	19%	54%	57%	25%
Trajectory	21%	34%	57%	54%	0%	19%

a. parts (a) through (d) of Gauss's Law problem, but excluding part (e), which no one got correct.

Table 8: Average correct score, and percent obtaining totally incorrect and correct answers, by nationality

satisfactory answer, even though we interpreted their answers in the best possible light, giving great leeway to what we characterize as "correct." Few of the answers were really complete or completely correct. The majority of students got completely incorrect answers to both questions (**Table 8**), excepting the Americans in the Gauss's Law question, where many answered part (c) correctly (with our generous interpretation of correct) and the force question. The best outcomes for the Gauss's Law were found for answers to (a) and (c), that might have been "memorized" rather than understood.

The results drawn from the second problem are pretty alarming in showing students' inability to find the trajectory, especially if we take into account that this two-question survey—with two easy standard problems—was given to the American students just two weeks before the end of the quarter, when one would expect students to be pretty comfortable with the main concepts of E and M. Further, the Romanian students were more advanced in terms of their coursework than the American students, but exhibited similar limitations. One would have expected them to have been better able to connect their mechanics and E and M knowledge than we found to be the case.

For the most part, the null hypothesis (no difference between the nationalities) cannot be ruled out. The one clear exception is the identification of the force in the Lorentz force question, where the majority of American students were correctly able to identify the forces, while the majority of Romanian students were not (**Table 3** and **Table 8**). Overall, the results showed that both groups were lacking in E and M knowledge. We must question yet again, in light of such lamentable results, whether we are really doing our jobs as teachers.

5. Scope For Future Work

We need to be especially concerned about the lack of student proficiency in solving Gauss's Law problems. Many physics teachers avoid these problems by skipping Gauss's Law entirely, but this decision makes it very difficult to justify Maxwell's equations, a culmination we wish to share with these engineering and science students who, excluding the physics majors and electrical engineers, are unlikely to be exposed to

this wonderful example of unification in their careers at the university (or, indeed, in their later life). Given its practical and theoretical importance to the world we live in, it would be near tragic for them to lose that opportunity. This is a golden opportunity for curriculum developers to go beyond the University of Washington tutorials (McDermott and Schaefer, 1998) and find an effective way to teach Gauss's Law.

We are left with many more questions about these two topics:

- What can we do to teach more effectively? How might we continue to teach Gauss's Law but increase our students' ability to interpret it and understand the deep connection to Maxwell's equations? Are those who would drop Gauss's Law from the elementary course altogether correct that the gains of doing so are outweighed by the difficulties of continuing as in the past?
- Why aren't students able to retain simple ideas about kinematics for even one semester or one quarter? This compartmentalization has often been observed in other, broader, contexts (for example, between mathematics and student application of their mathematics knowledge in physics, or between knowledge from chemistry courses and application of that same knowledge in physics courses). As teachers, we like to believe we have managed to make the deep physics connections for our students, but at least the students in this random sample belie that belief. How can we better communicate the unity of the physical approach?
- Are the (conceivably major) stylistic differences we believe we have observed between these two samples of students doing just two problems representative of the outcomes in other countries? What is the connection between culture, if any, and student approach?
- Are these results characteristic of all international groups? Clearly, there are a lot of points of similarity; both groups of students can be said to belong to the Western tradition of thought, and perhaps groups differing more in culture would perform differently.

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Biography

Cristian M. Raduta is completing his doctorate in physics at Ohio State University. He has earned an MBA in Finance and an MS from Ohio State University, besides a Master in Physics from Bucharest University in Romania. In addition to a number of articles, he has also authored three books: *2 Years in the US*; *Marketing, Or the Big Trick;* forthcoming, *Monkeys Are Coming/Low cost and High Margin.* Raduta has served as a member of Romania's National Olympic Physics Team and was selected for six consecutive years and consistently placed in top positions. He may be contacted at raduta@rocketmail.com.

Chinese Collectivists Twenty–Years Later: A Second Look At The Individualism And Collectivism Construct

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It was in the early 1980s that Hofstede conducted a study of more than 117,000 IMB employees in 66 countries. In this pioneering research, Hofstede mapped 53 countries on four dimensions of cultural variations: power distance, individualism–collectivism (I/C), masculinity–femininity, and uncertainty avoidance. The individualism–collectivism literature generally concludes that the United States, Canada, and Western European countries are high on the individualist end of the dimension while Asian, Latin American, and African nations are identified as high on the collectivist side (Bond, Wan, Liung and Giacalone, 1985; Gudykunst and Kim, 1984). Since the 1980s, Hofstede's work has inspired not only a great deal of research but also has become a well recognized theoretical framework by which many cross–cultural behaviors are examined and explained. Currently, the I/C construct has been used in a wide range of disciplines including psychology, anthropology, sociology, economics, and business management. Methodologies used to examine the I/C construct vary from ethnographies to empirical studies.

Emerging Variations Of Individualism And Collectivism

The incre asing cultural diversity that we see today domestically and globally makes the studies of cross–cultural behaviors relevant. According to the U. S. Bureau of the Census of 1998, between 2000 and 2050, the white population is projected to decrease from 72% to less than 53%. By contrast, the African American population is expected to increase from 13% to 15%; the Hispanic population from 11% to over 24%; and the Asian and Pacific Islander population

from 4% to 9%, while the Native American and Eskimo population will remain at 1% of the total population. In the meantime, communication technology, modern transportation, and expanding commercial and economic exchanges are driving our world toward globalization. Consequently, traditional notions of time, distance, and national boundaries are slowly giving way to an emerging global interdependency. The opportunity to interact with somebody from a different cultural and ethnic background is becoming an inescapable reality.

Today's college students will be in the U. S. workforce that has to function and to compete at home and abroad in a future that is already here. Given the mounting political, economic, social, cultural, and educational interactions that are now becoming part of our national and global communities, academic institutions have to better prepare students to meet the emerging challenges and opportunities. However, we have to look at another pressing question—how well do existing theories inform our teaching about the fast changing domestic and global communities? Because we live in an information age, along with constant technological innovations, knowledge as we know of it is also on a fast track. As teaching scholars, we have therefore to be keen on up–dating our theories that inform our teaching.

In this paper, I will reexamine the individualism and collectivism construct that has been widely used in cross–culture studies, including communication, psychology, anthropology, sociology, economics, and business management. Specifically, I will first review the existing definitions of individualism and collectivism by leading scholars in this area of research. I will then discuss some recent criticism about the individualism and collectivism construct. After that, I will revisit Hofstede's original research to shed some light on the current status of Chinese individualism and collectivism at a time when China is experiencing profound change in its economy, cultural values, family, and social structures. My goal is to argue for a more up–to–date understanding of the emerging variations of individualism and collectivism within the increasingly diverse Chinese society. The implication of this paper is a call to the U. S. teaching scholars to acknowledge these emerging variations and integrate them in our teachings of cross–cultural behaviors.

Definitions Of Individualism And Collectivism

Hofstede is the pioneering theorist and researcher on the topic of individualism and collectivism. For him, societies differ in a fundamental dimension: the relationship between the individual and the collective (2001). He (1991) defines individualism and collectivism as follows:

> *Individualism* pertains to societies in which the ties between individuals are loose; everyone is expected to look after himself or herself and his or her immediate family. *Collectivism* as its opposite pertains to societies in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty. (p. 51)

Another leading researcher on the I/C topic is Harry C. Triandis. According to him (1995):

> Collectivism may be initially defined as a social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives (family, co–workers, tribe, nation); are primarily motivated by the norms of, and duties imposed by, those collectives; are willing to give priority to the goals of these collectives over their own personal goals; and emphasize their connectedness to members of these collectives. A preliminary definition of individualism is a social pattern that consists of loosely linked individuals who view themselves as independent of collectives; are primarily motivated by their own preferences, needs, rights, and the contracts they have established with others; give priority to their personal goals over the goals of others; and emphasize rational analyses of the advantages and disadvantages to associating with others. (p. 2)

Most scholars have a consensus about the general characteristics of individualist societies and collectivist societies. According to Hofstede (1980), individualist societies emphasize "I" consciousness, autonomy, emotional independence, individual initiative, individuals' rights to

privacy, pleasure seeking, financial security, and universalism. In contrast, collectivist societies stress "we" consciousness, collective identity, group solidarity, interdependence, sharing, duties, obligations, and the need for stable in–group friendship and particularism. Triandis (1995) identifies three defining attributes of both individualists and collectivists. According to him, among individualists the self is defined independently of specific collectives, while among collectivists the self includes many of the attributes of the groups a person belongs to (p. 10). The second defining attribute is that collectivists are concerned with the goals of collectives, and the collectives' goals override those of the individuals. In individualist societies, individualists are concerned with their own personal goals. When in conflict, individualists ignore the goals of the collectives (p. 11). The third defining attribute is that collectivists carry out their obligations and perform what is expected of them as specified by in–group norms, while individualists do what is enjoyable and required by contracts that they have established with others (p. 11). Likewise, other scholars point out that individualist cultures emphasize autonomy, independence, self–determination, and protection of self–interests. In contrast, collectivist cultures emphasize interconnection, conformity to group norms, relational harmony, and protection of in–group interests (Hui and Triandis, 1986; Schwartz, 1990).

Clearly, the definitions for individualism and collectivism, as well as the general characterizations of them, tend to use a language that is dichotomous, implying a uniformity of behaviors within a single culture and a difference of behaviors across different cultures.

Criticism Of Individualism–Collectivism Construct

It has been over two decades since Hofstede (1980) published *Culture's Consequences*, which started the interest in I/C research and its application in many disciplines such as cross–culture training, intercultural communication, cross–cultural psychology, and management. While many scholars and researchers have embraced Hofstede's individualism–collectivism construct, the theory has received some criticism in recent years.

The first criticism calls attention to the biggest limitation of Hofstede's original study—the "differential representativeness of the

samples for each country" (Voronov and Singer, 2002). Given that the sample in Hofstede's studies consists of employees of a multinational high–tech corporation, the participants were highly educated and highly skilled managers, technicians, and other white–collar professionals. Although such a divergence from the general population varies from country to country, the weakness in the lack of representativeness of the sample is most likely in the developing countries (Schwartz, 1994). Even Hofstede's own views in the original work supports his critics' position when he states that the more educated members of a society, like the samples he used in the original study, tend more likely to be individualistic than other members of the same society. As Schwartz (1994) notes, empirical studies have shown that different samples within a given culture have been found to vary on I/C dimension. Yet, despite the unrepresentativeness in the original sample, many researchers have generalized Hofstede's findings to the whole culture.

The second criticism finds fault with the theory for being a single, bipolar dimension that causes reductionism and oversimplification. As Voronov and Singer (2002) argue, the individualism–collectivism theory pigeonholes a whole culture into dichotomous categories, disregarding a culture's historical contexts, levels of development, economic structure, political philosophy, and its collective experience. In fact, some empirical studies support the argument that individualism and collectivism can coexist in individuals or groups in different situations or with different target groups (Takano and Osaka, 1999; Triandis, 1990; Yamaguchi, 1994; Yang, 1988). One such empirical study stands out in particular. After conducting a value survey to a sample of 86 teachers and students from 41 cultural groups in 38 countries, Schwartz (1994) concludes that data do not support the view of the United States as a highly individualistic nation, if "*individualism* refers to a conception of the person as autonomous relative to the group" (p. 110, italics in the original). In fact, the U. S. sample scores neither high on autonomy nor low on conservatism. On the other hand, if a collectivist society is defined as one in which a person is inseparable from the group, China is hardly an extreme collectivist society as many have indicated since the Chinese sample scores average on the autonomy–conservatism dimension and low on the importance of egalitarian commitment.

Meanwhile, other non–Western scholars express similar doubt about

the dichotomous, hemispheric categories which abound in Western thinking that dates back to the seventeenth century Cartesian epistemological argument for the distinctness of mind from body. Sinha and Tripathi (1994) argue that although dichotomous conceptualizations of self and social phenomena are common in the West, coexistence of opposites is characteristic of the Indian culture. Other empirical studies also challenge the view that China is a collectivist society (Hui, 1988; Ho and Chiu, 1994). Rather, these scholars characterize China as "an exemplary synthesis of individualist and collectivist values" (Ho and Chiu, 1994, p. 154).

The third criticism has to do with the loose and confusing use of the I/C construct as an explanatory framework for both the macro cultural level of analysis as well as the micro individual–level analysis. Although Hofstede (1980) insists that the I/C antithesis is not a psychological but an anthropological distinction, and it refers to societies, not to individuals within those societies, many researchers fail to heed to that distinction. To avoid the confusion between these two levels of analysis, Triandis (1995) proposes the use of different terms. For individual level of analysis, he distinguishes between idiocentric (self–oriented) behaviors versus allocentric (social context–oriented) behaviors. For social level of analysis, he differentiates between individualist behaviors versus collectivist behaviors.

Finally, some scholars are very concerned with the value–laden connotations that the concepts of individualism and collectivism have in Western cultures, particularly in the United States. As Kagitcibasi (1994) argues, such concepts as collectivism and individualism often emerge "in a sociocultural–ideological context" (p. 55). As a result, collectivism especially carries a pejorative meaning (Lawler, 1980, p. 164). It is often associated with "conformity to group pressure, crowd behavior, [and] deindividuation" (Kagitcibasi, 1994, p. 55). Even Hofstede (1980) in his original writing admits what he calls "strong moral overtones" to these terms (p. 210) because many Americans see the individualism in their culture "as a major reason for the greatness of the United States" (p. 210). Hofstede (1980) also recognizes that in the United States "there has been and still is a strong feeling that individualism is good and collectivism is bad" (p. 213).

For the same reason, non–Western scholars are concerned with the

different cultural meanings embedded in the concepts of individualism and collectivism. For example, Yang (1986) points out that researchers have often administered an instrument developed and standardized in a Western culture to a sample of Chinese, who may understand the term "collective" differently (p. 164). According to Lu (1998), the Chinese translation of collectivism in mainland China means "a moral attribute [which] characterizes [a] socialist and communist ideology, calling for a total devotion and sacrifice of self to the communes and the state" (p. 93). Although Western researchers view individualism generally as a positive term, the term is viewed in both Japan and China as a pejorative term, meaning selfishness, self–centered, and self–interested (Triandis, 1995, p. 7).

Are Chinese Collectivists Twenty–Years Later?

In the remaining part of this paper, I will first revisit Hofstede's 1980 original writing on the topic of individualism and collectivism. By doing so, I will demonstrate the need to update our early theory about China's collectivist status, given that profound change has and is still happening in China. After that, I will suggest some emerging cultural variations in the I/C dimension within the Chinese culture that deserve more of our attention. To conclude, I will call to the U. S. teaching scholars to acknowledge the emerging cultural variations so as to integrate them in our teachings of cross–cultural behaviors.

The first view held by Hofstede (1980) suggests that the I/C dimension is most closely linked to a country's economic development (p. 211). To support his own contention that countries that achieved fast economic development should experience shifts toward individualism, Hofstede (1980) uses Hong Kong and Taiwan as examples of increased individualism when their economic development improved.

Before the economic reform in the 1980s, China's state–controlled economy was barely sustaining its population, and the living standard was very low. However, two decades of economic reform have witnessed China's profound transition to a market economy in which private ownership of businesses is booming along with the affluence among some members of Chinese society. In the last decade, China has produced real GDP growth of more than 8 percent per annum, with foreign direct

investment exceeding $66 billion in 2000. As a market economy is taking hold in China, traditional social practices, cultural values, and social relations are also changing. What is embraced today in China is the self–interest in profit making, demand–supply dynamics, competition, economic individualism, and contractual employer and employee relations. Since scholars suggest that individualism is strongly linked with market capitalism and competition (Béteille, 1977; Hofstede, 1980; Hsu, 1983), one should assume that China should move up higher on the individualist dimension while moving down lower on the collectivist dimension.

The second view held by Hofstede (1980) claims that modernity increases social mobility, which in turn moves a given culture toward the individualist dimension. In China today, mobility is unprecedented. Traditionally, in agriculture–oriented cultures like China, families and in–group members were the intimate societal and cultural environment that collectivists needed in order to survive (Triandis, 1995). As a result, the collectivist cultures provided their members with a dependent and interdependent "self–construal" and a collective identity (Markus and Kitayama, 1991). However, as many cultures enter the modern commercial and competitive world of large bureaucracies, they start to offer a higher level of social mobility for members of their cultures. Instead of being constrained to stay in the same place by geographic distance or location, people now through various forms of transportation are mobile. Consequently, a more open, competitive economy in China allows more people the mobility up and down the economic and social hierarchy. At the international level, today's information technology transcends national boundaries, thus reducing the previous physical limitations of distance and time for human interaction and business exchange.

As the world is changing, so is China. Exposure to Western business models and cultural products all give some Chinese people an alternative worldview. As Triandis (1995) points out, physical, social, economic, and political mobility all lead to individualism (p. 25). Given the view discussed here, one should assume that China is moving up higher on the individualist dimension while moving down on the collectivist dimension. Such an assumption is supported by Yang (1986), who attributes China's increasing individualist dimension to its modernization and mobility.

Emerging Cultural Variations Within The Chinese Culture

In the previous section, I have argued that the current economic change in China supports the suggestion that China's status on the I/C dimension may have been changing in comparison to its collectivist status in early studies. Given that, a meaningful question should be asked: what are the patterns of change in China's current status in the I/C dimension? I propose three such patterns here.

First, uneven levels of education and economic status on the individual basis should lead to behavioral variations in the I/C dimension among the Chinese people. According to Hofstede (1980), the increasing level of education and economic status of individual members in a given society leads to an increase in individualism. So, who are the more individualist members in the Chinese society? Obviously, they are often the well educated urban people such as white–collar technicians, administrators, and other professionals. Their education gives them the skills needed to compete better in a highly competitive and highly technological market economy in comparison to the other members of their society. Besides, many of these individuals often have a higher economic status since they are either business owners or working at well–paid jobs that require knowledge and skills that many people in the rural communities often do not have.

In the meantime, as competition and economic individualism become increasingly dominant factors of development, those with little education and a low economic status have experienced the most difficulty in terms of unemployment, loss of pensions, and the lack of financial means to provide their children the best educational opportunities (Powell, 2001). Due to the competitive nature of the market economy in a society that has a huge surplus of labor, we should assume that a dialectical tension exists within the Chinese culture between those who tend to be more individualistic and those who tend to be more collectivist. This assumption finds support in Triandis's (1995) argument that the upper–class, urban, younger samples used in most studies on the I/C dimension tend to indicate more individualistic behavior than the lower–class, rural and older samples in most societies.

Second, uneven economic development at the regional level should

lead to behavioral variations in the I/C dimension among Chinese people. If one first considers the Shenzhen Special Economic Zone more than two decades ago, China's Southern coastal areas and some Eastern coastal metropolitans are experiencing drastic commercialization and modernization because of the tremendous access to domestic and foreign capital and investment. In contrast, the agrarian communities in the heartland and in the Northwest still need to rely on the traditional collective units such as families to survive the ecological demands on the land and farming (Kim, 1994). In other urban areas, twenty–five million Chinese workers will be unemployed because of the restructuring of industries as the transition to a market economy deepens (Power, 2001). Given this uneven economic development at the regional level in China, we should expect to see significant regional differences in the I/C dimension. That is, the coastal and metropolitan areas that have experienced more commercialization and modernization tend to be high on the individualist dimension while the rest of the country that is falling behind the current economic change should generally maintain a higher collectivist status.

Finally, China's family structures are undergoing profound change, leading to a generation–based behavioral variation in the I/C dimension. In an effort to curb population growth, the Chinese government introduced in the late 1970s the "one–child family policy." After three decades, Chinese young people, particularly those in the urban areas, are growing up in nuclear families at a time when the Chinese society is quickly becoming commercial, modern, and technological. In responding to the changing cultural environment, young Chinese are adopting new cultural values, social practices, attitudes toward human relations, and institutional behaviors. Critics, however, have expressed serious concerns that the current commercialization, the undivided attention, the heightened expectations, and the financial and emotional protections from their parents would turn China's only child generation into "little Emperors" and "little Empresses." According to the critics, Chinese young people today are self–centered, overindulged, egocentric, I–conscious, and lack the values of persistence and cooperation (Crowell and Hsieh, 1995; Jiao, Ji and Jiang, 1986; Polit and Falbo, 1987; Wu, 1986). All these qualities, as critics have noted, are deviating from the traditionally collectivist Chinese values that focus on harmony, other–

orientation, group loyalty, family, and collective identity. Additionally, given the traditional Chinese emphasis on education, parents of the only child generation are investing their children's future in it. As a result, China's only child generation will be the most educated in Chinese history, causing them to become more individualistic in a changing environment that embraces economic individualism and self-fulfillment. This generation–based behavioral variation in the I/C dimension between the only child generation and their parents will become increasingly significant.

Implications

The I/C research has been instrumental in identifying, predicting, and explaining cross–cultural behaviors. Its explanatory value as a theoretical framework is undeniable. However, it is critical to acknowledge that generalizations about different cultures often lead to reductionism, as if there were a uniformity of behaviors within a single culture. Similarly, categories such as individualist societies and collectivist societies lead to fixation despite the fact that cultures are dynamic and always changing. Both tendencies risk ignoring important and emerging variations within a single culture.

Furthermore, informed by the Western liberal individualistic cultural orientation, the individualist theories are valued over collectivist theories. This cultural bias in the United States makes it difficult for American students to appreciate the notion that people in collectivist societies prefer to resolve personal, societal, and organizational problems in ways that differ from an American approach (Hofstede, 1980, p. 213). Professors teaching culture and communication should be aware of such a cultural bias.

I strongly share Lu's (1998) view that teaching scholars should give more attention to how the current Chinese cultural values, social relations, and communicative behaviors are affected by the economic reforms taking place in mainland China since the 1980s. Because of uneven economic development, uneven educational opportunities, and social mobility, we should expect to see a variation within the Chinese culture today between those who tend to be more individualistic and those who tend to be more collectivistic. Similar to any other societies,

members who are in positions of power, status, and privilege are more likely to score high on the individualist dimension. For them, the current economic individualism gives them social mobility, financial security, personal advancement, and self–fulfillment. Those who have less education, power, and status have a different experience within the emerging market economy. Therefore, I/C variations within the Chinese society are not only real but are also too important to be ignored. Instead of categorically labeling the Chinese as being collectivists, scholars and educators must make finer distinctions about the diverse variations of I/C behaviors within Chinese society.

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Biography

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Why Do Students Take Online Courses?

Joseph Cavanaugh
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There are many reasons for the growth and popularity of online courses. Two of the most important involve providing access to students that either have scheduling conflicts due to work or family obligations or have long distances to travel to campus. This study investigates this issue by analyzing the student evaluations and registration information of students taking online economic courses at Wright State University—Lake Campus. The goal of this analysis is to answer the question, "Why do students take online courses?"

Introduction

The total number of individuals using the Internet regularly is estimated to be over 605 million people worldwide. In the U.S. and Canada, as of April 2002, the number using the Internet represented over 59% of their population (NUA 2003). Mirroring the dramatic growth in the overall usage of the Internet, there has been a similar growth in the number of offerings of and the number of students enrolled in online and distance education courses. From 1998 to 2001, enrollment in distance education courses increased by over 100%, and the number of courses offered increased by more than 200% (NCES 2002, NCES 2003, Kieman 2003). In the autumn of 2002, over 1.6 million students took at least one online course, and 81% of all higher education institutions offered online courses (Allen and Seaman 2003).

A number of studies have investigated the student satisfaction, dropout rates, and difficulties in teaching online courses. These authors have found that in online compared to in–class courses, students are equally as satisfied and learn as effectively (Neuhauser 2002, Ngu 2002, Allen, Bourhis, Burrell and Mabry 2002, Hiltz 1997). Online courses have been found to have higher dropout rates compared to in–class courses (Xenos, Pierrakeas, and Pintelas 2002, Muse 2003, Hiltz 1997). Development and instruction of online courses have been found to

require higher levels of effort compared to in–class courses (Doube 2000, Lazarus 2003, Cavanaugh 2004).

These authors and others (Flowers 2001, Watbingon 2001) cite many advantages of online courses. A common advantage is that of providing access to students who either require the flexibility to take courses at their own pace at anytime or live a significant distance from campus. These courses are particularly appealing to working professionals, single parents, or students whose jobs require travel. The students that take online courses, however, could be overwhelmingly traditional students that prefer an online format over taking the course in a regular classroom. If this is the case, then, given the high cost of development and the additional efforts in teaching online, institutional resources may be better served by limiting the number of online courses offered. This study investigates this issue by analyzing the student evaluations and registration data of students that have taken my four different online economics courses over a period of three years.

Student Course Evaluations

I have been teaching online for the past five years and have for the past three years taught two or three courses online for each quarter. Beginning three years ago, a student evaluation was provided online, and this evaluation is used for this study. After the grades were given each term, the students were asked to provide answers and comments by filling out an online student evaluation of the course. They were instructed to submit this electronically, or they could send it anonymously through the mail. The focus of this study is on the students' responses to the question "Why did you take this course online?"

There were 68 student evaluations taken from 16 different sections for an average of 4.25 student evaluations per course. The courses were each limited to 15 students, and there were a total of 21 courses taught over this period. In five of these courses, there were 0 student evaluations. Often this result occurred because the same course was offered in back–to–back terms which limited the time period the students had to complete the course evaluation before the course had to be reset for the next term.

Looking at the student evaluations, I note that there were three

general categories of responses as to why the students took the course online. Students responded that they took the course online due to the format of the course (Format), the transportation time saved (Transportation), and the ability to better manage their schedules (Schedules). Students often cited more than one reason; so, the total responses are larger than the total number of student evaluations. The category Other contains responses that did not fit into one of these categories. For example, students said, "I took this course online as a general education requirement"; "The class was a prerequisite for the Organizational Leadership Program"; "I have never taken one. I just wanted to try it." **Figure 1** contains the frequency of these responses.

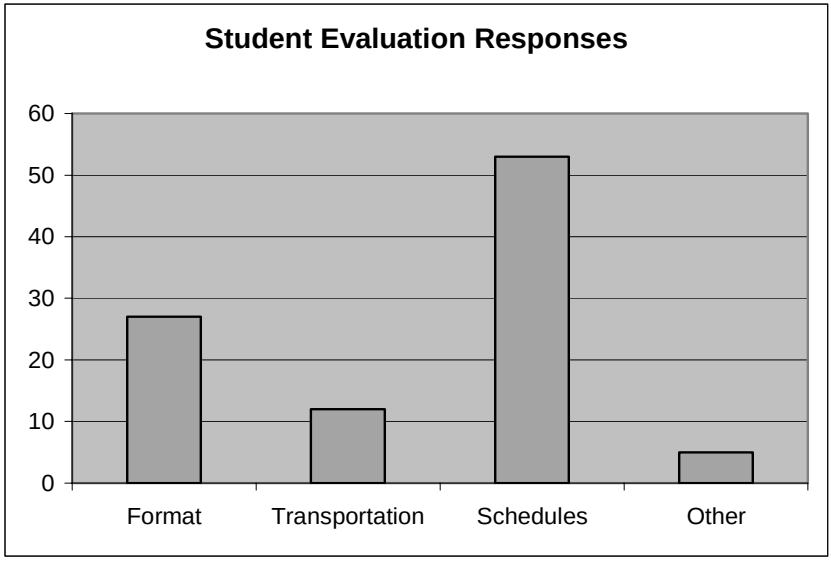

Figure 1: Student Evaluation Responses

Almost all students included in their responses scheduling difficulties as one of the reasons for taking the online course. There were a number of specific reasons students cited for why the online format met their scheduling needs. The three most commonly cited scheduling reasons for taking the course online were due to work commitments (Work), family obligations (Family), and other course time conflicts (Courses). Included in the Work category were the three responses from high school

students who cited their high school courses as the scheduling conflict. There were seven responses (Other) that just stated that they took the course online for scheduling reasons and did not elaborate on what these reasons were. **Figure 2** contains the frequency of the scheduling response subcategories.

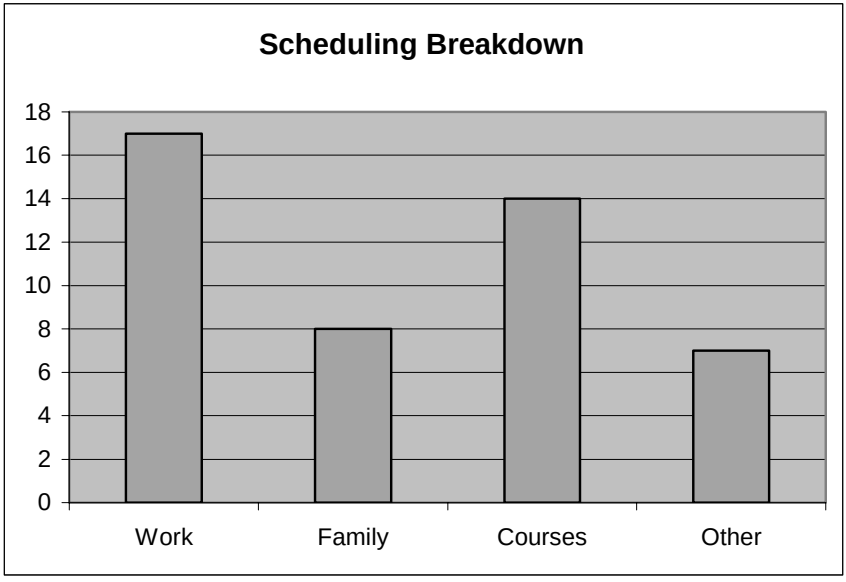

Figure 2: Scheduling Breakdown

Discussion

Twenty–seven of the sixty–eight students cited format (Format) as one of the reasons for why they took the online course. These students often said that they liked the ability to work at their own pace, for example: "I thought it would be much easier to take a class where I could work on my own time"; "Because I thought I could grasp the material on my own and get a grade comparable to one I would have earned by taking the in–class course"; "I could take the quizzes and tests whenever I wanted to." Students also appreciated the fact that they did not have to go to lectures and could satisfy the

course requirements when it was convenient to their schedules. For example, they said: "I did not want to sit at WSU to take this class when I could do it more on my own time"; "I am a night person, so sometimes the best time for me to take a test and cover material is late at night"; "I could learn and spend more time actually studying instead of wasting time in class."

The large frequency of the Family, Work, and Transportation responses suggests that the students responding to the student evaluations are not traditional full–time students. In addition, further analysis indicates that usually the time spent traveling (Transportation) and Work, the subcategory under Scheduling, are both cited by the same student. Often the student would specify the number of minutes spent traveling, the miles driven, or even the amount that he or she would be willing to pay to be able to take additional courses online.

Student Sign–Up Sheet Analysis

As part of the registration process, all online students are instructed to call or stop by the Lake Campus Bookstore to arrange for sending their course materials. When students call or come in person to the bookstore, they are asked to forward their names, home addresses, home and work phone numbers, and e–mail addresses so that the instructor can contact them. To investigate the travel time in more detail, I used the home addresses of all students taking my online courses (147 students) to determine the number of students who had long home–to–school commute times. The zip codes of the students that lived 20 miles or more from either the Lake Campus or the Dayton Campus were entered into Yahoo Maps to determine the travel times to each campus. There were a total of 37 students who had large commute times. Six of these students were closest to the Dayton Campus, and the remaining 31 were closest to the Lake Campus. The average number of miles these students would have to travel in one direction from their home to WSU was 39.9 miles. The average commute time as reported by Yahoo Maps for these students was 60 minutes each way. **Figure 3** provides a summary of the location and distance from the nearest campus of the students that have taken my online courses. (See next page for **Figure 3**.)

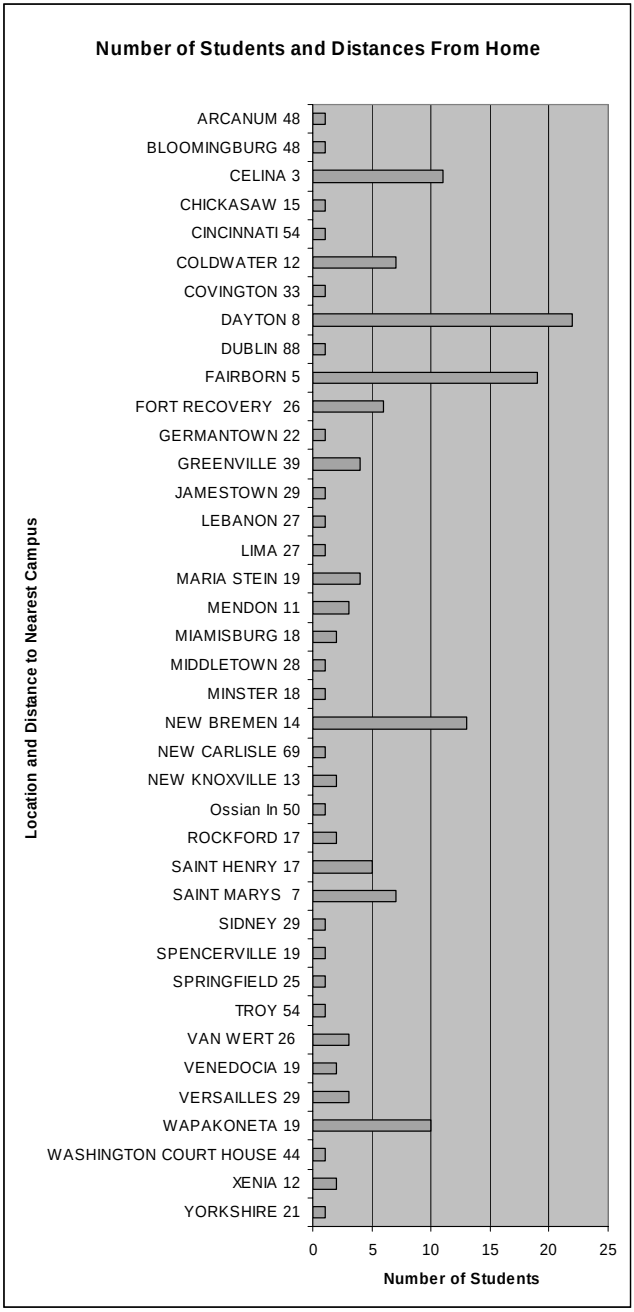

Figure 3: Number of Students and Distances From Home

A more detailed investigation of these students' home and work phone numbers found that there were only four students living on the Dayton Campus that have taken the online courses. Of the students coming from Fairborn and Dayton, 62% provided work phone numbers in addition to their home phone numbers, and five were full–time WSU employees. Across all students 54% listed work phone numbers. Looking at the student evaluation responses, one can assume that the distance that many students would otherwise have to travel, and the fact that a large percentage provided their work phone so the instructor could contact them, suggests that the students taking the online courses are probably not traditional full–time students.

Conclusion

This study finds that students taking online courses are doing so largely to meet scheduling needs that arise from work and family and to eliminate long commuting times between their homes and campus. While analyzing the student evaluations, I note that a number of students said that they would be willing to pay an additional amount per credit hour to take more online courses if they were offered. This view is not surprising when on average approximately 25% of the students taking these courses would potentially have to spend an additional six hours a week driving back and forth to campus if they could not take the course online.

Although this study was limited to a specific institution and discipline, it did investigate many sections of a number of different courses taught over many years. It is likely that these results would be similar for other disciplines and institutions. This assumption is particularly true for other Ohio regional campuses which face largely common missions and student demographics.

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Biography

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Educating The Local Workforce: The Journey Of Revising A Management Program

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Abstract

This paper describes the journey of a management program revision on a regional campus. It started with surveys among local employers, then expanded to literature research on American management education issues. The Management program revision effort solicited input from the department's Advisory Board, referred to a U.S. Department of Labor's report, and prepared students for job success. It discusses the program revision objectives and specific improvements for the proposed management program.

Background

The Management Program of Business Technology Education (BTE) department at the regional campus of Miami University is designed for those who are already in the workforce and those who are just starting their careers. The program is suitable for individuals who need management education for career advancement. This program is also targeted at individuals who want a broad education in general business and management so they can jump–start their professional careers.

The existing program enjoyed popularity: during the 1998–2003 five–year period, BTE Management graduates accounted for over 30% of all BTE graduates. Thus, the original thoughts on the management program revision were to fine–tune the program. Three activities were planned: 1) adding e–business courses to the management program requirements; 2) reviewing textbooks for each management course; and 3) updating course content with the latest

research and theories. A contemporary Management program had been expected after the implementation of the above three activities.

Gaps Between What Employers Look For From Graduates And What Management Programs Teach

Surveys and Findings from Local Business Advisory Board

In order to solicit input from local businesses, two rounds of formal written surveys were conducted among the BTE Advisory Board, which consists of representatives from local employers. The main function of the Advisory Board is to provide suggestions for curriculum development.

At the Advisory Board meeting held during the Spring of 2002, the management program revision efforts were announced to the board members, and a written survey was distributed. (The survey can be obtained by sending an e–mail to fergusc@muohio.edu.) One of the survey questions was to "describe the ideal candidate profile for your entry–level management assistants and first–line managers or supervisors." Nine Business Advisory Board members mailed the written survey back within two weeks. Below are their responses to the above survey question:

- Demonstrates experience and success in dealing with people, customers, and employees. Experience in the field is good but can be gained on the job if necessary
- Strong people skills
- Team, interpersonal savvy and communication skills
- One who shows initiative and good work ethic
- A very positive outlook. We can train from here.
- Dedication
- Self starter, personable and able to deal with people
- Willing to learn, work with other people
- Coachable and hardworking

To the surprise of BTE faculty, the ideal candidate profile described by the board members had nothing to do with a grasp of management tools and principles which most management courses emphasize.

Instead, good work ethics with strong soft skills, such as interpersonal and communication competence, were main characteristics of ideal candidates.

In order to validate this finding, during the next Advisory Board meeting in the Fall 2002, a second round of survey questions was distributed to the same Advisory Board, asking members, "What skills or qualities will help management graduates move up?" Below are their written responses:

- Have good people skills
- The ability to communicate to all levels of the organization
- Showing initiative and demonstrating leadership skills
- Leadership skills—the ability to influence other employees in a positive way
- Ability to lead and negotiate
- Ability to build and lead teams
- Innovative and think "out of the box"
- Well–rounded knowledge in the field of accounting, finance, and marketing

Except for one Board member who mentioned well rounded knowledge, eight of nine Advisory Board members emphasized soft skills and work ethics again. Those survey findings from the Advisory Board required BTE faculty to conduct literature research on American management education.

Problems with Management Programs Nationwide

Porter and McKibbin provide a rigorous and thorough study on the gap between what employers are looking for and what business schools are teaching (Porter and McKibbin, 1998). According to the study, universities did fairly well at providing a quantitative emphasis and developing analytical skills. However, employers noted that business curricula did not focus enough on developing students "soft" skills which are required in the participatory management trend and are essential in our service–oriented society.

On the one hand, management graduates find they hardly have the opportunity to apply learned management principles in the workplace.

On the other hand, they lack basic managerial knowledge and skills to "hit the ground running." Even if they have the management degree, in the situation required for management skills, they flounder (Dodd, Brown and Benham, 2002).

Management Program Revision At BTE Of Miami—Hamilton

Referred to the Department of Labor's Report as a Guideline

From the BTE Advisory Board surveys and secondary research on national management education, the BTE faculty reexamined the three planned activities and decided to use the U.S. Department of Labor's report as the guideline for the revised management program. During the 1990s, under the leadership of the Secretary's Commission, the Department of Labor published results of studies named the SCANS reports (Secretary's Commission on Achieving Necessary Skills), which delineated requirements for the American workforce to compete effectively in the new economy. The objective of SCANS is to "understand how curriculum and instruction must change to enable students to develop those high performance skills to succeed in the workplace of the new economy" (U.S. Department of Labor web site).

The SCANS report categorized modern workforce requirements into 3 skills and 5 competencies:

Three skills:

- Basic Skills: read, write, perform mathematical operations, listen, and speak.
- Thinking Skills: think creatively, make decisions, solve problems, visualize, learn, and apply new knowledge and skills.
- Personal Qualities: responsibility, self–esteem, sociability, self–management, integrity, and honesty.

Five competencies:

- Resources: the ability to identify, organize, plan, and allocate resources.

- Interpersonal: the ability to work well with others.
- Information: the ability to acquire and use information.
- Systems: the ability to understand complex interrelationships.
- Technology: the ability to work with a variety of technologies.

In the SCANS report, both intra– and interpersonal skills have been emphasized. For example, in the three skills, personal qualities of responsibility, self–esteem, and self–management are listed as the same priority as basic reading and thinking skills. In the competence category, 3 out of 5 competencies are also related to interpersonal skills, such as utilizing resources, working well with others, and understanding complex interrelationships. As a result, the BTE Management program revision redirected the effort on training those managerial skills which will directly enhance graduates' employability and job success. The most important mission for the regional campus is to train the local workforce. No matter how updated an academic program is, if future graduates are unable to find jobs, the program will not be competitive.

After the BTE faculty analyzed the BTE Advisory Board surveys, conducted literature research, and studied the SCANS report, a consensus was reached to add soft skill training for management students. A new course of Supervisory and Managerial Skills was proposed to train students' intrapersonal, interpersonal, and leadership skills in the revised management program.

Shift from Learning about Management to Learning to Manage

Unless students can apply the management course content to the workplace and solve real problems, the learning is only limited to "about management." To most students, only understanding "about management" gives them no confidence in "how to manage" a specific employee or situation. Thus, a shift from learning "about management" to "learning to manage" presented the biggest challenge to the management program revision.

To be effective in management education, educators must employ various teaching techniques in training students how to manage people and other resources. Below are three specific components used in the proposed management program.

1. Helped Students to Relate Course Content

To maximize students' learning, the first task is to engage students and answer the question of "what's in it for me?" from the student perspective. By helping students link the course content to their everyday lives and having various hands–on activities, educators will help students gain better understating of how management concepts are derived and how those concepts work in actual situations (Dodd, Brown and Benham, 2002). For example, before different motivation theories were introduced, students were encouraged to do a self–test on their own motivation factors. Then they were better able to relate the course content and apply motivation theories to their own lives.

2. Recommended Management Portfolio

According to the BTE Advisory Board survey, local employers tend to think that management graduates do not have tangible skills compared with accounting students, especially for 2–year management graduates. In order to overcome this barrier, a management portfolio was required for management students.

A portfolio is a helpful vehicle for students to reflect upon their previous work experiences and be more specific about their career objectives. For example, one student's dream job was to have her own bridal consulting business after graduation. By applying the planning, organizing, leading, and controlling functions into her dream business, she prepared a portfolio which had a detailed analysis of competitive bridal businesses and her action plans. Students also included case study analyses, service learning projects, and their own self–reflection paper in the management portfolio to demonstrate more concrete knowledge and tangible deliverables about management education to potential employers.

3. Utilized Case Writing

Using case studies is one of the most effective teaching techniques rated by BTE Business Advisory Board members. However, case studies tend to become so similar that students lose interest in analyzing them. In order to utilize the strengths of the case study and overcome its disadvantages, students were required to develop and write their own cases.

Students were allowed to choose any management topic of their interest. For example, students could write a case study on motivation, conflict resolution, or team dynamic issues. At the end of the semester, students were required to role play their own finished case study. By writing cases themselves, not only did they acquire managerial concepts reinforced, but they also provided solutions that take into consideration all the real world constraints. In doing so, students' learning was enhanced.

Conclusion

The feedback from BTE recent graduates on the revised management program was very encouraging. According to students' anonymous written evaluations, the revised management courses are "modern, challenging, and life altering" and turn "learning into real life scenarios."

The management program revision effort is a journey on which the management program continues to explore the training of basic management skills and shifts from a teach–about–management to teach–to–manage approach. Through the journey, the BTE department has learned that the main tasks of academic program revision are not limited to merely updating course content, selecting the most comprehensive textbooks, and including on–the–edge courses. The management program revision on the regional campus should rethink how graduates will utilize their acquired knowledge and skills to start and maintain their professions.

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Biography

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Waking The Dead In The Two–Year College: Shakespeare Here And Now

Debra Johanyak
University of Akron—Wayne

William Shakespeare's drama emerged in late sixteenth century London theater against the backdrop of a cultural debate between the University Wits and the Grammarians. The Wits, a set of academically elite authors with polish and sophistication, criticized the aspiring group of playwrights who had received only a grammar school education and whose work reflected an earthy, quick wit. Since Shakespeare did not attend university, the Wits classified his work with the Grammarians. Yet critics then and now argue that Shakespeare's knowledge and style deserve a place as prominent, if not more so, as that of the Wits, university degree notwithstanding.

Literary Heavyweights

Today in higher education a similar debate has arisen as scholars argue the appropriate site for Shakespeare study. Traditionally, Shakespeare courses found a secure niche in the hallowed halls of Ivy League institutions whose faculty taught classic works that extended from the Greco–Roman golden age to the Renaissance. Shakespeare's drama and poems generally were reserved for undergraduate English majors who took one or more Shakespeare courses in their third or fourth year as part of the expected polish to a standard curriculum. Those hoping to teach Shakespeare took graduate courses. As a British literature heavyweight among others like Chaucer and Milton, Shakespeare retained an imposing image of pedantic significance that was accessible to only the most serious scholars, so that heavy tomes often remained on dusty shelves, awaiting the dedicated fingers of the few and the faithful. When community colleges and university branch campuses began to multiply in the late twentieth century, administrators at either campus found it unsuitable to include Shakespeare courses in the general studies curriculum. Great literature was reserved for advanced intellects.

In recent times, however, it appears that pedagogy is shifting. The question is, "Should it?"

In the last fifteen years or so, higher education has enjoyed a revival of the classics. Updated courses and technology–supported textbooks devoted to ancient dramatists and classical orators fill bookstores and classrooms. With the revamping of humanities requirements taken in second–year studies came the need for an earlier, more broad–ranging Shakespearean course. No longer would Elizabethan study be relegated to upper division courses. Instead, Shakespeare would be offered as part of a broad–spectrum humanities option or a topic–specific English elective in community colleges as well as university campuses. At least, this argument was made by a new generation of teacher–scholars.

Such is the case at the University of Akron—Wayne College, where I have been employed since 1992. At our campus of about 1,900 students, we offer the traditional "Humanities in the Western Tradition" pair of required courses to second–year students who have met the usual prerequisites. Recently added electives, however, now include options such as "Classical and Contemporary Literature" or "Shakespeare and His World." William Shakespeare has been taken down an academic notch, now available to second–year, non–major, general education students who may never read another classic in their academic careers. Branch campuses, community colleges, and technical schools offer Shakespearean study in a variety of courses: world literature, Renaissance drama, survey of British literature, Shakespeare, Shakespearean drama, Shakespeare and his world.

What happened in higher education to diversify offering Shakespearean studies to the general student population instead of reserving his work for upper–division courses? Is such diversity a good or a bad thing for regional campus and community college faculty and students? Will exposure to classic works support or divert attention from a general education focus? How will faculty adapt to teaching an additional literature specialty on top of their usual course load of writing and introductory literature courses?

A helpful starting place for examining these questions is in the evolution of the two–year campus. Though community colleges have existed for decades, in the 1960s and 1970s global higher education systems exploded with the birth of technical schools and branch

campuses as well as international exchange programs that fostered the sharing of traditional curricula and literary canons formerly restricted to four–year universities. During the 1980s and 1990s, humanities courses splintered and multiplied to offer students focused study of Western culture in a variety of media and offerings.

The Merry Loves Of William Shakespeare

Over the past ten years, Shakespeare has been pulled into popular culture via the work of film stars like Kenneth Branagh (*Henry V* and *Much Ado About Nothing*), Al Pacino (*Looking for Richard*), and Gwyneth Paltrow (*Shakespeare in Love*). Several universities sponsor Shakespeare festivals in the U.S. and abroad, and reproductions of Shakespeare's theaters or theater companies invite patrons to enjoy his drama the way it was originally performed or with innovative production twists. The Globe Theater in London, for example, the brainchild of American actor Sam Wanamaker, opened to great fanfare in 1999, while a reproduction of the Blackfriars Theatre has been erected in Virginia and is now open to the public.

With the resurgence of interest in Shakespeare and the growth of community–based education, it was only a matter of time before the two converged. Two–year campuses became a springboard for catapulting Shakespeare even more deeply into popular culture with earlier introductions of the Bard to younger and less experienced students. As the academic pendulum has swung Shakespeare's way once more, community colleges have increased, expanded, and developed in their own right to provide appropriate and exciting settings for Shakespearean studies. My campus offers an annual Shakespeare Festival that takes place the first weekend in October when we sponsor the Shenandoah Shakespeare Express troupe from Staunton, Virginia. The troupe offers Shakespeare's drama the way its author intended it at a price that community members can afford, underwritten by the college and a host of sponsors. In addition, the troupe provides free acting workshops to local high schools as part of the college's gift to the community. Another Shakespeare festival is the one Bellevue Community College and Cascadia Community College cosponsor as a tour to the Oregon Shakespeare Festival in Ashland. There are several

others that take place periodically around the country. Community college administrators and faculty have become eager sponsors of such events, taking the initiative in awakening classic authors like Shakespeare and introducing them to the local community. If anything, faculty teaching skills and research efforts have benefited rather than splintered from these efforts.

In the first decade of the 21st century, the two–year college mission continues to evolve, and with it course offerings that include classical literature studies, including the study of Shakespeare. Several developments facilitate or enhance the teaching of Shakespearean courses at the community college level which should remove doubts about the faculty's ability to deliver such courses and the students' ability to manage them.

1. Technological Teaching Tools

As community colleges rushed to meet the demand for retraining a growing unemployed population in recent years, technology came to the forefront of program selections and teaching media. In June 2000, *Yahoo! Internet Life* magazine named my campus, University of Akron—Wayne College, the second "most wired" two–year campus in the U.S. In addition to a state–of–the–art distance learning classroom and over 200 computers on campus for student use, the college also provides *MS Word* training workshops for faculty and staff, *WebCt* course support, e–mail linkages, and a campus pipeline connecting our regional branch with the Akron campus. Students enjoy a host of on–line and off–line computer services that include e–mail accounts, distance coursework, AV support, and networked classrooms. Pedagogies have assumed a new vibrancy and breadth that help to deconstruct complex subjects, courses, and programs. Sixteenth– and seventeenth–century Shakespearean research is available at a students' fingertips, putting them in immediate touch with a long–gone era by using CD–ROMs, distance learning media, and Internet research, along with other Web services.

Since community colleges provide on–site or regional training banks for local companies and civic groups, community funding often helps to provide the most recent electronic technology which main campuses' classrooms may not necessarily share. Consequently, two–year

campuses can offer certain advantages and approaches to Shakespearean study that a parent campus cannot: Web–based support, on–site library holdings, and cross–disciplinary consultations.

In 2001 the Community College Humanities Association held a conference titled "Human Reflections and Connections." Sessions included "NEH Advancing the Humanities Through Technology—Best Practices Workshop" and "Romeo and Juliet: Promoting Critical Thinking." A literary staple, Shakespearean study remains part of many academic developments and pedagogical evolutions and is growing through the use of technological teaching innovations. Welcome to the twenty–first century community college, William Shakespeare.

2. Increased Research Support

The University of Akron recently was designated a Carnegie teaching institute, with several types of research support available to aspiring scholars across a variety of disciplines. Though our two–year campus does not provide research credit hours, our teaching load, like that of other two–year campuses, has been adjusted to allow for research expectations. Two years ago, our two–year campus faculty had a 90% to 10% ratio; that is, we were expected to spend 90% of our work time in teaching–related activities and 10% on nonteaching duties, such as committee work, community service, and research. This year our new load policy for senior faculty is 60% for teaching and 40% for nonteaching duties. Retention/Tenure/Promotion (RTP) expectations include a research component leading to publication in prestigious refereed journals in one's discipline or perhaps even a scholarly text. More two–year faculty are presenting at conferences, participating in global conferences, taking leadership roles in national and international organizations, and strengthening academic credentials and institutional visibility. Researching Shakespeare as part of a second–year humanities' course is a natural expectation and outcome of these advances that did not exist previously. Both faculty and students benefit from this type of funded research since faculty will share research findings in the classroom.

3. Primary Teaching Emphasis

Even with expanding research opportunities, at most community colleges the emphasis continues to be teaching in the discipline. While Shakespearean research is important, teaching takes precedence in the two–year college, and faculty continue to explore ways of making Shakespeare relevant to general education students during the first two years of study.

Generalized survey or introductory Shakespeare courses offer a navigable approach to literary study that prepares students for upper division courses following transfer to the four–year program. While a 1980s study reported a decrease in community college literature courses like Shakespeare, that trend has been reversed as more two–year campuses offer increased literature electives. Currently, campuses like Reed College offers English 242: Introduction to Drama: Shakespeare, Text and Performance, while Alma College in Michigan includes English 230: Shakespeare on Film (4 credits). Other Michigan campuses like Henry Ford Community College offer a three– or four–credit Shakespearean course. Grand Rapids Community College developed "The Shakespeare Project," "a Website developed and primarily maintained for undergraduate study of the plays of William Shakespeare" (<http://web.grcc.edu/english/Shakespeare/>). While four–year institutions carry on the traditional study of William Shakespeare in a similar vein, it is noteworthy that two–year campuses are doing the same, and doing it well.

Clearly, Shakespeare courses continue to be a mainstay of community college humanities options and English major or minor study—in some cases offered in a diversified stream of courses that rival or surpass parent campus offerings.

4. Faculty Collaboration

A strong advantage to teaching at a regional campus is the opportunity to collaborate with faculty from other disciplines. Often situated in the same or nearby building and sharing resources as well as occasional projects, faculty can conduct joint research or coordinate conference presentations or journal publications from a multi–disciplinary

perspective. At main campuses it is possible, though perhaps less feasible, to share ideas over lunch or coffee with a peer from another discipline. Kent State University Provost Paul L. Gaston believes that "the opportunity to confer regularly with colleagues from many different disciplines represents an intellectual discipline of its own. . ." (Gaston 13). But at four–year campuses spread across many acres and several buildings, it may be logistically challenging to schedule time with colleagues in other disciplines to discuss one's work and coordinate new projects.

Shakespearean study options could blend research from literature and history or sociology and humanities in any number of potential combinations. At Maricopa Community Colleges, course number DAN211 Dance Production II includes a segment devoted to Shakespeare and another to the Renaissance—providing interesting possibilities for exploring dance in Shakespearean drama.

5. New Income Streams

As more foundations, grants, and benefactors pour money into community colleges that provide life–long learning opportunities for every family member, new funds help to grow library collections, AV support, and professional development opportunities to better equip English faculty, among other things, for teaching courses devoted to Shakespeare. Perhaps a decade ago most two–year faculty taught writing classes or survey courses, but nowadays many also teach classical or literature courses that typically include Shakespearean drama or poetry.

6. Student Attention

Students at two–year campuses often perform better academically than students at four–year campuses. This success may be due in part to smaller class size, increased technical support, and enhanced personal attention that is uncommon at larger campuses. Not only do many students get off to a solid academic start in the local community, they also continue to build strong GPAs after transferring to a four–year campus for bachelor degrees. As Provost Gaston states with respect to branch campus advantages, "You bring the challenge, the breadth, the

opportunity of a university to your region with an immediacy and a capacity for personal attention that distinguishes you" (Gaston 12). In a close–knit environment, opportunities for specialized learning abound.

Rockland Community College is one of three community colleges, along with Westchester Community College and Montgomery Community College in Maryland, to offer program credit for a three–week summer session at Cambridge University in England. Dallas County Community College District advertises a "British Literary Tour: English 2321 and 2322" that includes a visit to Shakespeare's home. Such programs at the general education level provide an early and meaningful educational experience which prepares students to assume the serious study required in a major field. Clearly, community college students can benefit from specialized Shakespearean studies.

7. High School—Community College Connections

High schools also have adopted a concentrated approach to Shakespearean study, especially in honors or gifted student programs. For example, Sean Cavazos–Kottke teaches "Othello's Predecessors: Moors in Renaissance Popular Literature" at Tomball High School, a school that serves 2,000 students, most of whom go on to four–year colleges. Students who enjoy this kind of focused course at the secondary level expect to find similar course offerings at the college level, whether at two–year or four–year campuses. Community colleges that link with high schools to provide introductory Shakespearean programs help students to develop a taste for classics that can prepare them for college study and, eventually, for upper–division course work.

The community college represents many things to many constituencies these days. Shakespearean studies enjoy a secure place on a firm pedestal that serves the community's interests. Courses, festivals, and exchange programs foster appreciation for Shakespeare's works at a strategic point in the beginning of a student's college career. Classics courses at two–year campuses offer an exciting portal for advanced study. It is time to recognize the effectiveness and the ingenuity with which two–year campus faculty introduce a life–long appreciation of Shakespeare and his era to students early in their academic careers and thus bring the classics to life.

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Biography

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First Year Information Literacy Program

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Before beginning a discussion on the specific program developed by librarians in consultation with teaching faculty on the Stark Campus of Kent State University, I should first define Information Literacy. For years librarians labeled their teaching efforts as "Bibliographic Instruction." Like many other librarians, I perceived the introduction of "Information Literacy" as merely a new label for what we in the library profession have affectionately reduced to the abbreviated term "BI." Another initial perception of mine was that the term was developed by librarians with nothing better to do than to complicate a long–established concept by propping it up as something new, exciting, and important. However, after looking at the work accomplished by librarians to define information literacy—specifically the standards developed by ACRL (Association of College and Research Libraries)—it became clear to me that information literacy is more than just a new term or repackaging of an old idea. To me, it forms the core of what we do (or should be doing) as librarians on a college campus.

While bibliographic instruction involved teaching students how to use specific resources (the card catalog or print indexes to periodical literature) available in specific libraries, in specific disciplines for specific class assignments, information literacy incorporates general skills that provide individuals with the ability to find and use information effectively in any context, regardless of discipline or class assignment. The information literate person should be confident of his or her ability to resolve problems as varied as wanting to know the impact of the USA Patriot Act on the right of privacy or being able to name the actor who played Jesus in Mel Gibson's movie *Passion of the Christ*.

Information Literacy

ALA (the American Library Association) describes what it means to be information literate: "To be information literate, a person must be able

to recognize when information is needed and have the ability to locate, evaluate, and use effectively [as well as ethically] the needed information" (ALA Presidential Committee on Information Literacy, 1989). This definition is useful in that it specifically mentions four of the five information literacy standards developed by ACRL:

1. The information literate student determines the nature and extent of the information needed.
2. The information literate student accesses needed information effectively and efficiently.
3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
5. The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. (ACRL 2000).

Overview Of The First Year Program

Now that information literacy has been defined, an examination of the first year information literacy program on the Stark Campus of Kent State University shows that it can be divided into two instructional components and one assessment component. The instructional components are provided by librarians and delivered to two specific classes taken by most freshmen. University Orientation is a required course for all but a few incoming students enrolled for the first time at the Stark Campus. This is the first time students are given library instruction; so, the focus is to get them acquainted with the library, not to provide in–depth teaching of specific skills. During their second semester as freshmen, most students take College English II, a composition course that involves critical thinking and research writing. Most College English II instructors utilize a theme throughout the semester. For part of this English course the library teaches specific information literacy competencies.

For the assessment component, the SAILS (Standardized Assessment

of Information Literacy Skills) test (developed by librarians on the Kent Campus and adopted by the Association of Research Libraries to measure information literacy skills) is used. Students take the test during the orientation class and again after the English II instruction. SAILS provides a measurement to assess the effectiveness of the instruction by comparing in the aggregate the results for all orientation and English II students each year.

University Orientation

Students enrolled in University Orientation are typically not receptive to significant library instruction. Still, one class period of library instruction is a requirement of the course; about 30–35 sections are taught each fall. Most orientation teachers choose to bring their students to the library for one class period and have the instruction provided by a librarian. Students often resent having to take this one credit hour course since it is required but does not count towards their grade point average. During their first semester, many (if not most) freshmen do not have research assignments in other classes requiring the use of the library. With no research assignment required for University Orientation, students do not have a specific context in which to apply any library instruction. As a result, efforts to design and redesign the library instruction portion of University Orientation in hopes of teaching library skills have been largely unsuccessful.

Currently, the instruction provided by the library consists of basic skills for using the Stark Campus Library (or a watered–down version of bibliographic instruction, as described above):

- Navigating the library's web site
- Finding books in Kent State's online catalog (KentLINK)
- Requesting books from other campuses using KentLINK or OhioLINK (the state–wide consortium of college libraries in Ohio)
- Creating a PIN (personal identification number—needed to request books online or access databases from off campus)
- Finding articles in research databases
- Navigating databases (using tools to find the full text of articles or getting articles using interlibrary loan)
- Using library resources from off–campus

College English II

Students must first complete College English I, a basic reading and writing course with little research required. College English II, a course that typically covers 30–35 sections each spring, requires that students do more writing and conduct research in the library. Unlike University Orientation, no specific library instruction requirement is included in the course description. In the spring of 2002, the library met with English faculty to discuss adding a library instruction component to College English II for two reasons:

1. It would reach more students than any other course taught during the second semester, freshman year.
2. It would provide library instruction within the context of significant course requirements for conducting research.

Faculty at Stark often employ a broad theme throughout the course ("poverty," "coming of age," "misfits," etc.) or ask students to frame their writings relative to specific works like Truman Capote's *In Cold Blood* or Charlotte Bronte's *Jane Eyre*. This thematic emphasis creates a challenge in that, along with the introduction of information literacy competencies, instructors still desired the traditional bibliographic instruction (demonstrating specific resources to help students find information to complete their specific assignments).

It was determined that the library would provide two class periods of instruction. One class period would be devoted to showing students how to find information relevant to their course projects, while the other would be devoted to teaching information literacy competencies:

- Understanding information sources
  - Books
  - Periodicals
    - Scholarly Journals
    - Professional/Trade Journals
    - Popular Magazines
    - Newspapers
  - The World Wide Web

- Knowing how and when to use information sources
- Developing search strategies
  - Defining the topic
  - Breaking down the topic into key terms
  - Constructing search sentences using Boolean logic
- Critical thinking
  - Discerning good information from not–so–good information
  - De–emphasizing web resources
  - Differentiating between scholarly and non–scholarly works

These competencies are related to some, but not all, of the ACRL standards presented above.

SAILS

The original plan for using SAILS was to test students after receiving their University Orientation library instruction and then again after receiving their College English II information literacy instruction. The two groups of scores would then be compared in the aggregate to see if there were a significant difference between the two groups. During the first year of the program (2002/2003), no usable results were expected since it was the first time using the instrument and because only a handful of sections of College English II received information literacy instruction. Still, this early version of the test (which was administered in paper form) had a very high return rate for all University Orientation classes and the few College English II classes receiving information literacy instruction. The biggest problem was that those managing the test centrally on the Kent Campus performed the analysis by grouping all students taking the test the first year together (Orientation and English students' scores were not separated).

During this academic year (2003/2004), the biggest problem was that the response rate for orientation students was very low (only 35 students completed the test) because of the change from a paper test to a Web–based test. This change required local programming to pass certain data from students taking the test on the Stark Campus to the Kent Campus server, where results were stored. With energies focused on that critical work, little attention was given to emphasizing to

orientation instructors the need to have their students take the test. As a result, it was mentioned in passing and only a few students completed it.

Since the library was facing a significant problem in providing the information literacy and bibliographic instruction to more than 30 sections of College English II over the course of two class periods, a decision was made to attempt to teach half of the English classes, using the other half as a control group. This decision also introduced a problem in that some English instructors still wanted bibliographic instruction from the library, and the library was not going to deny such a request. To compromise, three groups of College English II classes were set up:

1. Sections receiving information literacy and bibliographic instruction (over two class periods)
2. Sections receiving only bibliographic instruction (during one class period)
3. Sections not receiving any library instruction

Differences between the three groups should provide interesting data regarding the success of the program.

The Future

At this point, the library is setting three initiatives for the program for next year:

1) 100% participation for SAILS by University Orientation students—The library plans to approach the coordinator of University Orientation on the Stark Campus to try to make SAILS a required activity for the course. It is crucial to the long–term success of the program to be able to adequately assess the information literacy skills of incoming students, before they receive any formal information literacy instruction.

2) Introduce ACRL Standard 5 during University Orientation—This standard is currently not addressed during College English II and is likely not to be added, considering what is already included in that instruction. Still, the issue of plagiarism is emerging as a significant

problem. It might best be dealt with early in college instruction as a separate topic, emphasizing the importance of intellectual ownership and academic honesty (topics not solely related to library use).

3) Offer the College English II instruction as two separate modules—With staff resource limitations (there are only four librarians on campus and one of them is responsible for providing library instruction to all sections of the orientation course), teaching more than 30 sections of this course for two class periods in the spring may be more than the library can realistically handle. Also, there has been some resistance by English faculty to release their class to the library for two entire class periods; moreover, scheduling conflicts have made a two–period instructional session difficult. Therefore, the library will evaluate the possibility of offering two separate modules, one for information literacy and one for bibliographic instruction. This flexibility will likely make it easier to adopt as an optional fixture related to College English II. But the library will emphasize and market the information literacy module as the most important one.

Conclusion

As I stated at the beginning of this discussion, information literacy is at the core of what we, as academic librarians, should be doing. Many still value libraries for the same reasons they always have. Some now challenge the need or relevant value of libraries in a world where information is not only readily available but exists in abundance. One needs only to do an Internet search using Google, for example, for the term "Jane Eyre" to confirm this opinion. In performing such a search, over 170,000 references to Web pages were retrieved in 0.23 seconds. It is nearly incomprehensible that such a seemingly esoteric topic should provide an abundance of information instantaneously. Perhaps this exercise demonstrates that the relevance of the traditional view of a library (as a physical place to store and retrieve information) may very well be threatened. However, the library as a teaching and learning environment where professionals teach and assist users in the skills of wading through the enormous amount of data currently available, providing strategies for refining searches, and imparting techniques for critically evaluating

the information discovered is more relevant than ever. I began by defining information literacy. I am now ending by concluding that information literacy may well be redefining academic libraries. At the very least, I hope it is.

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Biography

Rob Kairis earned his Masters of Library Science from the University of North Texas. Since then he has worked as a Cataloger, Systems Librarian, and since 1995 has held the position of Library Director at Kent State University's Stark Campus, the largest campus in the KSU regional campus system. While specializing in library automation, Kairis has learned how to manage all aspects of library service—skills librarians on university regional campuses learn by sheer necessity. His latest interests include Cooperative Collection Development (he serves on the OhioLINK Collection Building Task Force) and Information Literacy (he is a member of KSU's Information Literacy Faculty Learning Community). He can be contacted at rkairis@stark.kent.edu.

Designing An Effective And Personalized Virtual Learning Environment

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Abstract

The purpose of this paper is to identify design elements useful in the development of an effective and personalized virtual learning environment (VLE). Essential design elements include: choice of virtual learning environment, clearly defined student roles and responsibilities, and distinctive presence of the instructor. These design elements will be discussed in relation to their application in a VLE for a pre–service teacher education program as well as their applicability in other pre–professional programs. The virtual dialogue provides multiple opportunities for pre–service teachers to express their beliefs and offer options for professional behavior in an atmosphere at once supportive yet challenging because all discussants provide their personal insights into analyses of school situations. The clarification and probing effects of each discussant's postings support cognitive reflection of pre–service teachers' professional knowledge, allowing it to develop into more complex ways of knowing and acting.

Designing An Effective And Personalized Virtual Learning Environment

The purpose of this paper is to identify design elements useful in the development of an effective and personalized virtual learning environment (VLE). Learning environments, whether real or virtual, should be characterized by a high degree of interactivity among students and instructor. Internet–based instruction can facilitate the development and enhancement of interpersonal classroom dynamics by creating novel opportunities for student–student and student–instructor dialogue,

while engaging all members of the learning community in rigorous and unique learning situations. For implementation of technology to translate into enhanced learning opportunities, however, careful attention to design of a VLE is essential. Essential design elements include: choice of virtual learning environment, clearly defined student roles and responsibilities, and distinctive presence of the instructor. These design elements will be discussed in relation to their application in a VLE for a pre–service teacher education program.

Design Elements

Choice of Virtual Learning Environment

Internet–based course software offers communication in two primary time frames: real–time and asynchronous. Real–time opportunities mimic conventional or "real" class meetings at specified places and times. There are fixed starting and stopping points at which all participation occurs. Examples of real–time Internet formats are chat rooms and whiteboards. While chat rooms provide dual advantages of offering immediate feedback and serving as electronic office hours, chat rooms tend to limit dialogue among students and instructors in the same ways that real classrooms do. The immediacy of time itself encourages quick responses to questions, rather than allowing participants to think and reflect about issues. A delay in responding would find the participant behind the flow of conversation, with the active members of the group having moved on to a different topic. A limited number of discussants can participate within the time allotted; thus, time controls the discussion rather than development of ideas.

Real–time formats are comparable to an intermittent stream, while asynchronous formats such as discussion boards and e–mail exchanges can be compared to a deep lake. Students can take minutes, hours, or even days to think about others' comments and incorporate their own beliefs and experiences into a thoughtful response. Relationships among students can become based more on intellectual connections rather than on personalities and demographic similarities such as age or gender. Participants can relate to each other based on substantive factors, such as the common real–life experiences, the responses they give to others, and their ability to combine academically rigorous theory with real–life

practicality and experiences. More importantly, all students have equal opportunity and extended amounts of time to contribute to the learning environment: "In a traditional classroom period of one hour, every minute that another student speaks is a minute less of opportunity for [others]. Unlike a traditional classroom, time in the online community is theoretically limitless; it is not a zero–sum game" (Hamilton and Zimmerman, 2000, p. 267). Asynchronous course design allows for "built–in pauses in communication so important for absorption and integration of material, creativity . . . and deepening connections between ourselves and others" (Fontaine, 2000, p. 42). Rather than the immediate responses generated in face–to–face dialogues, VLE conversations progress over an indefinite period of time, with multiple opportunities for individuals to respond.

Asynchronous discussion boards also provide permanent and accessible records for participants to refer to repeatedly. Discussion boards preserve entire threads of discussions in a text record, allowing participants to review or reinterpret earlier remarks or pick up an earlier idea and apply it to a new topic: "It also provides a more structured and well–documented basis for critiquing earlier points or building the case for an idea drawing on multiple contributors" (Hudson, 2000, p. 80). Students are able to use their postings or the postings of others as evidence of past experiences and then use the student–generated data in the formation of new beliefs or working hypotheses for informed action.

Clearly Defined Student Roles And Responsibilities

As with any course, VLE–mediated instruction should clearly define the instructor's expectations of the students. Type, amount, and purpose of participation, especially in light of the course objectives, should be specified from the outset. Students should be informed of how their participation in the VLE can enhance their learning process, as well as understand, initially from the instructor's perspective and eventually from their own experiences, how the VLE allows them to pursue the learning process in a new and meaningful way. The novelty of VLE often brings with it technological obstacles for both students and instructors; the value of overcoming those obstacles in part includes fashioning new and active roles for learners. Students should be guided

to realize the learning capacity that their peers have to offer them in a VLE. In this study, the instructor's expectation for effective online postings included discussion which connected students' personal experiences, theoretical issues, and experiences or insights of peers: "The faculty's greatest contribution is to establish the learning opportunity—to define the topics and initialize the boundaries of inquiry. Beyond that, students often fill many of the traditional professorial roles, including acting as sources of information, [and] explaining and illustrating critical concepts" (Hamilton and Zimmerman, 2000, p. 274).

Assignments should be designed to encourage collaborative learning by organizing students into small working groups, with responsibilities ranging from discussing leading questions to completing group projects. Based on the objectives of the course, students may be expected to incorporate real–life experiences into their discussions, and to reflect on the intersection of theory and personal experiences. Dewey defined reflective thought as the "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (1933, p. 9). Palloff and Pratt indicate that "if the course has been designed to incorporate and invite real life experience into the classroom, students can begin to explore the material being studied not just from an academic standpoint but through the personal meaning they derive from it" (Palloff and Pratt, 2001, p. 83). When students are given opportunities to formulate and justify their beliefs, they develop a stronger basis for those beliefs, and better understand how those beliefs are implemented into professional practice.

Developing A Sense Of Presence

Establishing presence is an ongoing process that begins in the design stage of a VLE course and continues throughout course implementation. Presence describes how the instructor conveys a teaching personality through the electronic medium and how both students' individual and group identities are recognized. Presence, developed as the instructor and individual students merge into a community of learners, is essential to engage the students in the learning process. Key elements of presence include: a) prominent psychological texture of people and assignments; b) superior interactivity and responsiveness of participants; and c) a

combination of meaningful, predictable, and novel course content and activities (Fontaine, 2000). Psychological texture is created by the tone and types of instructor–student interactions, student–student interactions, and through the use of technology itself. Sensory stimulation provided by text, visuals, and audio, as well as by the physical layout and ease of navigation of the Website itself, can also help to create psychological texture. Interactivity of the participants can be enhanced through formation of small working groups and by frequent nondirective feedback (Fontaine). Presence of the instructor can best be established through online facilitation focused on building a learning community among the learners, rather than through using traditional didactic language. VLE can create ideal opportunities for professional dialogue and reflection. Flake (2001) suggests that VLE can change the focus from individual learning to development of a learning community: "Many ideas will evolve out of social constructions and interactions with others as more and more become involved in the construction process" (p . 47). It is important that the instructor refrain from frequent use of the voice of authority and instead encourage students to discover their own intrinsic authority and professional stance.

Implementation Of Design Elements In A Pre–Service Education Program

In teacher preparation programs, field experiences are considered to be core opportunities for students. Unfortunately, cognitive and psychological conflicts occur frequently as pre–service teachers encounter experiences that are non–supportive of either theoretical components of university–based courses or of their pre–professional novice skills. Development of hybrid courses utilizing Virtual Learning Environments permits uninterrupted intellectual and social contact between instructors and students during this critical educational experience. In the interactive environment, students not only maintain a journal recording their experiences but also are challenged to think critically about their own and their peers' experiences. For pre–professional students in all fields, navigating through a VLE can enhance students' professional growth by encouraging dialogic reflection on theories and personal experiences.

The fundamental educational objective of utilizing VLE is to provide

students with a discussion forum while they participate in an off–campus experience. Asynchronous communication techniques were selected to best serve the needs of the students. Students were instructed on how to use the discussion board, initiate threads, and navigate the site. E–mail was used for private communication, including critiques of teaching observations or problem–solving. The calendar was used by students to schedule classroom observations and to recognize birthdays and other celebrations. Students' requirements for the online aspect of the course were limited to discussion postings.

Course objectives included both discipline–specific outcomes and outcomes focused on the value of professional growth and reflection. The learning outcomes formed the bases for discrete sets of discussion questions, with image and text prompts linking the website's home page to the discussion pages of the site. Students, randomly assigned to a discussion group for the duration of the course, were required to post ten messages each week in asynchronous discussions, but most students posted more frequently. The instructor developed a high psychological texture by making frequent nondirective postings, by referring to multiple student postings in selected responses, and by twice–daily readings of new postings. The instructor attempted to support student responses rather than dominate discussions.

Student dialogues were paramount in this course. The clarification and probing effects of each discussant's postings supported cognitive reflection of pre–service teachers' professional knowledge, allowing a student's knowledge to develop into more complex ways of knowing and acting. The virtual dialogue provided multiple opportunities for pre–service teachers to express their beliefs and offer options for professional behavior in an atmosphere at once supportive yet challenging since all discussants provided their personal insights into analysis of school situations. The interplay of postings within each group enhanced the possibilities inherent within each individual posting, until a more complex and highly textured scenario was portrayed. Some postings were speculative but nevertheless spoke to the possibilities that a teacher can encounter in the classroom. The opportunity to share assumptions about practice in an interactive environment clarified existing personal beliefs and encouraged pre–service teachers to expand their perceptions about the nature of teaching and of professionalism.

A conversation from Group 1 provides an example of how the students documented their experiences, tied it into peers' experiences and academic knowledge, and supported and integrated knowledge from their peers. (All names are fictitious.)

Group 1
Week 4: Professional Development
Threaded Discussion Strand: Reflection

> Message no. 1892
> Posted by Joshua, Tuesday, February 24, 2004 2:48 P.M.
> Subject: Reflection
> Part of professional growth is reflecting on experiences and lessons. I taught a lesson today and filled out the Pathwise lesson format. After I taught the lesson I filled out the reflection portion and it helped out. I also talked to KB and my CT and I critiqued myself. This reflection helped me teach the next period. I got a little tired of reflecting on things last semester, but reflecting on lessons seems very beneficial. It all becomes clear to me what needs to be changed once I put it down in paper in a reflection.
>
> Message no. 1964 [Branch from no. 1892]
> Posted by Maurice on Thursday, February 26, 2004 11:33 A.M.
> Subject Re: Reflection
> There is a lot to be learned from looking back on a lesson afterwards. I did one yesterday that I knew was more then likely going to fail and for half the day I was right. First period it was a little rocky but not too bad. I saw a problem with the length of the lesson but we played a review game of the lesson to correct that. Second period the lesson was bad. I bounced around all over the place because I just kept forgetting things and then I would go back to them. I was off and it hurt the class. I also decided not to do the game and skipped back to something else. It was just not good. Then 3rd period started a little rocky which was due to my over thinking of the period

before. Ironically 4th period which I figured would be the worst because the class all week has been sort of hyper because yesterday was one boy from the class's last day was the smoothest things went. The students seemed into things and I used the review game instead of trying to do something already done in the lesson. Nothing beats experience to show you what works but maybe more importantly what does not work.

Message no. 1995 [Branch from no. 1964]
Posted by Instructor on Friday, February 27, 2004 12:04 A.M.
Subject Re: Reflection
It is an important sign of Professionalism to be able to change things on your feet. Good job!

Message no. 2015 [Branch from no. 1995]
Posted by Catherine on Friday, February 27, 2004 3:38 P.M.
Subject Re: Reflection
I had a very interesting reflection experience yesterday. I taught a lesson for the first four periods that I had brought in on my own. The students seemed to enjoy it, and my teacher really liked it. He asked for a copy of the lesson to combine it with another lesson he does earlier in the year that he thought was missing something. Well anyway, he was going to teach the lesson to the other classes of the day. Well I told him that I would come back for the rest of the periods because I was having a discussion the last ten minutes of class and the 4 periods really loved it. Well, he taught my lesson during the afternoon until the discussion. He taught it differently than I did. It was really interesting to see what he would change about my lesson. He set it up a little differently, and made some changes. I agreed that most of the changes helped the lesson, but I did not agree with the way he changed some of it. When I decided that I thought the way i did some things was better, I had a realization that I have honestly found a large chunk of my teaching philosophy. I realized I have an opinion about exactly how I think the students should be presented with

material. It was really nice to see that I am growing into a professional.

Message no. 2044 [Branch from no. 2015]
Posted by Suzanna on Saturday, February 28, 2004 10:52 A.M.
Subject Re: Reflection
Congratulations Catherine! I found myself in the same situation. I taught our learning stations for Social Studies Methods, and my teacher helped me the first period. I remember overhearing what he was saying to some students at a station and I remember thinking that wasn't what I wanted them to get out of it. I set it up a certain way with a certain goal in mind, and he completely changed it. Some of the changes he made were okay due to time constraints, but they weren't getting to the objectives I had set up for the station. When I did it completely on my own, I used some of his ideas with the way I had originally intended the station to be used for. Maurice's also right. When lessons go right you don't always take an opportunity to reflect on what went right. When things go really wrong, you could reflect for hours!!

Without the technology, students would have been physically, socially, and intellectually isolated from their peers and the instructor. The dialogic interaction within the VLE promoted reflective thought among pre–service teachers. While not every posting was "reflective," each thread developed awareness among the discussants of multiple perspectives related to classroom situations. The quality of the threaded discussions as a whole indicated that the pre–service teachers expanded their beliefs and perspectives on issues that before had been viewed simplistically.

Implications

Reflection generally implies making a comparison between several options of action, interpretation, values, or future intent. Solitary reflection, often done through paper journals, may not be the best approach to examine one's own assumptions and beliefs. Online dialogue

is not a linear process, for just like discussions in real time and space, there can be disagreement, new evidence, and side issues. The extended time allowed within an asynchronous environment further promotes the progression toward professionalism, as time to reconsider one's own views or others is built into the format. Dialogic reflection allows students to understand their beliefs by interacting with peers whose beliefs may be different from their own. The power of discourse to clarify meaning and understanding of novel situations may be used: "Speech forms are our great carriers, the easy–running vehicles by which meanings are transported from experiences that no longer concern us to those that are as yet dark and dubious" (Dewey, 1933, p. 235). Dialogic interactions promote the examination and understanding of one's own beliefs by examining others' beliefs. Greater confidence in personal positions can be based in evidence as well as in values.

The unique attributes of a carefully designed VLE experience can dissolve dualisms that exist in real classrooms. VLE, unbounded by space and time, can create a sense of both privacy and intimacy while building a permanent record of ideas, observations, inferences, and emotions that is accessible to all discussants or only a selected few. Instructional technology provides opportunities to share assumptions about practice in an interactive environment, to clarify existing personal beliefs, to expand perceptions of students' about the nature of professionalism, and to guide students into becoming fully engaged in the professional community.

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Biography

Claudia Khourey–Bowers is an assistant professor in Middle Childhood and Science Education in the Teaching, Leadership, and Curriculum Studies Department of Kent State University—Stark Campus. She teaches courses in undergraduate curriculum theory and science methods. Her research interests include teacher beliefs and the development of professional identity among beginning teachers. Khourey–Bowers may be reached at ckhourey–bowers@stark.kent.edu.

Bridges To Diversity

Gregory D. Loving
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We receive confirmation that a concept has reached general importance after it trickles down through the sedimentary layers of committees, bureaucracy, and administration to bubble up to the surface in the form of paperwork. In education the term "diversity" has walked the long institutional mile from concept to checkbox. At the University of Cincinnati Clermont College in Batavia, for instance, professors must now indicate whether or not proposed courses fulfill a diversity requirement and turn in yearly reports about diversity activities. In addition to this bureaucratic surveillance of diversity, UC Clermont has a group of staff and faculty called the "Diversity Task Force" whose mission it is to promote diversity on campus. Not a "think tank," not a "committee," not an "advisory board," but a "Task Force." They have politely refused the suggested name of "Diversity Strike Team."

The combat metaphor is revealing, for all too often diversity is seen as a battle between students resting comfortably in their infidel walled cities, resisting all outside influence, with professorial knights catapulting great chunks of knowledge in chivalrous hope of breaching the mortared minds of the unconverted. Education is seen as a battle in many of Ohio's regional campuses, which are frequently rural extensions of more urban campuses. These campuses often suffer from a lack of diversity when traditional, stereotypical measurements of diversity are used: "Hicks and rednecks." Of course, this kind of talk will not be heard from any official or publishable source but is heard regularly in hallways and offices, lounges, and parking lots. I have engaged in it myself. We often, and for good reason, see education as something we do not *for* the student, not *with* the student, but *to* the student.

In a seemingly monolithic cultural setting, how do we abandon diversity as a battle and enter into a common journey of discovery with students? The first step is to examine common notions of diversity which focus on external factors and point out weaknesses in this approach.

Second, an expanded definition of diversity based more on internal factors may be sketched which puts the professor with the students instead of against them. An expanded notion of diversity allows bridges to be built between traditional ideas of diversity, or external diversity, and the diversity which all students feel from their own perspective, or internal diversity.

External Notions of Diversity

Early efforts to incorporate university–wide diversity focused primarily on issues of race and gender (vom Saal et al. 89). The situation has largely not changed; prevailing notions of diversity in education focus on the issues of race, ethnicity, and gender (Dhillon and Halstead 155). An investigation of current sources of diversity information for higher education such as *Diversityweb* (www.diversityweb.org) reveal that this focus is well–entrenched. To some degree, socioeconomic status is also included but tends to be a subsidiary issue to the "big three." There is, of course, a very good reason why diversity should target the issues of race, ethnicity, and gender. Historically, the bulk of widespread misunderstanding, discrimination, and violence has swirled around these three. The worthy political goal of diversity is to mitigate this injustice and prepare students for a world of increasing cultural interaction.

Educators have lofty goals for diversity which not only include a political agenda but also encompass goals of understanding and acceptance of different ways of life. Too often, however, educators seek oversimplified paths for reaching those goals. The fact that race, gender, and ethnicity are more easily *measurable* than other diversity factors lends them to bureaucratic purposes. When schools take on a representational approach to diversity based on statistics, conflict arises in knowing what numbers to shoot for. What population should the student body represent? Should the faculty represent the racial/ethnic/gender makeup of their local community, their state, their country, or some other benchmark? UC Clermont College, for instance, is in Clermont County, Ohio, which is approximately 97% White ("Quick Tables"). Ohio, on the other hand, is approximately 85% White, while the United States is approximately 75% White ("State and County Quickfacts"). Setting aside the cultural differences washed over with

the term "White," the Clermont faculty is already more than twice as "diverse" as the county, only slightly less diverse than Ohio, but less much diverse than the United States. So, is the faculty diverse or not? When the political agenda of diversity takes precedence over the educational, educators may become complacent, for while "good numbers" may have been achieved, diversity in attitude and approach may still be lacking. Numbers serve an important purpose but only if they indicate internal as well as external differences.

The diversity educators are after is more mental than physical and is more difficult to measure. Though physical difference often correlates with mental difference, causal links sometimes escape attention. Two people who look exactly alike, from the same cultural background, can think in radically different ways. Two people who look radically different can have the same mindset. Diversity strives in essence not for variety in look but variety in outlook. Ironically, many faculties are a good deal less interesting and various in attitude and custom than the students they teach, regardless of ethnicity or gender. When college professors complete their enculturation into "the folkways of academe as reinforcers of traditional academic practice," they often share a common outlook regardless of their difference in look (Adams 7). Those who do not fit the existing system are weeded out. Administrative cultures in many schools create increased stress for racially and ethnically diverse candidates, effectively dissuading those who do not fit the existing paradigm (Vaughan 10). Those faculty with creative ideas left after toeing the long tenure line have often lost the energy to put those ideas into action. Square holes do not attract round pegs. Educators worry that the educational system may create cookie–cutter students, overlooking the fact that the current system is expert at creating cookie–cutter teachers.

Internal Notions of Diversity

If diversity education is to be truly successful in areas of seeming racial and/or ethnic monotony, the first step is to start with internal instead of external diversity. Internal diversity is that difference each individual feels from other people. While this difference of feeling may certainly include race, ethnicity, and gender, there is no standardized diversity.

Notions of diversity which rely on ethnicity are based on a very static notion of culture as "hermetically sealed," when culture is in reality a very fluid and individualized dynamic (Dhillon and Halstead 156). Diversity depends on perspective. Whereas a group may appear to be lacking in diversity of the external sense, the people in that situation may see a great diversity from their internal perspective. Bureaucratically convenient categories such as "White" or "Hispanic" ignore the very intricate and changing construction of identity for individuals within those groups (Nieto 26). A person may see himself or herself as radically different from others, even though of the same standardized race and gender categories.

We often run across internal senses of diversity in surprising places. I am an avid listener of WOBO radio in Batavia, an independent public station that plays bluegrass, country, big band, jazz, polka, and a variety of other music. Jenny is the disc jockey on the Wednesday morning bluegrass show. I was listening one morning, and she was apologizing profusely that the next song she was going to play was not a bluegrass song. She liked it so much, however, that she was going to play it anyway. In this regard her view was that listeners should not expect her to ever do it again and should not call and request anything other than bluegrass or expect her to play anything other than bluegrass. Then she played a Hank Williams song. Now, to many people there is not much space between traditional country music and bluegrass. To Jenny, though, playing Hank during a bluegrass show would be like playing Tom Jones during a Led Zeppelin retrospective. Just because many may not recognize the diversity Jenny sees from her perspective does not mean that diversity is not there. Every group, no matter how small, is a culture. Every culture blends and overlaps others, from cultures of two to two billion. From an anthropological perspective, every culture is equally interesting, filled with tradition but changing every moment in concert with its surroundings.

Whereas educators may think from an external sense that the classroom is lacking in diversity, the students often see a great range of diversity from their internal perspective. At the root of diversity education is getting students to see the world from different points of view. Students are aware of many different perspectives already existing in the ethnically challenged classroom. Age, for instance, represents a

form of diversity that students recognize and welcome. Different ages mean different generations, different ways of looking at the world, which is what diversity is all about. There are always a few traditional punks or Goths running around who mix things up a bit. Economic diversity frequently exists in the classroom and often causes a great deal of practical tension. I have had students in my classrooms with no phones or running water, and other students with BMWs and global positioning PDAs. Group projects which require the students to buy extra supplies can often create more uncomfortable scenes than race will. A thin White person and a plump White person also see the world differently. Even the town, county, or state that students are from represents an element of diversity which students find important and significant: "Oh, they're from *Kentucky*—that explains it." I have had mothers and their daughters in the same class, preachers' wives and strippers, police officers and felons, Mormons and Baha'i. And they were all White. No matter what the classroom racial, ethnic, or gender makeup, diversity is the rule, not the exception.

Sometimes students have been so indoctrinated by stereotypical notions of diversity that they have a hard time realizing their own internal diversity. When I taught in Berkeley, I had students from six continents (and I knew one gentleman who had worked in Antarctica), Buddhists, a Black Panther, transgenders, polygamists, and the list goes on. Berkeley is a stereotypical model of sexual, racial, and cultural diversity. One student in class was from Wisconsin and grew up in a small town of White folks of very few shades. She was thoroughly convinced that she was the most culturally truncated person in Berkeley. When I started asking about her non–diverse upbringing, however, clear notions of ethnicity started to arise. Her hometown had been settled by Swedes, and later many Norwegians immigrated to the area. She was of Norwegian descent, and definitely lived "on the other side of the tracks." The Dutch who had also come to town kept to themselves, just hoping they did not have to condescend to deal with the Germans. Schools were practically segregated, as were social clubs, churches, and softball teams. All of a sudden a lily–White woman from the cheese state realized that she did indeed have something in common with the Black Panther. Her newly recognized sense of internal diversity allowed her to deal with the aspects of external diversity which Berkeley is well known for.

Swedish oppression of the Norse may not equal some other forms of oppression, but the same dynamics are at work. As long as students can understand and recognize these dynamics in their own situations, they can translate the dynamics into differing contexts.

Internal diversity, however, does not automatically lead to external diversity, to the political goal of tolerance or to the educational goal of understanding. Difference from others can be threatening and foster intolerance if the bridges from internal to external diversity are not thoughtfully constructed. Educators should first recognize that they share the same fear of difference which they often find among students. We professors advocate traditional notions of diversity because those notions are safe for us. There are many kinds of diversity, however, that do not fit well with our tame, harmonious, rainbow notions of diversity. If a student shows up to school wearing a sari, we might support this notion of diversity. If a student shows up wearing an Amazonian penis gourd, this accoutrement violates our cultural notions of decorum, and we would not accept it. Real diversity in the world is an amazing, frightening kaleidoscope of the interesting, the weird, and the downright dangerous. There are many ideas and customs in the world which we may want to question; among them are such notions as fundamentalist Islamic women's roles, child labor practices, female circumcision, and slavery.

Many of the very cultures we wish to include share many of the characteristics in our students that we seek to modify. Worldwide, local cultures are frequently egotistically and culturally arrogant, resistant to understanding and tolerance, and unable to see the value of differing perspectives. People often do not care to call their own ideas into question or try to understand someone who holds a conflicting view, regardless of whether they live in Bethel, OH, Berkeley, CA, or Khartoum, Sudan. Strangely enough, much of the diversity we wish to incorporate requires other cultures to stay true to their own cultural stereotypes. We decry their pollution by western culture while at the same time demanding that we incorporate elements of other cultures into our own. We recently hosted a Tibetan Buddhist Lama at our campus. Several faculty members were shocked that he ate meat, which conflicted with their notion of what a Tibetan Buddhist Lama should do or be. An American eating curry is diverse. A Lama eating a Big Mac is a travesty.

Our notions of diversity seldom exceed our own comfort level with difference, and this characteristic we share with the students. Our willingness to discuss reasons for not accepting some ideas and traditions can open a discussion with students as to why they may not be willing to accept ideas or traditions which we advocate. The art of questioning, which is at the heart of the educational journey, must start with the professor if the students are to see value in it. Students and teachers are on the same journey. Getting criteria of acceptance and nonacceptance of difference out in the open can only help on the journey. Students should not experience education as a forced march, and we should not ask them to engage in questioning in which we as teachers are not willing to engage. Freedom is the ultimate agenda of diversity, politically and educationally. The journey to diversity need not have an end if we assume that everyone, student and teacher, regardless of background, could benefit by exposure to different perspectives. We may indeed see diversity others do not, but they see diversity of which we are ignorant. If we set ourselves up as the ultimate judges of diversity, we will not only alienate students and miss out on much ourselves, we negate the very concept of diversity we are trying to teach.

Despite our frustrations, students do see the value of diversity. They enjoy different perspectives and are willing to experience more. What they do not accept is teachers who approach them antagonistically and arrogantly, enforcing preconceived notions of diversity. I recently talked to an all–female class about these issues. They felt that there were few problems accepting diversity at Clermont and that the few problems they did know about were blown out of proportion by the faculty and staff. They even said that they often do not even notice whether a person is of another race. Is this acknowledgment not the ultimate goal of diversity? I shared this reaction with a fellow professor who responded that if the students cannot see the problems, then the students might be part of the problem. The students were in turn indignant because this attitude assumes that students have little depth of thought about these important matters. Such attitudes, the students said, make them resist diversity education even though they agree with its ultimate goal. Even though this professor's assessment may be correct, it does put students in a Catch–22 position. If students deny they are racist, they are racist. If they admit they are racist, they are racist. If students cannot

be heard and their opinions taken seriously, they have no reason to engage in the discussion.

Bridges to Diversity

Students win when educators start with students' internal notions of diversity and then build bridges with them to a wider, external diversity. If we are to get anywhere, we must recognize the authentic cultural values which already exist in the classroom, even if that classroom is from our external perspective merely White (Welch 103). We have to eliminate the attitude that we are where they need to be and acknowledge that we share some of the same biases and concerns that our students do—the same discomfort with difference. If it is clear to students that we see them as remedial monoliths of intolerance needing rehabilitation, students will close their doors to us, and I do not blame them. When we start where the students are, they are more likely to come along with us on that common journey. This tactic is also good educational practice—start with existing knowledge as the seed for learning more. When teachers learn the differences students feel from one another, they can use these internal differences as bridges of understanding to bring in other diverse viewpoints and influences.

This approach, however, requires the professor to become a student, to learn about and respect—and expect—the differences which exist in the classroom. When the differences are acknowledged, the professor can then work to tie this internal sense of diversity to a larger vision of diversity. Every school, every classroom will be different. Ironically, diversity education will not accept a standardized approach. "Six Quick Tips for Incorporating Diversity" negates the very idea of radical diversity. Diversity in content requires diversity in approach. Diversity in approach benefits everyone in the classroom, not just those who exhibit differences in race and ethnicity (Anderson and Adams 30). Professors have an opportunity here to model the joy of learning to the student. If we show that we are eager to learn from them, they will be more eager to learn from us. If they feel, however, that we are administering a treatment for some disease of intolerance, for their own good, they will resist not because they reject diversity but because they reject parentalism. We are after differences in outlook of any kind, not merely the differences that

are on our handy pocket checklist or the differences we happen to enjoy.

Beginning with students requires flexibility on the part of the educator. A syllabus which is jammed from day one until the final exam, for example, does not allow such flexibility. A set portion of the class is necessary, but to start where the student is, a flexible and open portion of the class is also necessary and requires more time and energy, but the increase in learning is a great reward. If we want a world of equality and reciprocity, we must model that world in the classroom. We are asking students to escape the cultural ruts we assume they are in. The least we can do is to escape the teaching ruts we are in—abandon those lecture notes based on a three–edition–old textbook, try new teaching methods we may not be comfortable with, use assessment methods which we find not to be convenient but to be accurate and amenable to a variety of learning styles.

Once flexibility allows some room to begin with the students, teachers should look for any avenue of existing difference in class. Informal discussions with students can lead to much information for a professor willing to ask questions. Small group discussions among students are other good practical ways of learning about individual differences. Students in small group discussions gravitate toward their own interests and background, including during the time they stray from the given task. Attentive listening on the part of the teacher can go a long way in learning what diversity exists and how to link newfound elements of diversity in ways the students can understand. One might think this method can work only in humanities classes which can easily be geared toward the students' cultural experiences. Even math and science groups, however, hold a wealth of information during informal portions of the discussion during lab work or problem solving.

There are a number of differences which teachers may expect to be represented in class. Age, economics, employment, and recreational interests will often exhibit wide diversity. One of the most fruitful areas of diversity in any classroom, which professors are often reluctant to deal with, is religion. Religious differences are a gold mine of bridges from internal to external diversity, especially in these times in which religious differences fuel many of the world's problems. All major religions have differences within them which

parallel differences among them. At UC Clermont, for example, students are fairly evenly split between Protestant, Catholic, and nonreligious. Though the religious affiliation may seem Christocentric, there are actually a wealth of religious differences which can help students understand other world religions. The Catholic tradition of saints, for instance, helps illustrate the Hindu system of multiple gods as many visions of one the reality. The Baptist aversion to saints in the Catholic tradition parallels the Islamic refusal to allow any visual depiction of Mohammed. What is familiar to students can be used to help them understand the unfamiliar.

Finally, classroom discussion serves as a model for discussion in the world outside the classroom. While diversity enhances the educational goal of helping students see things from different perspectives, those perspectives will never merge into one monolithic point of view. Difference, disagreement, and conflict will always come along with understanding, and understanding will not always flower into acceptance. If diversity is valuable, however, agreement is in a sense the enemy. One of the most important things educators can do, then, is not to model agreement but to model disagreement. When we acknowledge that we will disagree, we can begin to practice constructive conflict in a way that "can be an invitation to a deeper relationship, part of the process of creating a stronger community" (Welch 105). Organizations such as the International Association for Conflict Management are good resources for teachers wanting to model healthy ways to deal with disagreement and conflict (www.iacm–conflict.org). If teachers model to students both understanding and disagreement, then students take with them the ability to disagree with fewer negative consequences.

The art in building bridges from internal to external diversity is not to lead with our agenda but to start where the students are and incorporate diversity which they are more likely to understand and value. This process begins with listening to the students, expecting and learning the diversity they already realize. Teaching must be flexible enough to start with what the students already understand and to adapt that internal diversity to the process of realizing external diversity. When students learn and enjoy the process of diversity, they will continue the journey when they leave the classroom.

Conclusion

Diversity education requires diversity in thinking, not just diversity in appearance. Diversity is not just a political concept administered to the student for the benefit of society. If education approaches diversity in a static racial, ethnic, or gender model, educators and students alike miss much of the diversity which already exists in every classroom. All students have unique and valuable cultural perspectives, regardless of the bureaucratic categories they do or do not fit into. We educators can begin with the student by admitting that while we have different definitions of difference, we all have discomfort with difference but also all embrace difference at some level. To make the leap from internal to external diversity, from the diversity already in the classroom to a larger sense of diversity, learning must come before teaching. If educators begin the journey by examining and celebrating the diversity which already exists in each classroom, students are more likely to participate in understanding those differences outside the classroom.

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Biography

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The Senior Capstone Project: One Method Of Connecting With The Community

Mindy McNutt
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Introduction

More than ever before, institutions of higher education are valuing the mutual benefits of engaging in collaborative efforts with their local communities. Stressing the importance of these institutional connections, Senator Edward Kennedy (1999) commented:

> Colleges and universities should not only be accessible to students; they should be accessible to their communities as well. Colleges and universities can be constructive partners with their communities on issues such as economic development, elementary and secondary education, health and human services, investments in neighborhood, and scholarship outreach. (p. 147)

Kennedy further emphasizes the notion that "universities should *strengthen* [italics added] their involvement in community partnerships" (p. 147).

Much of the limited literature that has been written on university–community partnerships has focused on partnerships within an urban environment (Al–Kodmany, 1999; Buettner, Morrosin, and Wasicek, 2002; Kennedy, 1999; Kotval, 2003; Mullins and Gilderbloom, 2002; Palm and Toma, 1997; Reardon, 1999; Sanders, 1996). However, rural colleges—whether community, technical, or regional campuses—have just as great an opportunity and responsibility to partner with and have an impact on their local communities. While there are numerous ways that engagement can occur, the author believes that an effective way to

connect with local communities is through the senior capstone project.

This article reviews the reasons why institutions partner with their local communities and outlines a variety of ways that partnering can occur. Moreover, an overview of some of the benefits and challenges that arise from these relationships is presented. One example of connection with community—the senior capstone project—will be outlined. Finally, the author will outline some examples of the many individual levels by which the institution can connect with the community.

Partnerships And Community Involvement

Why do colleges and universities partner with their communities? Historically, institutions have become involved in their communities as a result of institutional missions, external expectations for knowledge and expertise, and a need to maintain amicable town–gown relationships (Bringle and Hatcher, 2002). Moreover, for years, students in selected disciplines have, as a result of disciplinary requirements, been engaged in "living what they have learned" in community organizations, institutions, and agencies. For example, students in teacher preparation programs engage in student teaching with local schools; nursing students are required to do clinical experiences in hospitals; and students in social work programs do practica in local social service agencies.

More recently there has been an explosion of service learning projects on college and university campuses in response to Boyer's (1990) call for civic engagement on the part of institutions of higher education. According to Bringle and Hatcher (2002), ". . . this call for civic engagement has awakened renewed interest in promoting institutional citizenship, building new campus–community initiatives, and promoting a broad sense of civic responsibility in higher education" (p. 504). Thus, students are sent into the community to work on various projects (such as Habitat for Humanity) to learn the lessons of civic engagement and responsibility.

Moreover, there have been shifts toward broader definitions of scholarship which have engaged faculty in community research, teaching, and service, thereby connecting the faculty to our communities. Additionally, faculty members are requiring students to engage in more

active learning strategies, such as internships, applied projects, experiential learning, and participatory action research—all of which place students, and frequently faculty, in the community.

There are a variety of ways that institutions have partnered with their communities: cooperative extension; continuing education programs; clinical and pre–professional programs; top–down administrative initiatives; administrative–academic units with outreach missions; faculty professional service; economic and political outreach; community access to facilities and cultural activities; student volunteers; service–learning classes and activities; and action research activities for students (Kotval, 2003; Harkavy and Romer, 1999; Palm and Toma, 1997). These partnerships not only take students, faculty, and administrators into the community but also bring community members onto campuses, thus enabling collaboration and cooperation on a variety of levels.

Clearly there are benefits to both the members of the institution and the community when they are actively engaged in cooperative efforts with one another. Institutions profit by giving students the opportunity to learn first hand from real–world experiences and to develop their professional skills (Mullins, 2002). Students in this manner realize the opportunity to gain practical applications from the curriculum. In fact, in a follow–up study of urban planning, practicum students who collaborated or partnered with community organizations rated their practicum as "the most useful course in the curriculum" (Kotval, 2003, p. 306). These students gained transferable skills for use upon graduation and benefited from association with community organizations.

Faculty who join forces with the community keep themselves informed of the most current trends in their fields and learn about the issues and challenges that organizations are facing. Research opportunities for faculty members provide an increased presence for the institution within the community. Moreover, as Mullins (2002) noted when discussing applied research in the urban environment, "making the community the classroom makes the research come alive and enhances the teaching and student learning experiences" (p. 167).

The community benefits by being able to access university resources (Kotoval, 2003) and faculty expertise. The community also gains free help from the students who team up with its organization. With regard

to partnering students with organizations, Mullins (2002) calls this practice a "lowered cost of doing business" for organizations since they do not have to buy the service that the students provide. He also indicates that the creativity and energy that students bring to an organization benefit it as well (Mullins, 2002). Particularly for smaller businesses and nonprofit organizations (a majority of what we see in rural communities), access to this wealth of experience and expertise is an opportunity to be competitive and remain competent in a rapidly evolving organizational climate.

Placing students in the community to work on problem–solving projects does present challenges from both an institutional and organizational perspective. Several of the author's students have experienced having their senior capstone projects being halted midstream—for a variety of reasons (primarily financial and staffing) which are out of their control. This inconvenience leads to the need to reorganize and determine what learning can occur based on experiences gained to date or to redirect and develop a new learning strategy. Organizationally, using students who are not affiliated with the organization requires a steep learning curve in order for the students to be effective in that organization's environment.

For the author's students—who are in a cohort model—projects last from nine months to a year; so, there is typically no difficulty with continuity for the organization once a project has begun. However, for most courses or programs, a one semester or one quarter commitment creates challenges. According to Mullins (2002):

> By the time the student understands the process and is beginning to be effective, they [sic] are lost to graduation, end of a semester, or other pursuits. This results in a loss of continuity and a lower level of service delivery. (p. 174)

Additionally, the rhythms of the organizational and institutional cycles may not match, creating problems of access for the organization and an inability to create a wholeness of experience for the participating student. While there are many ways in which students can cooperate with the community, the senior capstone project provides one such opportunity in a very structured way.

The Senior Capstone

The term "capstone" has been defined as "the crowning course or experience coming at the end of a sequence of courses with the specific objective of *integrating* a body of relatively fragmented knowledge into a unified whole" (Durel, 1993, p. 223). Some capstone experiences assist students in integrating prior knowledge gained within the academic program (Baker, 1997), while others assist students in integrating knowledge gained across disciplines within the degree program (Chew and McInnis–Bowers, 1996).

Capstone experiences serve a variety of academic purposes, such as integration, breadth, application, synthesis, and transition (Cuseo, 1998; Levine, 1998; Olsen, Weber, and Trimble, 2002; Steele, 1993). Heinemann (1997) states that it is an opportunity for students to "pull together all the ideas presented in different courses and construct some sort of integrated, meaningful whole" (p. 3). The capstone experience can serve as a means through which students can connect academic coursework to their work experience (Chew and McInnis, 1996; Cuseo, 1998; Gardner, 1998; Heinemann, 1997; Smith, 1998). In fact, some institutions use the capstone to engage students in an experiential learning opportunity (Collier, 2000; Cuseo, 1998; Gardner, 1998; Smith, 1998). Thus, capstone experiences can provide students with the opportunity to apply the knowledge gained throughout their academic career to their work with local community organizations; capstone experiences also assist students in problem solving and in moving their organizations forward to the next level.

Students in the author's degree program in Organizational Leadership (OL) are required to complete a senior capstone project. During this experience, they solve an actual organizational problem on which they have been working for nine months to a year. The majority of the students in this bachelor's program are working adults who use either an existing problem that they face in their current organization or a community–based problem that we assist in locating for them. It is through both the students' organizations and the community–based projects that they have been able to engage in significant activities and achieve noteworthy goals within the community.

Since the author uses a cohort model and teaches all six of the OL

courses in this multi–disciplinary program, she can thus implement throughout the two years of the students' degree program the knowledge, skills, and abilities they need to execute the capstone project. Students gain a knowledge of the theory and practice of leadership as well as skills and an understanding of contemporary issues that they will face in the world of work. The most critical components that they learn for the capstone project are the skills required for solving organizational problems. Armed with these leadership and organizational problem–solving skills, students assist community organizations or businesses in solving one or more issues. These organizational problems are seldom simple and usually have multiple layers of issues to resolve.

Far greater than any knowledge of case studies, knowledge acquired through capstone projects provides students with the real issues involved in implementing significant programmatic changes within an organization. Students contribute to the organization (and thus to the community) by serving as consultants and providing an invaluable service. The organizations contribute to the students by providing opportunities for them to use their newly acquired skills that have been learned throughout their academic program.

Multiple Levels Of Connections With Community

Critical to finding opportunities for students to work in partnership with the community is the maintaining of connections with the community through involvement in and with a variety of organizations. The program is beginning to attract more students (primarily the more traditionally–aged students) who are at such a level within their organizations that effecting change (a requirement for the capstone) is difficult. So, the author's connections with or involvement in various organizations within the community have resulted in opportunities for her students to provide consulting services that might not have otherwise been available to organizations. Moreover, similar connections that the dean, associate deans, and staff in Corporate and Community Services (the business and industry center) maintain within the community have assisted in finding projects for the students as well.

The students are also required to do public presentations of the

projects—to which the entire Chamber of Commerce membership, university and community educators, and key community leaders are invited—through which we have netted even more opportunities for projects. Although not many community members attend the presentations, those who do come are engaged, interested in, and excited about what the students are able to accomplish. In fact, several individuals have suggested future project opportunities for our students.

Students engaged in these projects serve as experts and consultants in organizational problem–solving as well as provide expertise in research. Additionally, they are able to contribute to the community. Most notable among the 20+ projects in which the students have been engaged is one group who served as consultants to the Mercer County Emergency Management Agency. The group worked on the county's mitigation plan and saved the agency over $10,000 in consultant fees for the service they provided. Another group which implemented a solution to the federally mandated National Medical Support Notice required for state child support enforcement agencies received a state "best practices" award for their project—and their solution is being shared at the state–wide level. Finally, one student whose organization was receiving significant fines by state inspectors has had such success with his solution that his organization is implementing his solution nationwide at all 186 of their sites. These examples represent just a few of the typical projects in which students have assisted local communities. Not only are the students able to connect with and impact the local community, they are also having an impact at the state and national level as well.

Faculty, staff, and administrators within the author's institution remain very active in the following types of organizations which provide a wealth of opportunities for connections and ideas for senior capstone projects:

- Chamber of Commerce
- Service Organizations such as Rotary, Kiwanis, and Lions
- Local Schools
- Local City and County Governmental Agencies
- Local Economic Development Organizations
- A variety of local boards of trustees

Conclusion

Senior capstone experiences are an important way to assist students in integrating knowledge across and within disciplines. Such experiences also provide a transition to the world of work as they graduate from colleges and universities. Students are able to pull together all the knowledge they have previously gained and see how that applies to organizational reality. Today's challenging business environment requires that leadership graduates understand and acquire the skills, knowledge, and abilities necessary to engage in organizational problem–solving and lead organizations through significant change.

Most importantly, as one among several levels of connection with community, the capstone project partners students with a variety of businesses, organizations, and agencies within our communities. This connection with communities shows the communities not only the strength of the graduates of our programs but also provides invaluable services to community organizations.

According to Charles Hathaway (Al–Kodmany, 1999), "The university must not stand apart from its society and its immediate environment, but must be an integral part of that society. The university best serves itself and society by assuming an active leadership role, as opposed to its traditional stance of somewhat passive responsiveness" (p. 39). Having just sat through another end–of–year round of capstone project presentations, the author revels in knowing the significant ways that the Organizational Leadership students are influencing local businesses and organizations. In an important way, students are becoming integral parts of local organizations and serving as leaders who can effect change within our communities.

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Biography

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Security Considerations For Wireless LAN Deployment In A University Environment

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The popularity of IEEE (Institute of Electrical and Electronics Engineers) 802.11–based technologies for WLAN (Wireless Local Area Network) and considerations for lowering the cost of commercial wireless access points have prompted many universities to support WLAN at their campuses. Typically, it allows students, faculties, and staff to access a university's computer network and the Internet from one or more hot spots within a campus by using mobile computing devices such as laptop computers and Personal Digital Assistants (PDAs). The key drivers for WLAN deployment are convenience, increased productivity, return on investment, and user perception and demand. Although wireless access to a university's network offers flexibility and convenience to its users, it introduces additional security challenges compared to wired networks. The main risks are unauthorized access to the network, unauthorized access to data in transit, and data integrity over the airwaves.

Figure 1 (See next page.) shows typical deployment architecture for a WLAN. It consists of one or more access points. Each access point is connected to a wired local area network and interfaces with the end–users' mobile computing devices by using a radio interface. Most commercial access points usually support one or more of the following standards for the radio interface: IEEE 802.11a, IEEE 802.11b and IEEE 802.11g.

This paper discusses security limitations of current IEEE wireless local area network technologies mentioned above and presents a security strategy for WLAN deployment in a university environment based on a trial conducted at the Ohio University Southern Campus.

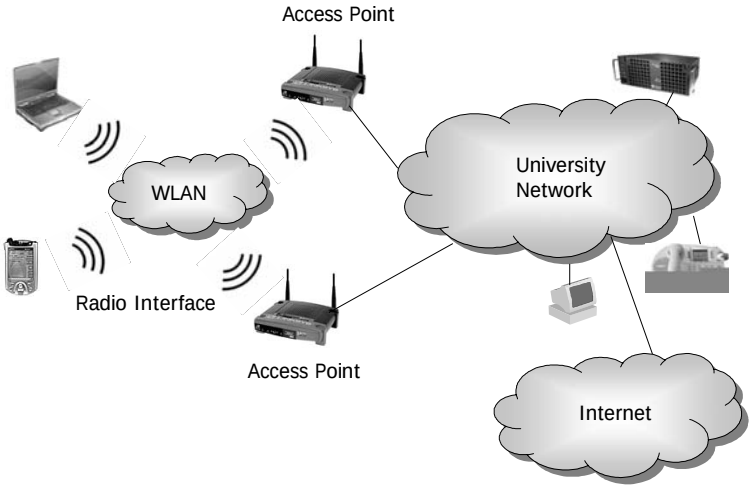

Figure 1: Typical wireless LAN architecture

Security Limitations Of IEEE 802.11–Based WLAN

The IEEE 802.11–based standards support a security protocol called WEP (Wired Equivalent Privacy). The WEP protocol is supposed to provide a level of security similar to that offered in wired networks. It relies primarily on encryption of packets transmitted between an end–user device and an access point. It uses the RC4 stream cipher algorithm, a secret key (K) shared between access point and the end user's mobile device, and a 24–bit initialization vector (V). For encrypting a message, the sender first concatenates the payload and CRC (Cyclic Redundancy Check) bits to get the plain text (P). Then WEP chooses an initialization vector and generates a key stream using the RC4 algorithm, the secret key, and the initialization vector. Finally, it performs an Exclusive OR (XOR) between the plain text and the generated key stream to obtain the cipher text (C) as shown by $C = P \oplus RC4 (V, K)$.

After encrypting a message, the sender transmits the initialization vector and cipher text to the receiver. On receipt of the message, the receiver regenerates the key stream using the received initialization vector and performs an XOR between the cipher text and the regenerated key stream to obtain the original plain text as shown by $P = C \oplus RC4 (V, K)$.

A group of researchers from University of California, Berkeley were first to find security flaws in the WEP protocol mentioned above (Borisov 180). As the length of the initialization vector is limited to 24 bits, access points need to reuse initialization vector values; the reuse interval for a busy access point could be on the order of minutes. This reuse of initialization vector and shared secret key cause security problems. For example, if $C_1 = P_1 \oplus RC4\ (V,K)$ and $C_2 = P_2 \oplus RC4\ (V,K)$, then $C_1 \oplus C_2 = (P_1 \oplus RC4\ (V,K)) \oplus (P_2 \oplus RC4\ (V,K)) = P_1 \oplus P_2$. In other words, if an intruder has access to two cipher texts that used the same key stream and one of the plain texts, he or she can decipher the other plain text. Even if the intruder does not have access to one of the plain texts, it may still be possible to decode both P1 and P2 in a real world situation. So, the bottom line is that the security of any transmission between end user devices and wireless access points using WEP can be compromised (Zahur 44).

Security Considerations For A University WLAN Environment

Our WLAN trial at Ohio University—Southern is based on the premise that until wireless networking products support security enhancements being proposed by the IEEE 802.11i and the Wi–Fi Alliance, we should treat WLAN as another un–trusted network (such as the Internet) and rely on end–to–end security supported by applications. Unfortunately, when one goes for a higher level of security, it causes reduced network functionality. So, our approach is first to identify how we are going to use the WLAN in our environment and then to come up with a strategy for mitigating the security risks associated with the planned usage.

In a university environment, users typically use the wireless network to access the Internet and applications such as e–mail, university Web sites, file transfers, network storage, e–learning platforms, library resources, and other administrative and laboratory systems. These applications may be grouped into three categories:

1. Applications that support end–to–end security;
2. Applications that do not support adequate end–to–end security but

are sensitive to security breaches;
3. Applications that do not support adequate end–to–end security and are not sensitive to security breaches.

As the applications belonging to category 1 take care of the end–to–end security themselves and security is not important for category 3 applications, no additional security measure beyond user authentication and access control is necessary for those applications. The security concerns for category 2 applications are addressed by using a VPN (Virtual Private Network) (Northcutt 2003).

Network Architecture For The Trial

Figure 2 shows the network architecture for the WLAN trial at Ohio University—Southern. Linksys (www.linksys.com) access points and MoreMagic (www.moremagic.com) MRouter wireless gateway were used for the trial.

As shown in the **Figure 2**, each access point has a dedicated or VLAN (Virtual Local Area Network) connectivity to a WLAN gateway

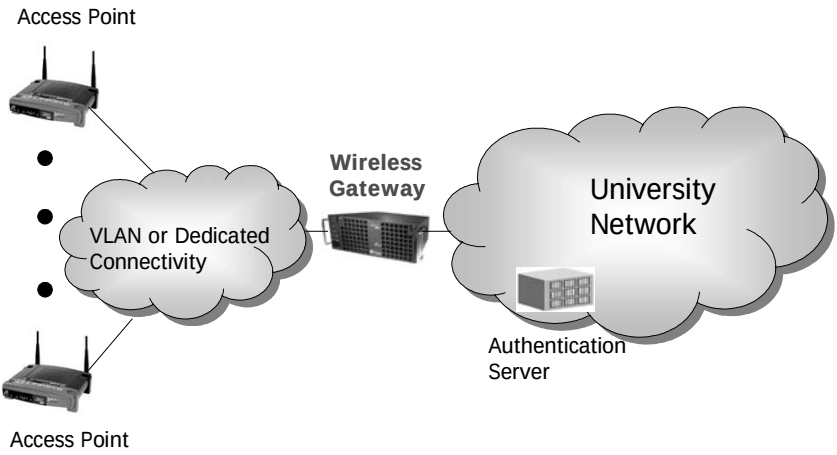

Figure 2: Network Architecture for WLAN Trial

and all traffic from WLAN entering campus network passes through that gateway. For authenticating users, the gateway interfaces with the

existing authentication server at the OU—Southern using Kerberos protocol. It also provides DHCP (Dynamic Host Control Protocol) service to the mobile hosts. This architecture allows centralized authentication and access control, monitoring, and flexible traffic filtering in either direction. For example, the gateway allows VPN traffic into the campus network without user authentication whereas it requires user authentication for allowing all other traffic.

Figure 3 shows sample call flow for a Web access scenario. The user enters the URL for ohio.edu on a Web browser window on his or her

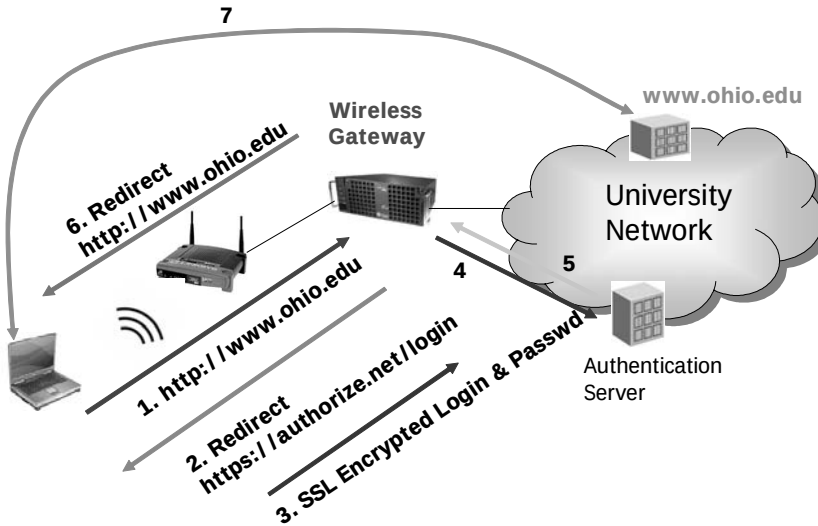

Figure 3: High Level Call Flow for Web Access

laptop to visit that Web site. The browser sends the HTTP request over the radio interface to the access point. The access point forwards the HTTP request via the wireless gateway. While performing message filtering, the gateway finds that the user has not been authenticated; so, it intercepts the message, pushes the login screen to the user's laptop, and collects the SSL encrypted user–id and password from the user. Then it sends the received user–id and password to a centralized authentication server. Once the user is authenticated, the gateway sends a HTTP redirect message to the user's browser. This action causes the

user's Web browser to send another HTTP request to www.ohio.edu. This time the wireless gateway allows this message into the university network since the user has already been authenticated.

Summary And Conclusion

The IEEE 802.11 based wireless technologies currently use the WEP protocol that has several security flaws (Borisov 180, Zahur 44). Until the vendor community supports the security enhancements being worked out by standards bodies in their products, we should treat a WLAN as an un–trusted network and rely on end–to–end application level security. Using a gateway between the WLAN and a wired network makes it easier for network administrators to implement the desired security policy and to take actions when security is compromised. The security policy for a WLAN should be based on the applications that the users access using the wireless network.

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Biography

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I'm My Own Guest: The First Person Teaching Technique

Paul B. Weinstein
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Any cook knows that however delicious the dish, a great part of food appeal is in the presentation. In this consumer–conscious age, we professors deal in coursework as cuisine. We've jazzed up our syllabi and enhanced courses with websites, *WebCT*, and other Internet activities. Our classes offer more visual aids, our boards are smart, our power is pointed. To shift to another analogy, we are, thankfully, not our fathers' Oldsmobiles–they've gone out of production. We're state of the art.

Yet even with all the gadgetry at our command, we still can fall into routine. Students know what we do, and so they relax in their comfort zone, shifting into cruise control.

Shaken, Not Stirred

That means it's time to shake them up a little. The entertainment industry discourses, diverts, convinces, and sells. We educators decry the shallowness of reality show culture, wince as our protégés blithely billboard corporate brands, and labor mightily to guide students into deeper water, ever aware of the competition for the attention and energy of our shared audience.

We need to enter the environment where our students live and learn. We can appropriate some of the techniques of the mesmerizing model of the entertainment world for our own purposes. "Good teaching," writes Gail Godwin, "is one–fourth preparation and three–fourths theater." So, bring a guest into the classroom—yourself. Don a costume, assume an identity, and engage your audience in a way that captivates and entrances it.

You've seen similar presentations at historic sites, tours, and reenactments. You've been enthralled and educated. This first–person technique, presenting material from the perspective of someone else,

thrusts you into that most fertile and elusive area of the consciousness, the imagination, and makes your class an experience that your students will long remember.

The First Person Character: Preparation

The initial step is to choose a character appropriate to the subject matter and one you are comfortable inhabiting. In my own case, I can pick an actual historical figure or invent a character. I prefer the latter because I then focus on exactly the issues I wish to illustrate and discuss. What works for your classroom and discipline? A psychology course is a stage for a visit from Freud or Jung or perhaps one of their patients. A literature class might welcome an author, character, or critic. A business class might host an innovator—or perhaps a scoundrel. There are possibilities for instructors in every discipline, shaped by their priorities and purpose.

You probably already have much of the information you need to get started on the outline for your guest visitor. With an eye on what you want to accomplish, you'll find it simple to construct a presentation. The examples in the next section can serve as inspirations or models for your own efforts.

You'll need to assemble an appropriate costume. Depending upon the role you've selected, the materials may be quite easy to obtain. The regalia need not be elaborate or extraordinary, but effort should be made to acquire appropriate gear. Period and international costumes are fairly easy to obtain in this Internet age. Theatrical outfitters, re–enactor supplies, and myriad clothing and accessory sources are readily accessible. You may be able to find an individual with experience in theater on your campus or in the community who would be happy to advise you if you need help. As a bonus, you wind up with a great Halloween costume.

I prefer not to forewarn the class that I am going to engage in one of these presentations. I set up the room in advance, sometimes enlisting the cooperation of the instructor preceding me if the turnover time is short. Staging is minimal, although sometimes I want a prop or two at hand. It's fun and effective to enter the room, dimming the lights in rooms where such control is available, and

surprise the audience. When I enter, the intensity of interest is palpable.

Ah, but what to do? The following descriptions of two of my own efforts provide examples.

First Person In Action: Antebellum Plantation Gentry

The Course: United States History to 1877, a typical survey course.

The Character: Thomas Lothar Culpepper, a Mississippian of 1850, representative of the planter class.

The Costume: White jacket and shirt, a flowery vest, white trousers, boots, a broad–brimmed hat, a cane (he's over 50 and the northern climate is aggravating his gout).

The Setup: I have placed a candle and a Bible in the room before going to my office and donning my costume. Culpepper enters the room calling to his manservants to care for the horses. He comments (usually complains) about the weather, then introduces himself and explains that he has been traveling through the North on business. At a stop in a nearby tavern for midday meal, he encountered the professor (me). It appears that the learned gentleman, realizing he would be detained—a dalliance with the comely barmaid, perhaps?—asked if the good Captain would enlighten the class with his observations about the Southland and the current political situation. In this fashion I establish the setting and the identity of the guest, explain why "I" am not here, and lay out the purpose of the visit.

The Presentation: Culpepper provides a brief biography. The second son of a well–to–do South Carolina planter, he attended the Citadel and then migrated west with supplies and a few slaves, gifts from his father. He and his chattel hack out a plantation from the wilderness just as Mississippi is applying for statehood. Now he owns over a thousand acres of good bottomland worked by almost a hundred slaves and is an officer in the militia. In this troubled year of 1850, he's pleased to have the opportunity to address this class prior to his return home.

Having introduced himself, Culpepper begins to warm to his subject. He feels that in the wake of the recently brokered Compromise of 1850, a clear explanation of the Peculiar Institution will foster understanding by counteracting the abolitionist propaganda that has regretfully fanned

tensions between the sections. He picks up the Bible, remarking of his pleasure that he can find the Holy Scripture here in a northern university classroom. Turning to Genesis 9:20–27, he reads passages that were often used to prove that the submission of the "Sons of Ham" was clearly the will of God. He defends the institution of slavery for its civilizing and Christian effects and explains how it benefits everyone economically, including the slaves. He occasionally refers to a newspaper he is carrying which he says is a recent DeBow's, a popular Southern periodical of the day. It's actually a prop in which I have stapled relevant quotes from proslavery pundits such as George Fitzhugh and the recently deceased John Calhoun.

Prior to departure Culpepper invites questions. By then the students have generally caught the spirit and are ready to engage in inquiry and debate. Importantly, they address the character, not me, and stay in the time frame. When someone asks an inappropriate question, for example something about events that took place after 1850, I simply find some way to remind the questioner that we are in 1850. Often other students, having caught the spirit of the presentation, help. I remind the questioners of the proper behaviors for gentlemen and women, professing shock or even anger if my expansive boundaries of propriety are breached—as they almost always are. When the students have no more points to raise, I take my leave, telling the class that their professor will return in ten minutes. They can take a break while I change into my regular clothes in my office.

Outcomes: The students are moved past a rote condemnation of the long–dead practice of slavery to confronting it as an accepted and energetically defended reality. Culpepper refers to his slaves in dehumanizing terms such as "bucks" and "wenches," thus making students confront the dehumanizing aspects of the system. The biography of the character reminds students that at the time of the Civil War, the trans–Appalachian states had been frontier within living memory, and much of the work in converting wilderness to farm and plantation had been performed by those unsung pioneers, the slaves. Students also gain greater insight to Antebellum Southern culture and the strength of sectionalism. Additionally, some comments woven into the presentation stimulate consideration of gender relationships between slaves and their owners and other members of the master class.

First Person In Action: Eighth Century Muslim Warrior

The Course: Humanities in the Western Tradition—part one covers the beginnings of civilization to the Italian Renaissance.

The Character: A Muslim warrior of 721 C.E.

The Costume: A turban and veil (common among desert–bred fighters); robe (I purchased mine in Marrakech); sandals or boots depending on the weather; sword; knife; prayer beads; other appropriate accouterments.

The Setup: In observance of the centennial of the hegira, the flight of the prophet Muhammad from Mecca to Medina, the Muslim forces have sent this warrior to explain the faith of Islam to the gathering of Franks (the class). In the customary exchange of hostages, the scholar Paulus de Wayne (that's I) has been sent to the warrior's camp.

The Presentation: Upon entry, the warrior introduces himself, explains the terms of the truce, lays down his sword, and offers the traditional greeting of "salaam alaikum" (peace be unto you). He briefly recounts the history of Islam, emphasizing how the Prophet has delivered the final and true word of God. He notes the errors of the Christian faith, reading a passage from the holy Koran admonishing those who conceive of the One God as a multiplicity, the Trinity. He then explains the five pillars of Islam, the kind of information that is the core of any basic lecture on Islam but is so much more effectively delivered in this fashion.

Questions are solicited before the warrior prepares to depart. Students are addressed as though they are Frankish nobles, by titles such as Sir, King, Lord, or Lady. Women might be admonished to be respectful. Before departing, he observes that the Franks have fought well, but they must understand that the tide of Islam is inexorable, that the armies of Allah will triumph, and that it would be best to surrender to the irresistible armies presently arrayed before them. He hopes that the Franks will submit peacefully but warns that the alternative will be the field of battle. He concludes that the great scholar Paulus will return from the Muslim encampment in ten minutes, giving me time to shed the gear and return as myself.

Outcomes: A dramatic rendering of the origin, history, and beliefs of Islam, conveying the energy of that great century–long surge when

vast areas, large populations, and ancient cultures fell to Muslim armies. The warrior, of course, could not know that defeats in the Battle of Covdonga and, a little more than a decade later, in the Battle of Tours would mark the end of the expansion of Islam into Western Europe.

Hints For Effectiveness

As much fun as this is for instructor and students, you have a mission; focusing on a few basic rules will help you achieve it:

- Do your research. Try to use appropriate language. Do not use modern slang. If appropriate, be formal. My Muslim character uses the proper "thou" rather than the familiar "you" when addressing the class or individual.
- Stay in character. Ignore the gasps or giggles or even cheers that may greet your entrance. Concentrate on your character and your purpose. Don't stray—stay on task.
- Return as yourself. The character has left the building. This creates distance since the views expressed by the character might not—often should not—be your own.
- Discuss the appearance, always referring to the character in third person. Student reactions are usually lively. Make sure that the discussion revolves around the visitor, not you.

Aftermath And Results

I'm nervous every time, but I persist because the benefits are so great. My instructional palette is enlarged. The students' interest in the subject is stimulated—jolted, really. Material in such memorable fashion might actually stay with the students after the final. And most assuredly I've taught the students another valuable lesson: don't get too complacent; you never know what the professor might do next.

Students laud this event on instructor evaluations and often request I do more characters, but I want this to remain the rare treat, far from the norm. Future teachers among them consider how they might do something similar in their own classrooms. Some students have returned, sometimes after a few years, to view the presentation again.

I urge and encourage you to try the first person teaching technique.

It's fun and it's challenging—to appear in costume before the students is a little risky but you'll find it well worth the effort. "Who dares to teach," as John Cotton Dana writes, "must never cease to learn." The benefits are great, spurring you to do an improved version the next time.

William Arthur Ward offers us this maxim: "The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires." Here is a way to attain those rare heights. Climb: your students will enjoy the view.

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Biography

Paul B. Weinstein is professor of history at the University of Akron—Wayne, where he has taught in various guises and disguises since 1992. He has published on history, teaching, film, and is a previous contributor to the *AURCO Journal*. This article grows out of his successful presentation at the 2004 Annual Meeting at Ohio University—Southern. He may be contacted for ideas and questions at pbweins@uakron.edu.

Preparing The Students For Learning During Lectures

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Abstract

Most classes in two–year colleges include students with a wide range of academic abilities and skills. The important question for professors teaching those classes is how to promote inclusive learning of all students. A number of teaching approaches have been developed to improve learning during the lecture. One of those approaches is to improve the preparedness of all the students before the lecture. In Fall 2003, I tried this approach in my chemistry class. At least one day before every class, I assigned pre–lecture exercises based on material to be discussed in the next lecture. To be able to complete these exercises, students were asked to first read the appropriate assigned material in the textbook. Most of the students in my class expressed the achievement of the following: increased motivation in reading the textbook, satisfaction from pre–lecture exercises, and increased understanding of the material covered during the lecture.

Introduction

Teaching in the open–access college is challenging but essential if we are to make education accessible to all the students. The most challenging is teaching diverse students with a wide range of academic preparation, abilities, and skills. There are different reasons for students' lack of preparation for college. For example, for some students, previous learning provided an incomplete or incorrect grasp of concepts. For other students, concepts have been forgotten because they have not been used for a long time.

Therefore, it is challenging to teach those students on the level expected in the college course. That challenge is exacerbated by the fact that most of the students retain only a small percentage of the material

covered in lecture (Dinan, F.J.; Frydrychowski 1995), no matter what the level of students' preparedness before the lecture. Johnstone and Sue (1994) point out that during a lecture approximately 5,000 words are delivered, but only 500 words are recorded by the students. The authors conclude that "at best, lectures are overviews or outlines of what has to be learnt rather than learning experiences in themselves." In addition, another particular study has shown that attendance at lectures does not improve final performance (Birk, J.P; Foster J. 1993).

In order to make the students' classroom experiences more meaningful, a number of new teaching methods have been developed. Some of them propose better use of presentation techniques (McNelis 1998) while others recommend using collaborative–learning methods (Glaser and Poole 1999; Birk and Kurtz 1996), in–class feedback (Olmsted 1999), and active–learning methods (Kovac 1999). Which teaching method is being used in the classroom is indeed an important issue since it has been shown that students learn depending how they are being taught (Phelps and Lee 2003).

The choice, thus, of teaching method used in the classroom should take into account the reasons why some students do not learn from the lectures (Phelps and Lee 2003). In most cases students are unable to cope with the large volume of new information. They may not understand some of the new terminology or they might not be able to grasp main points of the lecture. Preparing students for the lecture, so that they begin to understand new terminology and ideas before coming to the lecture, may improve learning during the lecture more effectively than concentrating solely on the teaching methods. It can be especially important in open–access colleges in which students have different levels of preparedness.

Indeed, it is important to ensure that all students have the same preparation for lectures so that they can understand terms and background concepts correctly. If professors want to teach at the right level for the course, help to the unprepared students has to be offered before, not after the class. In 1968, D. Ausubel made the following comment:

> "If I had to reduce all of educational psychology to just one principle, I would say this: the most important single factor

> influencing learning is what the learner already knows. Ascertain this and teach him accordingly."

Educators have already shown the effectiveness of pre–lecture preparation on learning during lectures. Sirhan and Reid (2001) have successfully used a pre–lecture session to prepare less qualified students for the general chemistry course. Students took a short multiple–choice test on background knowledge, performed self–evaluation, and then worked in groups in which better–prepared students taught less–prepared ones. As stated by the author, "the use of these sessions resulted in improved student performance in examination."

It has been shown that students are more active and more successful at understanding the material during the lecture if they learn material on their own (Schearer 1988). In addition, if the students complete assignments using the textbook before the lecture and are given a structured format to begin learning before the lecture, the lecture can be used to enhance comprehension of the material rather then transfer information (Collard, Girardot, and Deutsch 2002). Moreover, if the students do not fully understand material from the pre–lecture reading, they will not be able to do pre–lecture exercises correctly and will be motivated to pay more attention during the lecture. As Collar, Girardot, and Deutsch conclude (2002) "the pre–lecture assignments clearly provided encouragement to read the book, which was recognized as a useful learning resource." In view of these assertions, I tried a pre–lecture assignment approach using the textbook as a source of information in my organic chemistry class.

The Pre–Lecture Exercises In The Organic Chemistry Course

To be able to improve the preparedness of all the organic chemistry students before the lecture, I designed pre–lecture exercises in fall quarter, 2003. Specifically, the pre–lecture exercises were designed to determine whether students were reading the textbook before the lecture, to determine what students were getting out of the assigned reading, to help them concentrate while they were reading, to improve their preparation for lecture, and to increase their understanding of the

material and improve their performance.

The pre–lecture exercises were assigned to my organic chemistry students at least one day before the scheduled class lectures throughout the winter quarter, 2003. Most of the questions on the pre–lecture exercises were critical–thinking questions which incorporated the material to be discussed. With each pre–lecture exercise, students were given specific reading assignments from the textbook. To be able to complete the pre–lecture exercises, the students needed to complete the assigned reading, think about the content of read material, answer questions using new concepts and terminology, and turn in those exercises for grading before the lecture. In turn, the students received answers to those questions during the lecture.

Evaluation Of Pre–Lecture Exercises

In order to find out whether the goals set for pre–lecture exercises were met, the students were asked to complete the post–course survey. The students rated the importance of pre–lecture exercises on the scale from 1 to 5 (where 1 = least important and 5 = most important for learning); 16 students out of 17 total students rated pre–lecture exercises as very important (rating 5). Only one student chose the rating 4.

In addition, the post–course survey showed that most of the students were indeed reading the textbook before each lecture. All students agreed that: 1) they have learned much from pre–lecture exercises; 2) they have an increased understanding of the material covered during the lecture; 3) they were motivated to read the textbook; 4) they had an opportunity to think about the material that was covered during lecture; 5) they have gotten more practice and review; 6) they would like to do pre–lecture exercises again.

When asked whether they found the pre–lecture exercises worth their time, some students commented as follows: “Yes, they prepared me for lecture and help me understand the material”; “Pre–Lectures are the best!”; “Prompted me to read ahead of time”; “It makes us read before class—otherwise we probably wouldn’t”; “Yes, it is worth continuing because it motivates me to read before the lecture”; “Invaluable”; “Well–worth”; “These are the most important.” In addition, students expressed the opinion that pre–lecture exercises did

not need any changes and that they were good in improving the effectiveness of learning during the lecture.

Conclusions

The pre–lecture exercises assigned on the material to be discussed in the next lecture allowed my organic chemistry students not only to improve their learning during the lecture but also to increase motivation in reading the textbook. The students expressed satisfaction with pre–lecture exercises because those assignments helped them to increase understanding of the material covered during the lecture. Since the pre–lecture exercises have been well received by all the students and this method was the simplest way to bring students with different preparedness to the same level before the lecture, pre–lecture exercises are worth continuing in future chemistry classes. I agree with previous chemists (Collard, Girardot, and Deutsch 2002) that this method "can be incorporated into the course without taking away precious lecture time. The method makes it possible to devote less lecture time to information transfer and more to higher–order learning."

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Faculty Research Tools: Internet–Based Surveys

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Abstract

Internet–based surveys are providing faculty researchers with a new set of computer–based tools to conduct research studies. Falling into two categories, Internet–based surveys include direct Internet surveys (available on Web sites) or e–mail surveys (sent to individual participants with a personalized invitation to take part in a given research study). In terms of theoretical and practical applications, the definition and differentiation between these two types of Internet–based surveys will be provided, along with the advantages and the disadvantages of each approach. Specific considerations and challenges regarding sampling bias, hardware and software variations, survey questionnaire guidelines, response rate and survey abandonment, time and cost parameters, and privacy concerns (related to the dissemination of personal information online) will also be discussed. Faculty researchers interested in the design, development, and execution of Internet–based surveys will receive a fundamental grounding in this innovative research study technique.

Introduction

Mention the desire to conduct a research survey among university faculty members today, and someone will immediately ask whether or not it will be conducted online. In most cases, executing research surveys via the Internet will simplify a number of the logistical steps undertaken by the faculty researcher. It must also be stressed, however, that using the Internet to conduct research surveys presents an entirely new set of considerations and challenges that must be addressed by faculty researchers prior to undertaking this type of work.

Internet–Based Surveys: Considerations And Challenges Facing Faculty Researchers

If Internet–based surveys are to be considered as a potential research tool for gathering the data needed to solve a definitive research problem, it is the responsibility of faculty researchers to become familiar with a broad cross–section of current literature regarding the best practices in Internet–based research theory and practice. A comprehensive overview in conducting an Internet–based survey, along with the current thinking on how to manage the Internet–based survey process, is provided by Simek and Veiga (2001, pp. 218–235). Seven general considerations and challenges are commonly mentioned. First, there is a decisive choice to be made between direct Internet and e–mail surveys for the research study. Second, there are several issues regarding sampling bias that apply to all research surveys that are conducted over the Internet. Third, there are significant concerns posed by hardware and software variations across the selected population. Fourth, there are Internet–based questionnaire guidelines that must be understood before survey questionnaires are developed. Fifth, there are specific response rate and survey abandonment issues in using Internet–based surveys. Sixth, there are time and cost parameters that may differ significantly between Internet–based and traditional research study techniques. Seventh, there are ethical questions related to privacy concerns and the dissemination of personal information online. Several of these considerations and challenges are unique to Internet–based surveys, while others are also of concern when utilizing other types of traditional research study techniques.

Considerations And Challenges: Direct Internet Versus E–Mail Surveys

It is important to define and to differentiate between direct Internet surveys (that are accessible directly from the Internet) and e–mail surveys (that are individually sent to pre–selected recipients). Direct Internet surveys are customarily open to anyone who encounters the research survey Web site and chooses to complete the questionnaire. Generalized advertising is used to direct a targeted audience to the Web site.

Personalized, individual invitations attract specific identified populations, but unlike e–mail surveys, the actual questionnaire is not sent along with the e–mail invitation. In terms of personalization, the use of "listservs", "bcc's", and other mass–mailing techniques over the Internet should be avoided in favor of personalized invitations that are sent to the potential survey participants' private e–mail addresses whenever possible (Simek and Veiga, 2001, pp. 220–222).

Direct Internet surveys are used to draw in a broad cross–section of survey participants on comparatively general issues, whereas e–mail surveys are used to study the opinions of well–characterized subpopulations of survey participants. On research topics that may be highly personal in nature or that survey participants may wish to discuss only under conditions of anonymity, a "generic" direct Internet survey made available through a Web site may offer an extra measure of privacy. Even if the survey questionnaires are exactly the same, e–mail surveys tend to give the survey participants the feeling of more personalized attention—much like the comparison of a one–on–one interview to a traditional mail survey. Due to this personal relationship between faculty researchers and the survey participants, e–mail survey participants may be reluctant to provide information of a highly personal nature. In other cases, the apparent greater familiarity with an e–mail survey may make survey participants willing to divulge more personal information than those survey participants involved in direct Internet surveys. Depending on the topic under study, faculty researchers need to carefully investigate both techniques before choosing the one that is most appropriate for collecting the desired information.

Internet access and e–mail access are not synonymous terms. The vast majority of individuals who access e–mail also access the Internet. There is evidence in the literature to suggest that the opposite situation is not true: that many individuals who frequently access the Internet do not have personal e–mail accounts. These individuals access the Internet from public terminals. They may also be using the Internet connection at an employer's office where they have a business–only e–mail address and where personal correspondence is discouraged and/or forbidden. Fortunately, in terms of Internet use, the proliferation of free e–mail accounts that may be easily checked from any Internet connection has dramatically increased the number of individuals who are able to

correspond electronically via a private e–mail account, regardless of the physical location of Internet access. This trend is likely to continue and will ultimately improve the accessibility of the general population to faculty researchers.

Considerations and Challenges: Sampling Bias

Looking more broadly, faculty researchers must remain cognizant that the penetration of Internet and e–mail services into the U.S. population has only relatively recently begun to surpass that of telephones during the 1930s (Dillman, 2000, p 355). There are numerous difficulties involved when a desired research study population is not uniformly reachable using a particular research study methodology or approach. As an example, Dillman cites the infamous *Literary Digest* telephone survey conducted in 1936 that predicted that Alf Landon would beat Franklin D. Roosevelt for the U.S. presidency. At the time, telephone survey pollsters sampled selected households based on the telephone numbers listed in telephone directories. In 1936, telephones were considered a luxury—favored predominantly by the richer segments of society—those population segments that also happened to be more likely to vote Republican. The outcome of the survey was biased since the sampled population was not representative of the overall U.S. population. In terms of Internet–based surveys, an error as blatant as that of the Roosevelt/Landon election may seem remote, but failing to develop an understanding of the penetration of U.S. Internet usage can still lead to erroneous results.

According to Couper (2000), coverage of the desired population and the associated sampling errors are the biggest threat to the integrity of an Internet–based survey (p. 467). Couper notes that even the sources of published information claiming to understand and document Web usage among any or all of the population segments may be fraught with blatant errors, depending on why and how the data were collected. Of greatest concern to Couper are the Internet–based surveys that are self–selecting (research surveys listed on a Web site that invite random browsers to take a few minutes to reply) yet claim to offer scientifically–valid assessments of Internet usage or other similar computer usage statistics. In self–selecting surveys, individuals sign on at will, and they

are able to return later to the Web site to complete the Internet–based survey multiple times. Couper observed that direct Internet surveys often constitute a poor design that can lead to grossly biased results (p. 479). Therefore, faculty researchers must rely on a broad spectrum of recently published information, from known reliable sources, in order to improve their knowledge of the true reach of the Internet and e–mail services available to the research study population(s).

Sampling bias is likely to be the most severe issue faced by faculty researchers in designing and executing Internet–based surveys. While sampling bias may not occur in every instance, that faculty researchers must carefully evaluate the desired population to determine whether or not either form of Internet–based survey has a high probability of reaching the intended survey participants. If it is possible to confirm, for example, that the desired population is known to be experienced computer users, the probability of pre–selected e–mail survey recipients receiving and reading the survey questionnaire will increase dramatically. In contrast, confirming that the desired population rarely uses computers at all and/or does not have personal access to e–mail services would indicate that Internet–based surveys should be ruled out for that particular population. Failure to do so would result in an abnormally low response rate or, in the extreme, a zero response rate. The faculty researcher would face the reality that an entirely different research technique would need to be employed to conduct the original research study at additional cost and additional faculty researcher time and effort.

Considerations And Challenges: Hardware And Software Variations

Even among those individuals with access to the Internet, little uniformity exists in how that access is achieved. According to Dillman (2000), Internet and e–mail users are not quickly migrating to a single and universal set of hardware, software, and connectivity standards (pp. 357–358). Such standards would make it simpler for faculty researchers to design survey questionnaires and data–capture regimens that would work in exactly the same manner on all computer systems. The current state of the art is that questionnaire designs are often forced to fit the lowest common denominator of hardware and software configurations

in order to ensure the highest accessibility for survey participants and the highest possible response rate for faculty researchers. As an important safeguard that also serves to build response rates, Internet–based survey participants should always be given an "out" if they encounter difficulties while trying to complete the Internet–based survey. In many cases, it is sufficient to provide a physical address where Internet–based survey participants can mail a hard copy of the survey if they encounter problems and then elect to print and fill out the Internet–based survey questionnaire by hand (Simek and Veiga, 2001, p. 222). The faculty researcher will receive the data by mail and then have to enter it by hand into the database.

Considerations and Challenges: Questionnaire Guidelines

Dillman (2000) indicates that the design of survey questionnaires for Internet and/or e–mail use requires some additional considerations not normally of concern in the use of other research techniques, especially in the case of traditional mail surveys (pp. 358–373). One of the simplest, yet most overlooked issues in the use of Internet–based surveys is the process of navigating through and responding to a series of survey questions presented on a computer screen, as opposed to filling out a traditional mail survey questionnaire on a sheet of paper. Dillman states that some survey participants working on the computer become frustrated when they attempt to click on any underlined text and find that it is not connected to an active hyperlink (p. 359). Conversely, other survey participants will "forget momentarily that they are operating a computer" and they will continue to read right past the hyperlinks and other branching instructions, or they may even forget to hit "Reply" to an e–mail survey before trying to fill in their responses (p. 359). While these situations can be prevented by more attention to the up–front directions provided to the survey participants about completing the survey questionnaire, failure to do so can cause potential survey participants to quickly become survey nonparticipants from the frustrations that they encounter in filling out an electronic survey.

According to Webb (2000), improper survey questionnaire design can completely invalidate the results of a research survey, regardless of the detailed care and thoughtful consideration given to all of the

other aspects of the survey project. Webb likens the process of survey questionnaire design to the process of building a kitchen table. Each of the table's legs represents a given aspect of survey questionnaire design. If any leg is overemphasized or underemphasized relative to the others, the entire table will be unstable (p. 198).

A careful examination of the specific survey questionnaire recommendations made by Webb shows several of them to be very similar to those practices and procedures commonly observed in the use of traditional mail questionnaires. Webb cautions, for example, that all of the survey questions must be "necessary and sufficient" to generate the data of interest (p. 201). Removing unnecessary questions can lead to a shorter survey questionnaire and improve the response rate percentages, particularly in the use of Internet–based surveys. Assuring clarity of the questions, so that meaningful conclusions and actionable recommendations are generated from the data, is a much harder task. Webb writes that survey participant comprehension of each question (while taking the survey) is critical and that the use of complex wording and/or multiple–part questions may confuse survey participants (pp. 201–202). Finally, Webb maintains that Internet–based survey questionnaires should not be as long as those sent through the traditional mail survey channels (p. 201). The recommendation of a shorter survey length is attributable to the lower attention span of survey participants when connected to the Internet.

Since well–constructed Internet–based survey questionnaires should lead to reliable data sets, research in the literature is focusing more attention on the potential sources of bias introduced by improper Internet–based survey questionnaire design. Gosling, Vazire, Srivastava, and John (2004) investigated the validity of several preconceptions about Internet–based survey questionnaires. The authors' findings established that a proper Internet–based survey questionnaire design would, in the majority of cases, lead to results that were straightforward to characterize in terms of the sampled population and that the results would be appropriate for generalization beyond the original population studied (p. 95). More work in this critical area must be undertaken as the interest in and the use of Internet–based surveys continues to increase, but initial results are encouraging for faculty researchers who would like to consider

Considerations and Challenges: Response Rate and Survey Abandonment

Ray and Tabor (2003) evaluated the premise that Internet–based surveys generate a lower response rate than traditional mail surveys covering the same topic. Their findings indicate that, in the absence of any individual incentives specifically tied to Internet–based surveys, the response rates for Internet–based surveys often lag behind the response rates of traditional mail surveys. Confirming the lower cost advantages described by Shough and Yates (2002), Ray and Tabor note that Internet–based survey practitioners are more likely to offer individual incentives to complete the survey than are other researchers using traditional mail surveys. While this practice may tend to bring the cost per Internet–based survey up, opportunities to participate in contests, drawings, and other similar offerings are only provided to survey respondents after the completion and return of an Internet–based survey questionnaire. This practice serves to keep Internet–based survey costs within reason when compared to traditional mail survey costs (p. 35). Individual incentives, if offered, do not need to be given to survey participants up front. Survey participants filling out online questionnaires are equally happy with the prospect of something to be gained or won after returning the survey as they are with receiving some type of individual incentive that directly accompanies the initial delivery of the online survey invitation (to a direct Internet survey) or questionnaire (to an e–mail survey) (Ray and Tabor, 2003, p. 36). This level of flexibility in preference among Internet–based survey respondents allows faculty researchers to design one or more individual incentives into the Internet–based survey invitation or questionnaire in whatever way seems most logical for a given research study.

Norman, Friedman, Norman and Stevenson (2001) studied the logistics of how survey participants proceed through survey questionnaires, regardless of whether the survey questionnaire is provided via an Internet–based survey or in a traditional mail survey. Delivering survey questionnaires via an Internet gives faculty researchers the ability to incorporate a more complex branching of the survey questions since the branches can be programmed to guide survey participants automatically. The authors caution, however, that Internet–based

questionnaires should be designed as simply as possible even when complex branching routines are used (pp. 39–40). The rationale is that survey participants tend to think of questions according to topic groupings, and they will provide better responses when they are not distracted by having to move around unnecessarily on the Internet–based survey (p. 40). The best Internet–based survey questionnaires involve lengthier formats that can be easily navigated through the use of scrolling functions, provided that the survey questions on similar topics are grouped together (p. 45). The use of sequential pages that must be accessed separately by survey participants is not recommended since they may find it difficult to navigate back and forth (for example, if they wish to review a previously completed portion of the survey). As a final thought, the authors recommend not including any form of indexing that allows survey participants to click and to immediately transfer to another portion of the Internet–based survey questionnaire. Although the concept of providing a guide or index to the Internet–based questionnaire may seem like a good idea, some survey participants may become confused and inadvertently skip portions of the survey (p. 45). Thus, faculty researchers are encouraged to make the Internet–based survey as simple and smooth flowing from start to finish as possible in order to eliminate the need for guides and/or indexing and to minimize difficulties for survey participants who may not be very familiar with computer manipulations.

Couper, Traugott, and Lamias (2001) investigated a number of parameters that can affect the response rate of Internet–based surveys under a variety of conditions. The survey participants who worked in good faith to complete an Internet–based survey but then abandoned it part way through for any one of a number of reasons were of particular concern to them (pp. 231–232). Although specific changes observed in the survey results in this situation were difficult to quantify reliably, there was a positive correlation between the rate of survey abandonment and the complexity of the Internet–based survey questionnaires, particularly when the survey designers placed too much detailed information on the computer screen where the survey participants needed to scroll back and forth to read and to understand each question. Faculty researchers should be advised to keep individual questions brief and to avoid using computer screens that are too cluttered, either with

words or with graphics. Survey participants may be unable or unwilling to decipher complicated questions on Internet–based surveys. They may simply abandon the Internet–based survey without explanation. In addition, follow–up is every bit as important to the success of Internet–based surveys as it is for other research study techniques. Personalized e–mail messages alerting Internet–based survey participants to an upcoming research project, appropriate contact information to assist survey participants if they run into difficulty, and an electronic "thank you" note (perhaps with a small gratuity such as an electronic coupon) can help to generate the best possible response rate to Internet–based surveys (Simek and Veiga, 2001, pp. 225–227).

Considerations and Challenges: Time and Cost Parameters

Ray and Tabor (2003) examined the time lapse between placing an Internet–based survey and generating the final results. The actual elapsed times varied greatly because of survey content and format. In general, however, Internet–based surveys have faster start–to–finish timetables when compared to traditional mail surveys (pp. 34–35). One possible explanation involves the e–mail reminders that can be electronically sent to Internet–based survey participants, especially when the e–mail reminder includes a link to the Web site or a fresh copy of the e–mail survey questionnaire. E–mail reminders appear to be much more efficient and effective in getting people to respond than do hard–copy traditional mail survey reminders that force the survey participants to search for a misplaced paper survey questionnaire.

As Internet–based surveys continue to become more popular and as the technology of delivering professional–quality survey instruments over the Internet matures, additional research that compares the time and the cost advantages of the Internet–based surveys to other research techniques is likely to be conducted and published in the literature. Presently, the research available in the literature is inconclusive of the best format to use in delivering an Internet–based survey and whether it should be available via a link to a Web site or arrive as an e–mail message or attachment. When Internet–based surveys become the research study delivery venues of choice, it is likely that response rates, overall time to conduct the survey, and cost issues will play a key role in the decision by faculty researchers to use or not to use for a specific research study.

Shough and Yates (2002) maintain that the often–claimed cost benefit of conducting Internet–based surveys does exist. Their research (covering a multi–year period to understand the emerging trends in the accounting curricula) is representative of the Internet–based surveys versus traditional mail surveys comparisons found in the literature. Although Shough and Yates conducted a relatively small study of 1,500 survey participants, they contacted each survey participant several times over a multi–year period. Contacting each survey respondent by mail was projected to cost, on the average, $1.00 once the database of names and addresses had been created. Contacting the same survey participants via e–mail was virtually cost free.

An additional time and cost benefit in Internet–based surveys is the advantage of automatic tabulation. With traditional mail surveys, faculty researchers need to hand–code the responses or design a survey questionnaire in such a manner that it can be fed through an automated scanning process and then hand–checked for errors and omissions. For Internet–based survey questionnaires, electronic tabulation of the results is easily conducted and saves time and money for faculty researchers.

Considerations and Challenges: Privacy Issues

Faculty researchers, whether using Internet–based surveys or other research techniques, must be aware of survey participants' concerns regarding the collection, analysis, storage, and dissemination of personal data (Sheehan, 2002, Sheehan and Hoy, 2000). Legislators (federal, state, and local) are acting in response to issues raised by growing percentages of their constituents, and they are delving more deeply into the issue of survey participant privacy. They are examining the issue of whether or not faculty researchers must inform the public of the "Who? What? When? Where? How?" and "Why?" aspects of collected personal information that could be utilized in either an appropriate or inappropriate manner after the conclusion of a research survey. In an effort to bring uniformity to regulations concerning the collection of personal information, the government has started to create and enforce standards called Fair Information Practices (FIPs) on a global scale (Milne and Culnan, 2002). Generally, FIPs are created and utilized based on a strict adherence to a set of principles that are designed to safeguard survey participants from unscrupulous data collection and handling practices.

Unfortunately, although most legislative bodies agree on what should constitute FIPs, there is little consensus regarding the enforcement policies and procedures of implementing such regulations, especially about the consequences when the rules are not followed (Milne and Culnan, 2002). As a result, organizations that collect personal information, either electronically or by any other means, are left unobserved to interpret what is reasonable to do in balancing the need for personal information from survey participants and the desire of survey participants to maintain control over data that they consider to be private and/or potentially damaging to themselves (p. 352). Milne and Culnan state that the prevalent trend across U.S. organizations is to err on the side of making full and complete disclosures of the purpose for personal information data collection, rather than to limit intrusions on privacy if the personal information may not truly be necessary to collect (pp. 353–354). The intent behind this approach is to collect as much useful personal information from survey participants as is needed to ensure accuracy and reliability. Explanatory statements in Internet–based surveys are used to put survey participants' minds at ease regarding their privacy concerns and issues. As the topic of privacy in managing personal information data collection continues to receive legislative attention, it is likely that commonly–accepted Internet–based survey policies and procedures regarding the privacy of personal information will continue to evolve.

Faculty researchers conducting Internet–based surveys fall under the same legislative guidelines as businesses or other nonprofit or governmental organizations that directly solicit data via a Web site in exchange for providing various kinds of products, services, or helpful Web site user information. Research by Milne and Culnan (2002) suggests that the best practice for faculty researchers is to post personal information privacy notices voluntarily and to do so in such a manner that it makes such notices straightforward and easy to comprehend for the prospective survey participants of Internet–based surveys (p. 355). Since some Internet–based surveys and/or Web sites are transient by nature; however, this practice can lead to inconsistencies in the ways that personal information privacy notices are handled over a comparatively short period of time. Given this reality, Milne and Culnan's recommendation is that industry and/or government agencies must continuously monitor a broad cross–section of Web sites that display Internet–based surveys for ongoing compliance with current legislation polices and procedures.

Setting Up Internet–Based Surveys: Software, Pre–Testing And Roll–Out

Once the decision has been made to conduct a research study using an Internet–based survey and the research study design (including the survey questionnaire) has been completed, faculty researchers must handle a variety of logistical details. First, computer software tools must be selected to carry out the research project in the most efficient and effective manner possible. Next, the Internet–based survey questionnaire must be pretested to identify sources of potential error that could negatively affect the reliability and the validity of the final results. Finally, the Internet–based survey questionnaire must be properly delivered to the desired research study sample or population. All three steps are of critical importance to faculty researchers. They can mean the difference between an Internet–based survey that runs smoothly from start to finish and an Internet–based survey that fails miserably to meet faculty researcher expectations in terms of ease of execution.

Choosing The Appropriate Internet–Based Survey Software

There are many automated survey software packages that are available for use in delivering Internet–based surveys and analyzing the returned data. Two survey software packages (*SumQuest* and *StatPac,* each known to work well, allow faculty researchers to create a survey questionnaire in the proper format, set the survey questionnaire up as an Internet–based survey (as a direct Internet survey on a Web site or as an e–mail survey to send electronically to the pre–selected sample or population), and finally, automatically record the survey questionnaire responses as they are returned. Regardless of the selected software package, faculty researchers conducting Internet–based surveys should strongly consider beginning with a mock–up of the desired Internet–based survey questionnaire that is first produced on paper—much as faculty researchers would do in conducting a traditional mail survey. Taking this initial step allows faculty researchers to examine the Internet–based survey questionnaire in a format that may be more familiar to them and to note and/or to repair any flaws in terms of

question wording, response categories, question branching, etc. prior to moving forward to an actual electronic Internet–based survey. *SumQuest* and *StatPac* also have user–friendly statistics and graphics modules that allow faculty researchers who are new to the field of Internet–based surveys to analyze the data, draw meaningful conclusions along with actionable results, and then report the findings in a formal report.

Pre–Testing The Internet–Based Survey Questionnaire

Once the Internet–based survey questionnaire has been successfully designed, it should be formally pretested on a small–scale basis before being rolled out to a larger research study sample and/or population. In many cases, asking 10–20 individuals to sign onto the appropriate Web site and fill out the survey or sending the survey by e–mail to the same number of individuals will provide ample data to test the reliability and the validity of the Internet–based survey and also to smooth the setup pathway of any automated calculations that are coded into the software for data analysis.

Rolling Out The Internet–Based Survey In Final Form

When the pretesting of the Internet–based survey questionnaire is finished, faculty researchers may then apply the Internet–based survey to the desired sample and/or population. If the Internet–based survey is a direct Internet survey (located on a Web site), faculty researchers should construct a brief e–mail message that explains the purpose of the research study. This e–mail message should be targeted to all of the members of the selected sample and/or population. A "clickable" link to the Internet–based survey questionnaire should be provided on the Web site. If the Internet–based survey is an e–mail survey, a copy of the Internet–based survey questionnaire should be included in the e–mail either within the body of the e–mail message or as an attachment. Clear and easy–to–follow instructions will need to be provided for the survey participants on how to fill out and return the Internet–based survey questionnaire so that the automated data collection feature of the

survey software package can correctly read the data.

When working with a large sample or population size, faculty researchers may find it easiest to use an automated e–mail program. An automated e–mail program can send out invitations to participate in the Internet–based survey, reminder announcements, or copies of the actual Internet–based survey questionnaires. Microsoft *Outlook*, in combination with a list of survey participants' names and e–mail addresses in either *Excel* or *Access*, can be used with quantifiable success. For a more professional appearance, a true database contact management software package (such as *GoldMine 6.0*) will provide better results and it will actually also be easier for faculty researchers to use and to manipulate.

As the data begin to roll in, faculty researchers need to be comfortable in pulling off the interim survey reports from the automated survey software package, performing both the basic and the advanced statistics, and "slicing" the data to aid in the data analysis and interpretation pieces of the research study via the various filter and cross–tabulation commands available. Faculty researchers must also formulate their own hypotheses regarding what is driving the collected responses and check the validity of their hypotheses by examining specialized breakouts from the collected aggregate data.

A Note On Generalizing From Internet–Based Survey Results

Reips (2002) discusses the importance of being able to place Internet–based survey results (whether generated by direct Internet surveys or by e–mail surveys) into proper perspective versus conventional survey results from other studies. Reips defines generalizability as being able to move from survey results generated using an Internet–based survey (that may have at least a partially self–selecting set of survey respondents) to a set of conclusions applicable to the larger population as a whole (p. 247). Faculty researchers concerned with the more subtle issues of moving between research techniques or in drawing relatively broad–based or generalized conclusions from Internet–based surveys are encouraged to consult Reips' extensive body of research work, along with the references contained therein, before proceeding.

Conclusions

Internet–based surveys, whether delivered via a Web site (as a direct Internet survey) or via e–mail (as an e–mail survey), are applicable to a broad range of research interests. As long as the desired survey population has access to and uses computers on a regular basis, carefully designed and executed Internet–based surveys can offer increased quantity (in numbers of survey respondents) and increased quality (by generating meaningful conclusions and actionable recommendations) in a timely manner for faculty researchers. As the information technology in hardware and software applications continues to mature over the next few years, the ability of faculty researchers to field technically–advanced, yet user–friendly Internet–based surveys will increase. Research published in the literature on Internet–based surveys will also continue to monitor advancing Internet–based technologies in an effort to further refine the use of online surveys. Through innovative and unique applications in a variety of academic disciplines, faculty researchers are also likely to contribute to the next quantum leap forward in streamlining research study processes involving the use of Internet–based surveys.

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Biography

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Student Essay

The "New Woman" In The Inter–War Period In Europe*

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Abstract

This article concerns the changes that took place in the lives of women in Europe during the interwar period of 1918 to 1939. Some things changed, such as more access to legal abortions. However, it is the contention of this essay that many conditions reverted to the way they were before World War I.

The Great War And The Emancipation Of Women

Did the "New Woman" created by the advent of World War I really exist in Europe during the interwar period of 1918 and 1939? In the words of Peter Abelard, a philosopher and theologian of the Middle Ages, "Sic et Non," meaning "yes and no." In order to demonstrate the answer to this question, we must take a look at the state of affairs in Europe after the Great War and also look at some of the policies employed toward women by the most powerful governments at that time.

"The idea that the Great War had done more to redefine relations between the sexes and emancipate women that years or even centuries of previous struggle had accomplished was widespread during and immediately after the conflict" (Thebaud 21). Women were needed by both sides of the conflict to fill positions in munitions and textile factories and to perform agricultural labor on farms while the men were away fighting in the trenches. In addition, thousands of women joined the Red Cross to work as nurses in the military hospitals. Other avenues which opened up to women were those in teaching, restaurants, and hotels, as well as the opportunity to pursue education in fields which had hitherto been closed to women, for example engineering (Thebaud

40). Employment outside the home, or beyond the narrow confines of doing domestic work for others, engendered new feelings of independence and capability in these women and also allowed them more financial freedom. A change in fashion was a by–product of these new circumstances. Skirts became shorter, hair was bobbed, corsets were discarded in favor of suspender belts, and slender figures were in vogue (McMillan 163). The postwar Roaring 20s ushered in an age of raucous living with the Charleston dance and the "flapper" center stage. In 1922, Victor Margueritte published a bestselling novel, *La Garconne (The Bachelor Girl),* which described the life of the new single woman in scandalous terms: "Margueritte's heroine hoped to achieve financial independence by pursuing a career, and she carried sexual freedom to the point of experimenting with bisexuality before settling down in a stable, egalitarian relationship with a male 'companion'" (Sohn 94). He described her as thinking and acting like a man and being fiercely independent (Sohn 94). This book was wildly popular in France and sold over a million copies before being exported to Britain, where it was quietly confiscated by the British government (Sohn 94). Margueritte was later "stripped of his Legion of Honour and a film based on the novel was banned by the censor on the grounds that it was a deplorable defamation of the character of the young French girl" (McMillan 166).

Bachelor Girls

The Bachelor Girl, however, was not necessarily representative of the average woman in Europe at that time. The double standard for sexual behavior was still alive and well, and young ladies were expected to comport themselves in a modest manner. In 1926, the Catholic Church issued a letter setting down examples of dress expected of its female parishioners (McMillan 164). They were exhorted to wear high–necked dresses, long sleeves, and below–the–knees hemlines to church functions. Outside the church, they were to wear clothing that did not cling provocatively to the body and was not low–cut. They were also exhorted to wear gloves to dances and proper bathing attire when swimming (McMillan 164). Another bone of contention was the furor over women bobbing their hair, which was also denounced from the pulpit of the Catholic Churches as being unfeminine and too racy (McMillan 163).

The French were also very conservative in their views on women and athletics. They believed that running was bad for women; however, tennis and swimming were good (McMillan 171). Bicycling was acceptable in moderation, but driving a car was considered to be out of their range (McMillan 171).

The role of French and other European women was still primarily a domestic one, with finding a husband by making herself attractive and cultivating agreeable manners and talents the main objective. The upper–class British, as well as French, regarded women in the chivalrous light of "decorative flowers" (Sohn 95). Motherhood was regarded as a sacred duty, and in Spain the woman was termed an '"angel del hogar' (angel of the home) whose biological and social destiny was motherhood" (Ginsborg 430).

Equality And Declining Birthrates

In general, a number of governments in Europe began to be alarmed by the low birth rate and decreasing population in their countries. Even in the Soviet Union, which had promoted equality between the sexes, abortion, and the communal rearing of children in order to "free women from the stinking kitchen" and cause the family unit to "wither away" as a means of creating a new world order of total equality and loyalty to the State (Ginsborg 414), ideas began to change. This change in policy became known as the "Great Retreat." Stalin decided to personally take a hand in turning things around by appearing in the Kremlin with his family and promoting the "campaign for a strong family" (Thurston 5). In France, birth control was prohibited in 1919 under the newly created Ministry of Health. Moreover, the neo–Malthusians who promoted family planning to prevent overpopulation were punished with imprisonment and fines (McMillan 189). French women who refused to have children were regarded as no more than prostitutes (McMillan 189). In Italy, Mussolini called for "more births" (De Grazia 132). By and large, however, European governments were unsuccessful in increasing the rate of population growth of their respective countries (Mazower 86). Women were not motivated to produce children as a "duty to the state" or to bolster the vast war machines that were building in Europe at that time (Mazower 86). In addition, it was becoming

increasingly expensive to support a family, and in economies such as the Weimar Republic in Germany, where the brutal financial reparations from World War I had devalued the monetary system to the point of collapse, large families were difficult to maintain. Another reason for the decline in the birth rate in Europe after World War I was the decimation of the male population during this long and bloody conflict which left a dearth of men to become husbands and fathers. Those men who did survive the War were, many times, scarred physically and psychologically and were often incapable of filling these roles. Women who had men who returned from "the Front" often had to become the caretakers of these wounded men. They were often afflicted by the aftereffects of shell–shock, mustard gas, missing limbs, and many turned to alcoholism as a way of dealing with their problems.

Women Breadwinners

In these circumstances, it was also often necessary for the wife or daughter to become the breadwinner of the family, albeit either could not readily obtain the sort of lucrative employment open to women during the War years. The irony of the situation was that women needed the extra wages even more than they did during the war. Contrary to the opinion expressed in 1918 by Mary MacArthur, an English trade unionist, men had not changed the way they looked at women (Thebaud 68). The men who fought in World War I wanted to return to an unchanged world and reassert themselves. They also needed employment. In Britain, due to high unemployment, "200,000 female blue–collar workers had to accept employment as domestics for lack of jobs in industry" (Sohn 99). Women in Britain and France who lived in mining and steel areas took in boarders, did laundry, and ran taverns (Sohn 98). In France, many middle–class women continued to work in the textile factories and in agricultural production after marriage, even though this fact was not popularly touted. In fact, the number of women working in factories in France increased from 1,000,000 in 1906 to 1,470,000 in 1926 (Sohn 97). The social view for both of these countries was that it was a hardship for a woman to have to work outside the home after marriage (Sohn 99) thereby, supporting the thesis that things had both changed and remained the same for women after World War I. The need to work

had perhaps increased, but the desire to do so on a permanent basis had declined. In the Soviet Union, too, there was contradiction and dissension over the dual role for women. Although the Russian Revolution proclaimed the egalitarian stance for sharing all work and responsibilities between men and women right from the beginning in 1917, in actuality studies done by Soviet social scientists show that women continued to do most of the household chores while working outside the home as well:

> In the Soviet context, the extensive full–time employment of women as well as men creates a strong presumption in favor of an equal sharing of domestic responsibilities . . . The persistence of an unequal division of labor under new conditions is therefore a potential source of tension and conflict. (Lapidus 283)

The husbands also expressed discontent with the situation:

> A woman earns almost as much a man. She considers herself independent and equal. The man's prestige in the family has been thoroughly shaken and is determined only by his prestige on the job. The woman has already stopped thinking of how to surprise her husband with a tasty dinner, and more often she surprises him by cooking nothing at all. (Lapidus 284)

These two statements demonstrate a number of problems common to both Soviet and Western societies. Despite the doctrinal policies, inequality existed in the family life, the labor force, and political life, all of which evoked resentment and frustration on the part of women in the Soviet Union (Lapidus 285).

In Italy, women were not encouraged to work outside the home since it was considered an impediment to reproduction, and the fascists also wanted to eliminate unemployment among Italian men (De Grazia 139). Furthermore, "the Church was paternalistically protective toward women and championed itself as the chief guardian of family values" (De Grazia 125). Abortion was treated as a crime against the state; there was a ban on birth control; sex education was censored, and a special

tax was levied against bachelors (De Grazia 133). However, in 1925 working–class Italian women went on "birth–strikes" to rebel against the regime's command to reproduce (De Grazia 146). Female university students also began to take an interest in Marxist and social Catholic ideologies (De Grazia 146).

Politically speaking, British women did not win full voting rights until 1928, and women in France did not receive the vote until 1938. Technically, the women of the Soviet Union had been franchised with the Revolution in 1917, but there was little to choose from in the elections. Legally, some progress was made in advancing the rights of women in Britain and France during the interwar period. In France, which was very restrictive in its treatment of married women, women were granted the right to join labor unions on their own accord in 1920, and in 1927 as widows they received the right to inherit property from their husbands (Sohn 114). At this time French women were also finally granted token rights to testify in court, sign contracts, open bank accounts, take degrees, and apply for passports without the consent of their husbands (Sohn 114). Prior to these rights, women in France had been treated in a very feudal fashion, and it is easy to see why they felt it necessary to try to gain independence by asserting themselves over cutting their hair and shortening their dresses. In Britain women were finally able to enter professions which had been closed to them and to automatically inherit property if their husband or child died intestate (Sohn 115). They also gained the legal right to equal division of property in case of adultery or divorce and the automatic guardianship of their children in case of separation from their husbands (Sohn 115).

Sic Et Non

Still, women in these countries during the interwar years played only a small role in the political arena, and, as today, did not receive equal pay for equal work with men. They made progress in gaining the right to control their own bodies and decide their own fate in terms of pregnancy, and they also gained the right to own and manage their own property. Although some women were still subservient to their husbands and others took on the persona of the bachelor girl, the majority of women fell somewhere in between. The war years emboldened many women

to attempt new things and seek financial independence; however, "the more things change, the more they stay the same." During World War I suffrage for women necessarily took a back seat to the war effort, and after the war men wanted to return to what was familiar to them. The men who did return from the war wanted to find feminine, cozy women waiting for them, not strident harpies demanding their rights. On the other hand, it was impossible for women to completely return to prewar social and familial restrictions after four years of heady self–reliance. Therefore, things changed and did not change at one and the same time. Women gained some legal and personal rights, sometimes at great cost in their relationships with men, but the social image of woman as sainted wife and mother was placed back on the pedestal for men to adore and feel that this was what they were willing to sacrifice themselves for. Thus, the forces of fascism in Europe bundled women back into the closet, while at one and the same time women were expected to take on the responsibilities of breadwinner when called on, and they would soon show their mettle as heroic members of the underground resistance against the forces of oppression during World War II: "Thus the period was one of contradictory tendencies, a complex time of transition that many contemporaries analyzed poorly" (Sohn 119). These contradictions are why the "New Woman" both existed and did not exist, "Sic et Non."

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Biography

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