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ABSTRACT

These proceedings contain papers presented at the Annual Conference on the Undergraduate Teaching of Psychology sponsored by the Psychology Department of the State University of New York, Farmingdale. Following an introduction and the conference program, the papers are: (1) "Developing an Undergraduate Course in Multimedia Applications in Psychology: Design and Outcome" (David Renjilian); (2) "Team Teaching across Disciplinary Fields: The Cluster Program at William Paterson University" (Katherine Makarec); (3) "Using Debriefing To Enhance Students' Service Projects" (Frederick E. Tesch, Stanley Bazam, and K. Gregory Jin); (4) "The Psychology Club as a Mechanism for Introducing Students to Research" (Jill M. Norvilitis); (5) "Teaching Developmental Psychology: Practical Application and Understanding of Major Developmental Theories" (Charles N. Jones); (6) "Distance Perception: A Comparison of In-Class and Distance-Learning Psychology of Perception Classes" (Greg C. Elvers and Donald J. Polzella); (7) "The Innovation of Tradition" (Ethan Gologor); and (8) "Integrating Technology in the Psychology Curriculum" (panel discussion--Patricia A. Oswald, Robin Flanagan, Kisok Kim, and Katherine Zaromatidis). (SLD)

TEACHING OF PSYCHOLOGY: IDEAS AND INNOVATIONS

PROCEEDINGS OF THE FOURTEENTH ANNUAL CONFERENCE

APRIL 5-7, 2000

GENE INDENBAUM AND JUDITH R. LEVINE, EDS.

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Introduction

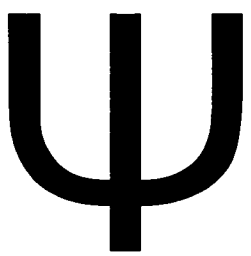
The Fourteenth Annual Conference on Undergraduate Teaching of Psychology: Ideas and Innovations was held April 5-7, 2000 at the Nevele Grande Hotel in Ellenville, New York. The conference was sponsored by the Psychology Department of the State University of New York at Farmingdale.

In addition to keynote addresses by Fathali Moghaddam, Paul Kaplan, and an invited address by Saul Kassin, the participants of the Fourteenth Annual Conference had 35 presentations from which to choose.

The success of this conference, as well as the previous 13 was due to the dedicated work of many people. The conference committee was chaired by Dr. Gene Indenbaum. The conference program chairperson was Dr. Judith Levine. The were joined on the committee by Dr. Marilyn Blumenthal and Ms. Barbara Sarringer. We would also like to extend our thanks to Worth Publishers for sponsoring Fathali Moghaddam, Wadsworth Publishing for Paul Kaplan, and Prentice Hall for Saul Kassin.

Gene Indenbaum
Judith R. Levine

CONFERENCE PROGRAM
the 14th annual conference on undergraduate



TEACHING of PSYCHOLOGY: IDEAS & INNOVATIONS

presented by

The Psychology Department of SUNY FARMINGDALE FARMINGDALE, NY

Wed, April 5th, Thurs, April 6th & Fri, April 7th, 2000

PROGRAM
Wednesday, April 5, 2000

Registration: 2:00-2:45 p.m.

Session 1 2:45 - 3:45

RM 1 Utilization of Physiological Monitoring and Biofeedback in Teaching Psychotherapeutic Interventions.
Samuel Gontkovsky, University of Oklahoma Health Sciences Center, OK & Bud Leveron, Nova Southeastern University

This presentation offers a model for utilizing biofeedback instrumentation to demonstrate various cognitive-behavioral intervention techniques to students. In class, students were attached to biofeedback instrumentation in order to acquire an awareness of their own physiology and to demonstrate the efficacy of cognitive-behavioral techniques.

Getting Students to Participate: A Challenge for the Instructor in the College Classroom.
Marilyn Blumenthal* & Angela Danzi, SUNY Farmingdale, NY

In every college classroom there is a range of student involvement ranging from the non-participant to the frequent (sometimes too frequent) responder. Two approaches to elicit student involvement will be described and discussed. The first, used in Introductory Psychology classes, utilizes "non-assigned" chapters of the textbook, Internet research, and group interaction; the second, used in Sociology classes, utilizes oral presentations combined with group activity. Handouts and instruction for these techniques will be provided. Problems that have arisen in the authors' classes while using these approaches will also be discussed.

Note: The "*" indicates the session chairperson.

RM 2 **Workshop:** Using Literature to Teach Psychology, Using Psychology to Teach Literature.
Eva Ash, Empire State College, NY & Scott Ash, Nassau Community College, NY

This workshop will draw on the experiences of the co-presenters: a psychology professor who uses literature in psychology courses and a literature professor who uses psychological concepts in his courses. Increasingly we have found that students, although interested in advanced level psychology or literature courses, often do not have the skills or interest to read theoretical material. Novels and movies, however, are so familiar to students that they provide an opportunity to help students discuss difficult theoretical concepts and prepare to read such theory. The workshop will include video clips, a resource list for integrating literature and psychology, and discussion.

Session 2 4:00 - 5:00

RM 1 **Workshop:** Selling Active Learning to Students: Problems and Solutions.
Michael Spiegler, Providence College, RI

Although we, as teachers, may be convinced that active learning is the most effective way to learn psychology and the key to life-long learning, many of our students have not gotten the message. This workshop will explore the barriers students raise to learning actively and provide strategies for "hooking" students on active learning by using teaching strategies that foster active learning. Examples from a variety of courses will be used. Participants will be asked to share the challenges they face in selling active learning. Not surprisingly, the workshop is structured to foster participants' active learning.

Note: The "*" indicates the session chairperson.

RM 2 **Panel:** A student-centered, Inquiry-Based Psychology Course.
Tibor Palfai & Henry Jankiewicz, Syracuse University, NY

This presentation describes an upper-division psychology course, "Perspectives on Drug Experience," co-taught by an experimental psychologist and a writing instructor/rhetorician. The overarching project is to foster a complex understanding and critical sensibility in students by exposing them to a number of perspectives about drug experience, including our own scientific and rhetorical perspectives, and to assist students in analyzing problems, articulating position, and making and supporting responsible claims. The readings and discussion serve as a springboard for writing assignments that engage students in inquiries based on research, argument, and reflection, and opens channels for further dialogue and feedback.

RM 3 Facilitating Research and Publications in the Social Sciences at the Undergraduate Level.
Erin French, Worcester State College, MA
Pearl Mosher-Ashley, Worcester State College, MA
Andrew Futterman, College of the Holy Cross, MA

As increasing numbers of students compete to gain acceptance into quality graduate programs in the field of psychology, undergraduates with a strong research background who have articles published in the professional literature possess skills which set them apart from other graduate school applicants and increase their chances of being accepted. Drs. Pearl Mosher-Ashley and Andrew Futterman teach their ambitious undergraduate students about the research process through innovative advanced courses which prepare students to present and publish their studies, thereby making them valuable assets to the graduate programs of their choice.

Note: The "*" indicates the session chairperson.

Statistics and Experimental Design: Which one Should be Taught First?

Emmanuel Akillas* & Carole Wells, Kutztown University, PA

In most undergraduate programs, courses in statistics are usually prerequisites for courses in experimental design. However, the utility of statistics as a tool becomes meaningful when viewed within the context of designing a research study. It is suggested that the students' understanding and appreciation of statistics would be enhanced if the current practice is reversed and they are taught statistics after they learn about experimental design.

Note: The "*" indicates the session chairperson.

WEDNESDAY, APRIL 5, 2000

Reception: *6:00 - 7:00 p.m.*

Dinner: *7:00 p.m.*

Keynote Speaker: *Dr. Fathali Moghaddam*

"From Teaching Culture in Psychology
to Teaching the Culture of Psychology"

Keynote Speaker & Reception
Courtesy of Worth Publishers

After Dinner: *Hospitality Room*

Thursday, April 6, 2000

Breakfast: 7:30 - 9:00 a.m.

Session 3 9:00 - 10:30

RM 1 **Workshop:** Attracting Students to Psychology Classes: Lessons from the Pros.
Michael Spiegler, Providence College, RI

In searching for innovative ideas for attracting students to psychology courses, you are invited to step outside the ivory tower and actively participate in examining a familiar "real world" experience. Most of us have been highly motivated to take lessons from a "pro," such as a tennis pro or ski instructor, and enjoyed and benefited from them. This paper will examine 1) the nature of the pro teaching/learning situation, (2) the characteristics of pros as teachers, (3) the teaching strategies pros use with great success, and (4) ways in which these strategies can be adapted for psychology classes.

RM 2 Freudian Sips: Integrating Concepts From Psychology of Interpersonal Relationships with Concepts from Introduction to Hotel and Restaurant Management.
Pat Hutchinson & Nancy Donahue-Berthiaume, Quinsigamond Community College, MA

Looking for ways to seduce the non-psychology major into your psychology curriculum? 'Freudian Sips' may be the answer. We will show you how to integrate components of your psychology course into a required vocational course as an introduction and foundation into the discipline of psychology.

Note: The "*" indicates the session chairperson.

This presentation gives an overview of 6 interdisciplinary curriculum modules designed and implemented by a faculty team from the school of management and the school of psychology. You will leave the presentation with an outline of steps that were successfully implemented at our college in a working format ready for your implementation.

Developing an Undergraduate Course in Multimedia Applications in Psychology: Design & Outcome.
David Renjilian, Marywood University, PA

Psychology programs typically do not provide students with formal training in those computer programs (e.g., word processors, presentation software, HTML editors) they encounter during their academic and post-graduate careers. Because psychology students study topics such as sensation/perception and social psychology, they are excellent candidates for instruction in the effective use of such applications. With this in mind, a course was designed to combine the application human factors/multimedia research, with training in the production of brochures, newsletters, handout s, presentations, and web pages. Both student evaluations and outcome data have been extremely favorable, justifying the inclusion of the course in psychology curriculum.

Comparisons of Student and Faculty Perceptions of the Contribution of Effort and Performance in Course Grade.
Royce White*, Linda Dunlap, Andrea Pickup, & Allison Clough, Marist College, NY

In an extension of the study we presented at the 1999 conference, we surveyed 439 students and 95 faculty regarding how much one's performance versus one's effort should count toward the final course grade. Students again chose a median of 40% that should be due to effort, compared to 10% for faculty. If a student who "tries hard" fails to show mastery of the basic subject matter for the course, the median chosen by students was a passing grade ("C" if not in major, "D" in major). Faculty chose a median of "F", although 42% said passing if not in major and 28% if a major course.

Note: The "*" indicates the session chairperson.

RM 3 Outcomes Assessment of Undergraduate Psychology Programs.
Adma Jeha d'Heurle*, & Frances Mahoney, Mercy College, NY

The aim of our projected presentation is to initiate a discussion of the topic of Outcomes Assessment of undergraduate psychology programs in general. We recognize that the topic is of general interest as many faculties are struggling with the task of demonstrating the accountability that is being increasingly called for by state departments of education and regional education commissions, as well as parents and students alike. Our description of the assessment efforts at Mercy College is intended to stimulate a general discussion of this thorny issue and to invite specific reaction and possible recommendations for the improvement of our assessment program.

Team Teaching Across Disciplinary Fields: The Cluster Program at William Paterson University.
Katherine Makarec, William Paterson University, NJ

At William Paterson University freshman students can take something called cluster courses. The primary aim of the cluster program is to promote the building of intellectual bridges across academic disciplines. Students sign up for all three separate courses, and earn credit in each. The difference for cluster courses is that each course gives one credit hour to a joint plenary session. During the plenary all three faculty members are present and involved. Advantages of the cluster courses will be discussed.

Note: The "*" indicates the session chairperson.

Mentoring Psychology Instructors: Applying the Methods of Clinical Supervision to the Classroom.
Richard Linden & Darla Silverman, Sussex County Community College, NJ

The methods of clinical supervision used in the mental health field are helpful in mentoring college instructors. Developing a recognition and understanding of transference, countertransference, resistance, and defense mechanisms is of primary importance between therapist and client. The same issues take place within the college classroom between instructor and student. The methods employed in clinical supervision: process recordings, critical moments analysis, and videotaping, will be discussed and demonstrated. Emphasis will be placed on how to use these tools to manage the emotional tone of the class, to increase an instructor's moment-to-moment awareness, and to develop an ability to recognize choice points that occur within the classroom.

Session 4 10:15 - 11:15

PUBLISHERS' DISPLAYS & COFFEE

Session 5 11:30 - 1:00

RM 1 Using Debriefing to Enhance Students' Service Projects.
Frederick Tesch, Stanley Bazan and K. Gregory Jin, Ancell School of Business, Western Connecticut State University, CT

Service projects have been used in our undergraduate business administration program to provide students with experiential learning that enhances the usual cognitive and content learning outcomes. These projects are typically located

Note: The "*" indicates the session chairperson.

in courses have a strong psychological, behavioral, or social component (i.e., organizational behavior, human resource management, management information systems). We describe four students projects and report how carefully and explicitly debriefing the students about their project experiences provides them a wider context for understanding both the project and their experience as participants. Examining their projects within the larger social and cultural contexts encourages exploration of personal, social, and ethical learning as well.

The Psychology Club as a Mechanism for Introducing Students to Research.
Jill Norvilitis, SUNY College at Buffalo, NY

The present study attempted to encourage participation in research through a group project conducted under the auspices of the Psychology Club. Participating students reported positive feelings about research in general and the project upon which this study was based. Psychology Club research projects may serve as a non-threatening introduction to research for students who are unlikely to seek independently more individualized experiences.

Undergraduate Students as Researchers: Benefits and Challenges.
Barbara Gentile*, Simmons College, MA and Benjamin Miller, Salem State College, MA

Student participation in research is on the increase. Although this participation offers students many potential benefits, it also presents some interesting challenges to them and to faculty and institutions. We will discuss both the benefits that this experience can provide and some of the challenges involved in making the experience intellectually valuable.

Note: The "*" indicates the session chairperson.

RM 2 Teaching Multiculturalism and Respect for Diversity: A Process Approach.
Sandra Lewis, Montclair State University, NJ

Infusion of multicultural content has become an important area for curriculum development. This includes strategies that foster understanding of cultural differences and models that enhance students' knowledge and skills regardless of the particular ethnic or cultural group. This presentation describes Terry Cross' cultural competence continuum, a model that acknowledges multiculturalism and respect for diversity as an ongoing process. The model offers a means for characterizing various responses to difference and determining skills needed for continued growth. This presentation demonstrates use of the model in an Introduction to Community Psychology class unit on the core principles of this discipline, including respect for diversity.

Integrating Psychology, Technology, and Multiculturalism in a Group Project.
Margaret Anderson, SUNY Cortland, NY

This presentation describes a group project that could be adjusted for content and included in any psychology course. It includes a description of the administration of the project, assessment of the students, and goals and rationale of the project itself. The project addresses several components: (1) introduction to current topics within the domain, (2) providing an international perspective, (3) use of modern technology – e-mail, the Internet, and presentation software, (4) experience at developing and presenting group products – oral and written, and (5) exposure to the intricacies of peer evaluation.

Note: The "*" indicates the session chairperson.

A Cross Cultural Perspective For Teaching General and Social Psychology Classes.
Laura Sidorowicz*, Nassau Community College, NY

During the summer of 1999, I received a Fulbrigt-Hays Scholarship to Morocco and Senegal. I spent several weeks exploring the culture, customs, and people of these two African and Islamic countries. A discussion of how to utilize cross-cultural perspectives in Psychology classes will be given along with a slide presentation of Morocco and Senegal. An emphasis will be placed on individualism and collectivism as seen in the United States, Morocco, and Senegal.

RM 3 How to Use Teaching Strategies to Appeal to Each of the Four Jungian Functions.
Ellie Webber, Johnson State College, VT

According to Jungian type theory, there are two psychological functions that may be used to take in information, and each person prefers to use one of these two functions. Similarly, there are two psychological functions that may be used to make judgments; again, each person prefers one of these, and becomes more skilled in its use. One of the four functions is used most and with greatest skill; conversely, one of the four functions is used least and with least skill. People learn best when their preferred functions are engaged. The purpose of his presentation is to provide a basic introduction to this important area of learning differences.

Teaching Child Development.
Charles Jones, Baruch College - CUNY, NY

I will present a strategy for teaching an undergraduate child development course that incorporates using the various theories in real life situations. This is encouraged by having the students prepare a developmental profile of a child

Note: The "*" indicates the session chairperson.

based on their observations and recording the behavior of a child in a naturalistic setting. The focus of the assignment is to check the students' understanding and application of the studied theories.

Distance Perception: A Comparison of In-Class and Distance-Learning Psychology of Perception Classes.

Greg Elvers * &, Donald Polzella University of Dayton, OH

Fifty students were randomly assigned to take a perception class either in a traditional lecture or in a distance-learning format in which the students attended class only to take tests. The results failed to suggest that the students in the distance-learning condition performed differently in the course than the lecture students. There were differences in what the distance- learning and the lecture students found useful and what they disliked about the course. These findings could be used to help design better distance-learning courses.

THURSDAY, APRIL 6, 2000

***Lunch:* 1:00 - 3:00p.m.**

***Keynote speaker:* Dr. Paul Kaplan**

"The Cohort Effect and the Teaching of Psychology"

Keynote Speaker and Reception Courtesy of Wadsworth Publishing

Session 6: 3:15 - 4:15

RM 1 **Workshop:** Learning through Play: Hands-on Class Activities for Teaching about Therapy with Children.
Mindy Korol, Mount Saint Mary's College, MD &
Rhonda Korol, Lyndon State College, VT

This workshop demonstrates classroom activities for promoting the understanding of child therapy than can be used in Child Development, Abnormal Psychology, and Counseling/Psychotherapy courses. Participants will be divided into groups and rotated through a series of stations, which illustrate varied therapeutic strategies. Afterward, there will be a discussion of these interventions and the childhood problems and disorders for which they are most appropriate. Student evaluations of this activity will also be presented.

RM 2 **Workshop:** Putting Things into Perspective: Using Collages to Demonstrate Psychological Perspectives in Personality Theories.
Randall Osborne and Don Spurgeon, Indiana University East, IN

Students struggle to understand psychological perspectives beginning in the introductory course. These perspectives are important for students to comprehend due to the relationship between one's perspective and one's assumptions. Understanding these perspectives enhances students' abilities to recognize theoretical viewpoints and to understand the assumptions a given theorist makes about human behavior. To foster an understanding of this relationship, we have begun to utilize a "collage" assignment in the General Psychology course. In this workshop we will bring cutout materials and posterboards for faculty to make their own collages. We will then take faculty through the entire activity. Full instructions for how to do the activity will be provided.

Note: The "*" indicates the session chairperson.

RM 3 **Workshop:** Let Sleeping Students Lie? Fostering a Friendly Classroom Environment While Maintaining Discipline.
Michelle Merwin, University of Tennessee-Martin, TN

Five strategies for maintaining a friendly classroom environment while maintaining discipline are presented. These strategies include communicating expected behavior through course material, using humor to underscore appropriate behaviors, engaging students in class activities and tasks, modeling expected behavior, and frequent self-reminders of the principle of promoting a friendly and disciplined classroom environment. If this principle is valued and is coupled with earnestness and creativity, discipline and friendliness can peacefully coexist in the classroom.

Session 7: 4:30 - 5:30

RM 1 **Workshop:** Adjusting to the New Realities in the Classroom: Dealing with Today's Students.
Laurie Corey, Westchester Community College, NY &
Robert Bernstein, Marymount University, VA

Many faculty members feel unprepared to deal with the changing realities in their classrooms. Today's students often have different levels of academic skills than did their predecessors, and may have different expectations of classroom behavior, participation and functioning than their teachers. Often, faculty members are surprised and dismayed at what they perceive to be a lack of academic interest and civility on the part of their students. This can lead to tension and conflict in the classroom. This workshop will focus on effective ways to enhance student teacher collaboration in the classroom.

Note: The "*" indicates the session chairperson.

RM 2 **Workshop:** Innovate and Create: Improvisation as a Method to Spark Creativity in the Classroom.
Andy Wainer, Westchester Community College, NY

Improvisation games and exercises are designed to provoke creativity, spontaneity, and imagination. They also help build communication skills, teamwork or cooperation skills, and promote the ability and willingness to take risks and make mistakes. All of these skills and abilities are essential ingredients in an active classroom where students are motivated to learn, participate eagerly, and generate responses, ideas, and solutions that may be considered "out of the box". In surveys of human resources professionals who do the hiring for corporations and organizations, these skills and abilities are also found increasingly wanting among applicants emerging from college. In this workshop the participants will engage in improvisation games and exercises. **Participation is limited to the first 25.**

RM 3 **Workshop:** Implications of Test Design for Assessment Quality.
Sharon Seidman Milburn and Robert. Weisskirch, California State University, Fullerton, CA

The demand for increased educational accountability, combined with the changes in the structure of higher education, has focused attention on the need for accurate evaluation of student learning. The resulting rapid implementation of outcomes assessment precludes the development of innovative evaluation strategies and discourages reflection on the reliability and the validity of these measures. This workshop will present new assessment techniques to improve the correspondence between evaluation and student learning objectives. The participants will collaborate on a guided exercise to explore the purpose of assessment and exam effectiveness, facilitating the selection of innovative and accurate evaluation tools.

Note: The "*" indicates the session chairperson.

THURSDAY, APRIL 6, 2000

Reception: 6:00 - 7:00 p.m.

Dinner: 7:00 p.m.

After Dinner: Hospitality Room

Friday, April 7, 2000

Breakfast: 7:30 -9:10

Session 8: 9:15 - 10:15

RM 1 **Invited Speaker: Dr. Saul Kassin**
What's your prediction? Introducing Psychology via Commonsense.

Session 9: 10:30 - 11:30

RM 1 **Workshop:** A Testing/Teaching Multiple-Choice Answer Form.
Michael Epstein, Rider University, NJ

A new multiple-choice answer form is presented and discussed. The form permits sensitive assessment of student understanding of tested material; the standard multiple-choice answer form does not. Students answer each question until correct and receive immediate informative feedback for each of their answer choices. Standard multiple-choice answer forms provide delayed (or not) feedback, promoting acquisition of faulty information. The new form teaches during the testing.

Note: The "*" indicates the session chairperson.

RM 2 Emerging Trends in Format and Style of Introductory Psychology.
Jeffrey Nevid & Thomas Carmony, St. John's University, NY

The authors review and discuss major changes in the design and format of textbooks for introductory psychology courses. Major formats are examined, from traditional models that attempt to integrate material around broad topical areas to the increasingly prominent modular style, which presents information in more brief instructional units. Previous reviews and evaluations of these formats are examined, and future research is proposed to address the utility of each major textbook format in effectively conveying course information to students.

The Innovation of Tradition
Ethan Gologor*, Medgar Evers-CUNY, NY

For the last 21 years I have taught psychology at a school who student population is 99.9% minorities. But unlike many of my colleagues, I have never mentioned "multiculturalism," have not collaborated in collaborative education, and have distanced myself from distance learning. My students, it is evident, become active learners and critical thinkers nonetheless. They do so because they are introduced to traditional material that in traditional fashion carries its own weight.

Coffee Break 11:30 - 12:00

Note: The "*" indicates the session chairperson.

Session 10: 12:00 - 1:00

RM 1 **Panel:** Integrating Technology in the Psychology Curriculum: A Panel Discussion.
Patricia Oswald, Robin Flanagan, Kisok Kim & Katherine Zaromatidis, Iona College, NY

Many universities are making large investments in technology in an effort to gain a competitive advantage, enhance their curricula, and prepare their students for the 21st century. With the explosion of technology-related resources now available, faculty must become educated consumers. During this panel discussion, the presenters will review several technology-based resources that have been used in a variety of psychology courses.

Specifically, the panel will discuss: (a) using the internet in introductory psychology, (b) integrating computerized instruments in a psychological assessment course, (c) using PowerPoint technology in psychology major courses, and (d) an assessment of the impact of using technology in the psychology curriculum.

RM 2 **Panel:** Update on an E-Mail Mentoring Program: Using Upper-Class Mentors to Improve Freshman Writing and Performance in Introductory Psychology.
James Sanford, Katherine Perry & M. Sonia Montero
George Mason University, VA

This panel features presentations on improving academic performance by using an e-mail mentoring program. Since 1996 George Mason University has offered on-line mentoring by advanced psychology students to freshmen majors jointly enrolled in introductory psychology and English composition.

Note: The "*" indicates the session chairperson.

Assessment has shown that the program has been hugely successful in student satisfaction and retention, but that there has been no measurable improvement in psychology and English grades. Therefore, changes in mentor training and mentor-mentee interaction were implemented for 1999-2000. Panel members will discuss the program, assessment results, and changes, as well as how to implement a similar program at other institutions.

True Integration or a Marriage of Convenience? The Development of Electronic Media Supplements to Undergraduate Psychology Textbooks.

Thomas Carmony & Jeffrey Nevid*
St. John's University, NY

The authors explore the development and integration of electronic media supplements for conventional undergraduate psychology textbooks. A history of the inclusion of supplements such as CD-ROM technology and companion Internet websites is provided. Topical content of existing multimedia supplements is discussed, and comments are offered regarding how such supplements can more effectively complement primary text material. In addition, examples of recently published psychology textbooks offering increased integration of supplemental multimedia content are reviewed.

Lunch 1:00 p.m.

Conference Committee
Gene Indenbaum, Chairperson
Judith R. Levine, Program Subcommittee Chairperson
David Griesé, Reviewer/Keynote Speakers Contact Person
Marilyn Blumenthal, Proof-reader/Editor
Barbara Sarringer, Executive Assistant

HOPE TO SEE YOU ALL NEXT YEAR!

Developing an Undergraduate Course in Multimedia Applications in Psychology: Design and Outcome

Presented at the 14th Annual Conference on Undergraduate Teaching of Psychology

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Developing an Undergraduate Course in Multimedia Applications in Psychology: Design and Outcome

Abstract

Psychology programs typically do not provide students with formal training in those computer programs (e.g., word processors, presentation software, HTML editors) they encounter during their academic and post-graduate careers. Because psychology students study topics such as sensation/perception and social psychology, they are excellent candidates for instruction in the effective use of such applications. With this in mind, a course was designed to combine the application human factors/multimedia research, with training in the production of brochures, newsletters, handouts, presentations, and web pages. Both student evaluations and outcome data have been extremely favorable, justifying the inclusion of the course in psychology curriculum.

Developing an Undergraduate Course in Multimedia Applications in Psychology:

Design and Outcome

Rationale for the Course

Psychology students are often required to use computers as part of their courses (e.g., using SPSS® in a "Statistics" or "Methods" course). There is evidence to suggest that students would also benefit from exposure to other types of programs as well. For example, the ability to create and use visual aids (such as using Excel® to create graphs or PowerPoint® to enhance presentation text) is associated with higher grades on oral presentations (Menzel & Carrell, 1994). Upon graduation, students may be required to produce handouts, represent statistical findings with graphs, deliver oral presentations or develop web pages as part of their employment or graduate school experience. If properly trained, psychology students are among the best equipped to perform these tasks, given their knowledge of topics such as sensation and perception, cognitive processes, and social behavior.

In order to help students apply their knowledge of human behavior to computer generated work products, a Multimedia Applications in Psychology course was developed. The development of this course also helped to address three other problem areas. First, the course filled a void in the psychology curriculum at the author's institution, as few courses exposed them to computer applications beyond SPSS or Excel. Second, students tended to lack proficiency in developing oral presentations and written work-products that required them to deviate from the usual term paper format. Third, while students had access to state-of-the art computer labs on campus, they lacked formal training in how to use the software and hardware available to them.

Course Development

After reviewing numerous web sites and catalogues, the conclusion was drawn that few institutions (if any) offer a course of this nature within the framework of their psychology curriculum. Thus, examples of model syllabi, course structure, and textbooks are not readily available. To prepare for the course in the absence of such resources, a review of the research on the use of multimedia in psychology was conducted. Relevant copyright decisions related to the fair use of multimedia were also surveyed. An informal poll of psychologists in clinical, industrial/organizational, and educational settings was conducted to learn more about how professionals in these areas use computer and multimedia skills in their daily work.

Perhaps the most time consuming aspect of course development involved those tasks directly associated with the use of multimedia applications. Since students were required to give computer assisted class presentations the instructor prepared PowerPoint presentations for each lecture topic. These presentations included images, graphs, audio and video clips, and hyperlinks to make full use of multimedia resources. This type of computer assisted instruction tends to be under utilized by in psychology (Butler, 1993) despite its effectiveness as an instructional technology (Goolkasian, 1996). A professional web page (on clinical psychology, the author's specialty) was authored to serve as a model to students striving to develop their own page on an area of psychology. Finally, the lack of a published textbook related to this course led to author to develop a 50 page Multimedia Guide to help students master both theoretical and technical aspects of course content.

Course Format

This course is offered as a three-credit psychology elective. Students seeking specialized training in Industrial/Organization Psychology are strongly encouraged to take the course, as are students bound for graduate training. Class size is small, limited to 16 students.

The course format includes both lecture and lab components. Half of the class time is devoted to a review of human factors research and the use of multimedia; the other half is spent in a computer classroom where students receive hands-on training in the use of computer applications. Both the lecture classroom and computer lab are equipped with a Macintosh G3 computer connected to a ceiling mounted video projector. This allows the instructor to demonstrate the use of various applications both in the classroom and lab. Structured lab exercises were developed for each topic help students master the software programs rapidly. Additionally, students are trained in using the Internet to search for media, and instructed on the copyright laws governing their use.

Course Requirements

Throughout the semester, students complete a variety of computer-generated work products. Assignments emulate typical tasks commissioned in a clinical, business, or educational employment setting. Each assignment builds on the skills acquired in previous ones. Throughout the semester students complete the following assignments:

- Handout on a specialized area of psychology (using Microsoft Word®)
- Newsletter or brochure (also using Word®)
- Statistical report on psychotherapy outcome data (using Excel®)
- Computer assisted oral presentation (using PowerPoint®)
- Hypertext resume (using Hyperstudio®)
- Psychology Web Pages (using Claris HomePage®)

Additionally, students take a mid-term and final exam. All assignments are completed independently by students except for the final web page project, where teams of two or three are permitted to work collaboratively.

Course Outcome

The response to this course has been extremely positive. Formal student evaluations have been very favorable, as well as anecdotal reports received post-graduation. To measure this outcome in a more empirical way, students rated their perceived utility of each software program, their confidence in operating the application and frequency of using the program at pre-, mid-, and post-semester intervals. Repeated measures ANOVAs indicate significant increases in most ratings over time (see Table 1.). Some variables (such as how frequently students were using the Internet to search for information, and the perception that presentation and web authoring software were useful) were initially positive and did not increase further over the course of the semester.

Course Revisions

As of this writing, the Multimedia Applications in Psychology course has been offered three times. A few important changes have been instituted as a result of student feedback and instructor experience. For example, after two attempts to get students interested in using Hyperstudio, the hypertext project has been dropped from the list of assignments. While students recognized the benefits of using such a program to create presentations and computer administered interviews, they did not like the long learning curve associated with this application. An overview of how hypertext models affect learning and memory is still included in the lecture portion of the class.

The Multimedia Guide has been revised twice to incorporate new human factors research where relevant. Also, with the release of the latest version of Microsoft Office, the chapters on using Word and PowerPoint required significant revisions.

Because the course can accommodate a small number of students, seniors tend to fill the class during registration. Yet many students recommend that the course be open to them as sophomores, since the content and training would help them in many of their other courses. The possibility of offering multiple sections to allow students to enter the course earlier in their college careers in being considered.

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Table 1.
Multimedia Class Survey results on student perception of confidence, frequency, and usefulness of multimedia applications

Item	Statistic				
	Pre-Mean (SD)	**Mid-Mean (SD)**	**End-Mean (SD)**	**F value**	**Post-hoc tests**
Confidence in using word processing software	2.00 (.88)	4.21 (.80)	4.63 (.50)	$F = 95.52$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$ Mid-End $p < .05$
How often using word processing software	1.71 (.91)	3.43 (.76)	3.57 (.76)	$F = 44.37$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$
Usefulness of word processing programs	3.93 (.73)	4.57 (.65)	4.71 (.47)	$F = 9.92$, $p < .0006$	Pre-Mid $p < .05$ Pre-End $p < .05$
Confidence in using spreadsheet software	1.29 (.47)	3.21 (.89)	3.36 (.93)	$F = 38.90$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$
How often using spreadsheet software	1.36 (.50)	2.00 (.68)	2.14 (.86)	$F = 9.92$, $p < .0006$	Pre-Mid $p < .05$ Pre-End $p < .05$
Usefulness of spreadsheet software programs	3.43 (1.09)	4.07 (.73)	3.71 (.83)	n.s.	Pre-Mid $p < .05$
Confidence in using the Internet to search for images	2.36 (1.39)	4.29 (1.14)	4.71 (.47)	$F = 17.29$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$
How often using Internet to search for images	1.71 (.83)	3.64 (1.01)	4.43 (.65)	$F = 48.26$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$ Mid-End $p < .05$
Confidence in using the Internet to search for information	3.93 (1.27)	4.71 (.61)	4.50 (.65)	$F = 5.60$, $p < .0095$	Pre-Mid $p < .05$ Pre-End $p < .05$
How often using Internet to search for information	4.00 (1.30)	4.50 (.65)	4.43 (.65)	n.s.	n.s.
Confidence in using hypertext software	1.29 (.61)	2.50 (.86)	4.07 (.73)	$F = 66.27$, $p < .0001$	Pre-Mid $p < .05$ Pre-end $p < .05$ Mid-End $p < .05$
How often use hypertext software	1.07 (.27)	2.29 (.73)	2.14 (1.03)	$F = 20.91$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$
Usefulness of hypertext software	3.64 (1.22)	4.00 (.88)	3.57 (1.02)	n.s.	n.s.
Confidence in using presentation software	1.64 (.84)	2.36 (1.01)	4.50 (.65)	$F = 52.16$, $p < .0001$	Pre-Mid $p < .05$ Pre-End $p < .05$ Mid-End $p < .05$
How often using presentation software	1.71 (.73)	2.07 (1.00)	3.14 (.86)	$F = 20.41$, $p < .0001$	Pre-End $p < .05$ Mid-End $p < .05$
Usefulness of presentation software	4.36 (.84)	4.36 (.84)	4.71 (.47)	n.s.	n.s.
Confidence in web page authoring software	1.21 (.58)	1.50 (.86)	2.86 (.77)	$F = 30.83$, $p < .0001$	Pre-End $p < .05$ Mid-End $p < .05$
How often using web page authoring	1.14 (.36)	1.43 (.76)	2.00 (.88)	$F = 8.00$, $p < .002$	Pre-End $p < .05$ Mid-End $p < .05$
Usefulness of web page authoring software	3.79 (1.05)	3.50 (1.09)	4.00 (.88)	n.s.	n.s.

Team teaching across disciplinary fields: The Cluster Program at William Paterson University

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At William Paterson University, freshman students can take cluster courses. The primary aim of the Cluster Program is to promote the building of intellectual bridges across academic disciplines. Students sign up for three separate courses, and earn credit in each. The difference for cluster courses is that each constituent course gives one credit hour to a joint plenary session. During the plenary, all three faculty members from the three different courses are present and involved. There are a number of advantages of cluster courses. One intellectual advantage is the presentation of in-depth topics in the plenary session that includes alternative viewpoints and opinions. A less tangible but perhaps equally significant achievement of the cluster courses is the social and intellectual bonding of the students with each other. This carries over into greater intellectual engagement both inside and outside the classroom.

What is it?

The cluster program at William Paterson University has been in existence for the past eleven years. John Peterman, a philosopher, developed it. The program is a vehicle for teaching within and between disciplines. A cluster course is one that is grouped by three individual courses for which students sign up as a whole. There are no preset criteria for the selection of the constituent courses that can make up a cluster and the courses do not need to come from within the same College. Some examples of psychology classes that have been offered as a cluster are:

Psychology, Philosophy, & Biology

Psychology, Sociology, & Biology

Psychology, Writing Effective Prose, & Anthropology.

How does it work?

The basic structure of a cluster course is as follows: there are two 50-minute sessions covering the topic in the traditional manner and one 160-minute plenary session. In essence, each individual course gives one hour towards the plenary session. In total students spend 265 minutes per week in a cluster course. In the individual (50-minute) sessions, the core curriculum of each course is presented. During this time, only the faculty directly involved with the course is present. In the plenary session all three faculty members are present and interact to deliver material common to all the courses, providing enriched perspectives.

What do you do in the plenary session?

The only hard and fast rule of a plenary session is that all three faculty members must be present. The specific division of labor is up to the individual faculty involved, so for example all three members can be responsible for preparation in each plenary session or they can rotate specific plenary session responsibilities amongst themselves based their individual interests and areas of expertise. One of the primary goals of the plenary session is to build intellectual bridges across academic disciplines. Another primary goal is to discuss a topic in depth while providing students with a variety of perspectives on an issue. Some examples of topics covered in a cluster call "Biology of Mind" composed of the core courses of Psychology, Philosophy, & Biology are:

The nature/ nurture debate
Consciousness
Evolution
The self
Investigating the living brain
Psychopathology
Sex

What about the logistics of running a cluster program?

For faculty:

Clearly, the amount of time spent by individual faculty in a cluster course is greater than that of the typical course. At William Paterson University, the standard time in class per week is 160

minutes. A cluster course puts each faculty in the classroom with their students for 260 minutes per week. Faculty in cluster courses spend substantially more time in the classroom.
The initial investment by faculty into a cluster course is substantial. In addition to modifying the way their respective individual courses need to be taught because of less specific course contact time, there is also the matter of the curriculum to be developed for the substantial plenary component. In recognition of the large initial investment in organizing a cluster course, the first time a cluster is taught each faculty receives 6 credits hours. After the cluster is established, each faculty receives 4 credit hours.

For students:

Students are given credit for the three individual courses. So a student enrolled in the "Biology of Mind" would obtain 10 credits: 3 for each of Psychology and Philosophy and 4 for Biology (which still had the lab component that conforms with the requirements of the Biology Department in all respects). (In fact, the "Biology of Mind" students spent an additional 3 hours per week together in lab.) Students receive the same credit assignment as they would have if they had taken the three courses separately. Also, the amount of time spent in class for students is the same in a cluster course as if they were enrolled in the same three courses individually. Cluster courses at William Paterson University are capped at 25 students per class. This is in contrast to a cap of 45 students in a traditional General Psychology course. This allows for more individualized attention and instruction as well as the opportunity of more intensive writing exercises. In addition, although students spend the same amount of time in class as in a non-cluster situation, they in fact have more contact time with the faculty who teach them: an additional 100 minutes interacting with each faculty.

Grading:

Students enrolled in a cluster course receive a grade for each of the constituent courses. On the faculty side of the equation, the trio of faculty decides how much weight the plenary sessions are given towards the constituent course's final grade. The decision rests with the faculty involved. For example, in "The Biology of Mind" 80% of the final grade came from the constituent course and 20% was derived from the students' performance in the plenary session. Again, the decision

on grading rests with the triad of faculty involved. It is recommended that some weight be assigned to the plenary session in order that students appreciate from the outset that it is considered an important component of their learning experience. In addition, the small class size allows for more and more intensive writing assignments forming the basis for student evaluation.

What are the benefits?

From a purely academic perspective, one of the primary benefits of cluster courses is the building of intellectual bridges across disciplines. Students develop an appreciation of the contributions of each of the constituent courses to each other and through this, a deeper understanding of the topics covered by the cluster course. In the words of D. Hurley, a student enrolled in the "Biology of Mind" cluster:

> "What makes us tick? This was a question that was given to us a while back. Now that the semester is almost over I can look back ...and try to understand what is going on in our brain based on the knowledge I have of psychology, biology and philosophy. Although each of the three separately do account for the understanding of the mind/brain, when combined a deeper understanding occurs. The basic knowledge of the mind/brain stems from a combination of biology and psychology. In these two classes we learned the basic structure and parts of the brain. ... what we did in one class complimented what we did in the other. Then philosophy taught us to look deeper at what we had learned... to critically think about ... what makes us us. It is safe to say that all three subjects combine to examine how the mind works (what makes us tick). Through biology we learn the basic structure, through psychology we learn why it acts the way it does and why we do certain things (behavior in a given situation) and in philosophy we learn not to take what we learn at face value ..."

Critical evaluation of material presented is more strongly fostered in cluster courses. The mere fact of having three academics coming form different disciplines, with different theoretical orientations and methodologies leads to lively interaction amongst faculty members and extends to interactions with and between students. Inevitably, some differences of opinion between

faculty will arise, and this is a positive outcome of the plenary sessions as it allows the students a window into their professors' thinking processes. It encourages students to evaluate their own thinking and implicit (or explicit) preconceived perspectives on the issues at hand. As expressed by J. Sarria, a student from "Biology of Mind":

> "... taken separately these disciplines would be very confusing, boring, and biased. Allowing three disciplines to interact allows for different points of view; a better understanding of the material because they can relate to one another ... and allows for a more exciting discussion that leaves the student thinking about which answer he/she should go with and why. ...taken simultaneously, these courses do not lecture the student on how he/she should feel about the subject but leaves it up to them to decide for themselves."

Another advantage of cluster courses is the higher retention rates of students. The cost of dropping an individual course is 3 credits, the cost of dropping a cluster course is at a minimum 9 credits (more if one of the constituent courses is a laboratory course). Students must maintain enrollment in all three constituent courses of the cluster, dropping out of one means dropping out of all three courses. The long-term implication of this higher retention rate is more timely completion of all degree requirements and hence more timely graduation. In addition to the benefit of to the students, this is of clear benefit to the institution as a whole.

Perhaps one of the most important advantages of the cluster course is one that is less tangible. : the social cohesion that quickly develops amongst the students in a cluster course. At a minimum students are spending approximately nine hours per week (twelve hours if one of the classes includes a lab as in the "Biology of Mind"). For freshman students, in a new school, many of whom are living away from home for the first time, this ready made cohort provides stability and a quick sense of familiarity in an otherwise novel and at times confusing environment. It also provides the students with a social support network. They bond quickly with each other (usually within the first two weeks) and provide each other with social, emotional, and intellectual support and encouragement. I have even overheard students from my cluster classes discussing course-related material in the hallways outside of class time!

What should you watch out for?

There are a number of things that faculty can do to promote a positive cluster course environment for both themselves and their students. Perhaps the most important is that the individual faculty involved must be comfortable with each other. For a faculty member to react defensively to a critical examination of their own ideas and methodologies is counter to everything the cluster program stands for. There is also the issue of evaluation policies. Faculty must respect each others grading, not allowing students to engage in the typical child strategy that all two parent families are familiar with, that is the 'divide and conquer'! Students will try to do this, gaining sympathy for the 'softest' faculty. The result of this is highly disruptive for both faculty and students. It interferes with group cohesion on all levels. It therefore is important for faculty to know each other beforehand and to work out issues related to grading and student complaints. Group cohesion amongst faculty is a prerequisite for group cohesion of the cluster as a whole.

Another potential pitfall is that faculty may be having such a good time amongst themselves that the students may be inadvertently excluded from the debate. This scenario is actually unlikely especially if early on students are encouraged to provide input. My experience with cluster classes leads me to conclude that students are ready and willing to join in the fray, they want their views heard and acknowledged! And it only takes one or two outgoing students in the class to provide models for the other students. Cluster courses are about placing students' intellectual development foremost. I think they do, and do so in a way that intellectually stimulating for all those involved.

In summary, the Cluster Program at William Paterson University has proven to be a rewarding experience for both students and faculty. Students leave the cluster course with a greater sense of the intellectual cohesion between disciplines. They also have had the opportunity to investigate topics in depth in a lively intellectual atmosphere. Faculty in many ways derive the same benefits as students from their cluster experience as evidenced by the high number of faculty (myself included) who continue to participate in the cluster program year after year.

Using Debriefings to Enhance Students' Service Projects

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Using Debriefings to Enhance Students' Service Projects

Abstract

Service projects have been used in our undergraduate business administration program to provide students with experiential learning that enhances the usual cognitive and content learning outcomes. These projects are typically located in courses having a strong psychological, behavioral, or social component (i.e., organizational behavior, human resource management, management information systems). We describe four student projects and report how carefully and explicitly debriefing the students about their project experiences can provide them a wider context for understanding both the project and their experience as participants. Examining their projects with the larger social and cultural contexts encourages exploration of personal, social and ethical learning as well.

> Indeed, during the college years, a person's character is often forged through the crucible of personal experiences, ranging from binge drinking to volunteering at a hospice. Each of these experiences "builds" character. (Schwartz, 2000, p. A68)

A set of interesting forces encouraged us to incorporate service-learning projects into our courses. First, the increasing visibility of our business school stimulates inquiries for assistance from area organizations, both for-profit and not-for-profit. Many inquiries go to the Center for Business Research or the Center for Collaboration, which in turn try to find a course, class, or instructor for which the potential project has relevance. These requests are increasing each semester. Second, the Ancell School of Business has a strong commitment to experiential learning and to integrating instructional technology into our courses. Almost every course involves case studies, simulations, exercises, role-plays, oral presentations, or projects. Third, the world for which we are preparing our graduates is changing: we must expose them to alternative views of the future of work. Our thinking about the last factor has been guided by two perspectives: Jeremy Rifkin's (1996) concept of the civil society or sector, and the concept of *kyosei* as articulated by Ryuzaburo Kaku (1997), Canon's honorary chairman of the board.

Rifkin (1996) argues that the nature of work itself is being fundamentally altered by profound technological and economic changes. The workers displaced by "an ever more-automated global economy" can no longer be re-distributed into the traditional market and government sectors. Rifkin proposes that the development of "the nation's civil sector may be the best hope for absorbing the millions of displaced workers" (p. 14). Ranging "from social services

to health care, education and research, the arts, religion and advocacy" (p. 14), this sector involves values, beliefs, and perspectives (e.g., service, volunteerism, philanthropy, and altruism) uncharacteristic of the market and government sectors. If this is the emerging sector of the future, how can we expose our business students to it and prepare them to become participants and leaders in it?

Kyosei is best defined as "a 'spirit of cooperation,' in which individuals and organizations live and work together for the common good" (Kaku, 1997, p. 55). Businesses and other organizations pursuing *kyosei* well can reconcile their moral duties (e.g., to respond to global problems and to promote peace and prosperity) with their obligation to secure profits or fiscal independence. The five stages of corporate *kyosei* are (a) economic survival, (b) cooperating with labor, (c) cooperating outside the company, (d) global activism, and (e) the government as *kyosei* partner. The concept blends humanistic values and strategic thinking into an enlightened or spiritual perspective on managing all organizations, not just businesses. Kaku also observed that people in their twenties and thirties – the age groups of our undergraduate and graduate students -- are more open to this concept. How then can we provide our students with exposure to and experience with *kyosei* and its melding of the spiritual and the practical?

Our goal was to conduct service learning projects and, by using debriefings, to embed them in a context of cognitive learning, organizational citizenship, and personal development (Kolenko, Porter Wheatley & Colby, 1996). In this sense, our efforts were consistent with Schwartz's observation that "Character development is about encouraging and inspiring students to develop the virtues and traits that will enable them to be responsible and mature adults" (2000, A68). Can business students learn to appreciate the humanitarianism of the civil sector? Can business students be given a small experience of *kyosei*? This paper reports a few of our early

attempts to explore debriefings as a mechanism for expanding the learning and experiences generated by service projects in business courses.

Service Projects

We provide four examples of service projects in which debriefings were used to foster a wide range of learning for the participating business students. The examples are from a single Management Information Systems (MIS) class but elucidate the opportunities for similar experiences when other courses or an entire business curriculum are considered. Three occurred within the University and the fourth externally. All involved debriefing the students as the major link to expanded learning, especially in the personal and social domains as conceptualized by Rifkin (1996), Kaku (1997), and Schwartz (2000).

Graduate Coordinator's Database

A graduate program coordinator needed a database to help him manage his programs more effectively. While the university's current database provides basic information about graduate students (e.g., addresses, phone numbers, courses taken), it does not provide other information related to admission and accreditation (e.g., undergraduate grade point average, GMAT scores, name of employer). A new database containing both types of information was desired. Unfortunately, due to constraints of time and money, the university's information technology group could not meet in a timely manner the graduate coordinator's needs for a new database.

The instructor teaching an MIS database design course gave students the option, as a major assignment for their course grade, to work on the coordinator's problem. The students accepted this challenge and were tasked with developing an ad-hoc database using Microsoft Access 97. The student design team worked with the coordinator in defining his data

requirements and understanding his special demands. Using a prototyping approach, the students produced a database containing tables, queries, forms, reports, and menus and presented their project and product to the class, the instructor, the graduate coordinator, and the business school dean.

The database was implemented the next semester. Subsequently, some new requirements (e.g., statistical profiles, enrollment data) were discovered. Once again, students from an MIS class worked with the graduate coordinator to improve the database.

Library Tracking and Reporting

For almost a half semester, three MIS students worked closely with two librarians in the business school library in converting a time-consuming manual library service tracking system to a PC-based relational database using Microsoft Access 97. The university's computing center, lacking personnel, could not tackle such a potentially demanding project.

For the library staff the desired tracking system was an essential operational tool and its enhancement had a priority item for several years. The students created a database providing ongoing statistics and information about a host of library activities, including information on users, faculty, and visitors. The two librarians wrote a letter of appreciation to the MIS professor, with copies to the students, the director of libraries, and the dean of the business school. The university's main library is investigating adopting the library service tracking system developed by these students.

The business library staff subsequently wanted the ability to up-date the database themselves. MIS students in a subsequent semester's database application class provided the staff with the necessary training on Access 97 database maintenance, as well as further refinements requested by the library staff.

University Day Care Center

The University's non-profit day care center, run by professional staff and volunteers, needed a database to track a welter of information (e.g., enrollment, schedules, parents, emergency contact persons, and medical doctors). Using Microsoft Access 97, MIS students designed an appropriate database and designed queries for selected information, forms for viewing and updating the database, and reports required by state agencies. The center's director reviewed and accepted the main features and capabilities of the new database system, but its implementation was postponed due to a lack of funds to purchase computers.

A year later the center acquired the computers and was ready to install the system. A new group of MIS students did so and trained the day care staff on how to use it. The need to up-date and support this system should provide service projects for future semesters.

Church Membership

An MIS student talked with the pastor of his church about developing a student information system for a religious education program. He designed all the necessary normalized relations for several entities, such as students, teachers, classes, and parents. In a subsequent semester, four students -- two MIS students and two Accounting majors -- helped a different church develop a database to manage the parish's membership. This church had been using manual files and was having difficulties with lost or incomplete data on its members. Both of these projects were well received by the end-users and are currently be used on a routine basis in both churches.

Benefits

Information obtained from the debriefings confirmed that the projects were worthwhile endeavors. They promoted both cognitive and personal learning for the students. The client

organization or person received enhanced information processing capacity and operational efficiency. The business school received goodwill internally, within the university, and within its community. The debriefings supplied the opportunity to identify these benefits, to assist the students in integrating the cognitive and affective results, and to expand the learning into the realms of character and personal development.

Students

Students are the primary focus and beneficiaries of these projects. Cognitively, the students applied their classroom learning to real world projects. They worked with individuals or organizations that truly needed their help, that valued their opinions, and that needed a complete and identifiable output (Lamb, Swinth, Vinton, & Lee, 1998). This is not always the case in traditional internships, co-ops, or service learning projects (Spinks & Wells, 1994).

A potent, but perhaps less recognized, benefit of these service projects was that they made many students feel good about themselves and their work, an outcome consistent with Schwartz's observation that "education in its fullest sense is inescapably a moral enterprise – a continuous and conscious effort to guide students to know and pursue what is good and worthwhile" (2000, A68). Debriefing these students revealed their satisfaction and fulfillment in using their recently acquired database design skills to do meaningful work for someone needing help. Most students linked their experiences to the larger context of volunteerism, social involvement, and personal development, recognizing not only their intellectual commitment, but their emotions and feelings as well. Without debriefing, these lessons might well have been ignored. Debriefing helped the students identify and discuss these outcomes and use them for their learning and development. Hopefully the students will carry these insights with them into their careers and personal lives and continue to behave helpfully in the future.

Recipients

The clients in these service projects benefited in several ways. They received expert assistance that they might not have otherwise received or afforded. The students with whom they worked are the likely future leaders in businesses and in the community. The links to the business school and the university offer opportunities for additional assistance and synergies.

The Business School

The school and university both did more with less by supplementing their own scarce resources with committed students working to benefit the community surrounding them. Also, both receive a potentially substantial windfall of positive public and community relations from students helping organizations that are in need and that also, in turn, serve the public. In these times of scarce resources, such good press is an asset to be used judiciously.

Implementation: practical issues

Constraints on these service projects must be addressed (Kolenko et al., 1996). For example, class size, type of student (traditional vs. non-traditional, residential vs. commuter), curriculum structure, and departmental and school missions affect the range of acceptable projects and their scope. How many students will be involved in service projects? Should the projects in a specific class be optional or required? Should projects be required as part of a particular major, or for graduation from the school (Lamb, et al., 1998)?

The Role of Debriefing: The link from experience to learning

Carefully debriefing students (Dennehy, Sims, & Collins, 1998) upon completion of their service projects provides the critical linking of the service project method and the student's opportunity for personal development. An effective debriefing puts the students' experiences, perceptions, and feelings in conducting their service project into a larger context and thus

provides them a richer, more meaningful experience than the typical internship, co-op, or service learning project (Spinks & Wells, 1994). The nature of these debriefings must be clear.

Debriefings in behavioral research serve three roles: ethical, methodological, and educative (Tesch, 1977). Debriefings of service projects involve similar roles: process checking (ethical), content checking (methodological), and enhancing the learning (educative).

Debriefing to check process simply explores with the students their perceptions and understandings of the client and their relationship with that client. Were the client's needs assessed? Was the relationship defined adequately? Were expectations made explicit and fulfilled? What were their expectations about the client's behavior?

Debriefing to check content examines the substance of the final project report or product. Did the students deliver what was expected? Did they correctly and usefully apply their cognitive learning? Was the project an adequate approach to or solution of the problem?

Debriefing to enhance the student's learning focuses on the students' feelings about themselves and their work. Students find that the helping role of providing assistance to a client arouses new, perhaps unique, feelings (e.g., being advantaged) and questions (e.g., Is this best for the client?). Some may find these reactions upsetting. Whatever the student's experience, it must be discussed and related to larger questions of citizenship, the relationship of work and self, and personal learning (Schwartz, 2000).

The three roles can be combined in many ways. The effective blend requires consideration of a number of factors.

Debriefing variables

How then should debriefings of service projects be constructed and conducted? We consider eight factors, each involving a range of choices: format, structure, inclusiveness, preparation, perspective, the use of data, possible future events, and the social and cultural context.

Format. How should the debriefing be structured? Individual projects call for one-on-one debriefings, but perhaps augmented by some group or class discussions. Group projects present a choice: individual or group debriefings. Should reading assignments or short papers be part of the debriefing? For example, the entire debriefing process could be conducted in face-to-face meetings between the student and professor, by having students write short papers or memos, or by a combination.

Structure. Like any interview, debriefings may be well scripted or more open ended. Our experience argues for a standard set of items that must be covered, particularly for the process and content areas. Dealing with the student's feelings usually requires a more flexible approach to facilitate the student's discovery of personal insights.

Inclusiveness. The issue here is the balance between the technical and the personal outcomes. How much of each should be addressed and explored? The answer depends on the objectives of the course and the instructor. Instructors must also decide if they will debrief the project's technical aspects and its personal ones separately or concurrently. When addressed separately, the technical side of the project is usually discussed first. One advantage of separate debriefing is the ability to analyze each domain more deeply. A second advantage is the student's ability to cope with the less familiar personal, social, and ethical questions once they have analyzed the more familiar and less ambiguous technical details and impact. The primary disadvantages of separate debriefings are time and scheduling.

Preparation. How should students be prepared for the debriefing experience? The debriefing of the non-technical areas is facilitated by having the students investigate the human or spiritual side of their learning (Boozer & Maddox, 1992; McCormick, 1994). This can be accomplished, for example, by having them read articles (Kaku, 1997; Neck & McMilliman, 1994; Rifkin, 1996). Written assignments ranging from simple abstracts of articles to short papers requiring some additional research can promote even deeper understanding. Given that debriefing comes when the service project is done (near the end of the semester) and given that the debriefing's ultimate objective is to illuminate the larger context of the service project, the timetable for the project, the depth of theoretical exploration, and the extent of literature review must be carefully determined by the instructor.

Perspective. One way to put students' service project experiences into a larger perspective is to have them ponder the project from the perspective of the client person, group, or organization. The goal here is to help the student discover that their work has been truly meaningful and important. They can focus on the resource limitations of their client, the potential dollar value of their service, the timeliness of their project, the inability of the client to secure help from another source, the goals of the client's organization, and the potential impact of their project on the community. Students can come to understand that they have used their time and talents to provide meaningful assistance to a client who could not have received this assistance from another source. They also discover that they have potentially contributed to the community as whole by helping their specific client (*kyosei*).

The use of data. Pretest and posttest perspectives could be collected and compared in the debriefing. Students could then re-examine the attitudes and perceptions that they held before, during, and after the project. Critical incidents evoking strong feeling of passion,

enthusiasm, and commitment can be identified and their affects on subsequent behaviors explored. Our experience is that even relatively simple self-assessments assist students to identify their basic values and to open the social and ethical dimensions of their behavior to their view.

Possible future events. Students should also consider in the debriefing how their experience might foster similar helping behaviors in the future, especially from the perspective of an employee in an organization, a professional in one's field, and a citizen. It is helpful to have students provide examples of possible similar activities in their futures. Rifkin (1996) mentions helping organizations such as fraternal orders, environmental groups, and neighborhood advisory councils, while Kaku (1997) explores affecting change in the economy, politics, and education.

Social and cultural views. Finally, debriefing should evaluate the role of spirituality and kyosei within the context of Rifkin's projected civil society. Students can contrast present and future applications of their helping. Any analysis of future trends should emphasize the role of today's students as leaders in both business and society in the future. As such, students' experiences with service projects today may serve as a catalyst for future endeavors and may create a generation of compassionate managers who will empower others to pursue similar altruistic activities.

Instructor's Role

Service projects and their debriefings require an expanded role for the instructor. First, grading and debriefing must be differentiated. The content of the project is graded. The experience and context of the project are debriefed. Students must never believe that their personal feelings, views, and benefits are in jeopardy through a grade. Second, instructors have the opportunity to collect, analyze, and present data about the students and their experiences in doing the projects. Learning from data is an essential component of good decision-making -- the fundamental

activities of effective managers. Third, instructors must serve as liaisons, to the clients especially, to protect the integrity of the service learning projects. Fourth, instructors must provide support to the students, be it logistical, ethical, technical, or emotional. For many students, service learning involves risks with which they are unfamiliar. Finally, the instructor serves as a role model. Students learn to operate in a consultative fashion by being treated in that fashion. The instructor is facilitator, guide, cheerleader, and exemplar.

Conclusion

Well-designed debriefings enhance the many benefits of student service projects. Debriefings can be a springboard for spiritual discovery and development. Spirituality involves moving beyond the usual concepts such as corporate social responsibility. It lies in the connectedness of the civil sector and kyosei. As Schwartz noted, "Character development is about encouraging and inspiring students to develop the virtues and traits that will enable them to be responsible and mature adults" (2000, A68).

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Running head: RESEARCH IN PSYCHOLOGY CLUB

The Psychology Club as a Mechanism for Introducing Students to Research

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Author Notes: Department of Psychology; Buffalo State College; 1300 Elmwood Ave.; Buffalo, NY 14222. Paper presented at the 14th Annual Conference of Undergraduate Teaching of Psychology: Ideas and Innovations, Ellenville, NY, April 5-7, 2000.

Abstract

The present study attempted to encourage participation in research through a group project conducted under the auspices of the Psychology Club. Students reported positive feelings about research in general and the project upon which this study was based. Psychology Club research projects may serve as a non-threatening introduction to research for students who are unlikely to seek independently more individualized experiences.

The Psychology Club as a Mechanism for Introducing Students to Research

The importance of undergraduate research in improving students' critical thinking has been reported frequently (e.g. Starke, 1985; VanderStoep & Shaughnessy, 1997). What is less clear is how to motivate students to participate in what may seem to be a frightening endeavor. One solution is to offer a group project outside of class in an environment open to all students: The psychology club. Psychology Clubs provide students with a variety of experiences ranging from debates to film series to fund raisers (Satterfield & Abramson, 1998). A research project is a logical extension of these activities that are designed to engage students in the field.

The Psychology Club at this college is an active group. Among recent events was a bone marrow typing drive, designed to recruit students to have their bone marrow placed on the National Marrow Donor Program's (NMDP) registry of potential donors. Because little research has been conducted exploring differences between donors and non-donors and because students were already enthusiastic about the drive, this project offered a potentially ideal introduction to research. It was expected that students who participated in a group research project through the Psychology Club would report feeling interested in research and would express an expectation of conducting research again in the future.

Method

Participants

Ten students of the 13 who conducted the typing drive chose to participate on the research team. One student completed an independent study as part of this project and was responsible for much of the organization. Aside from laboratory projects, none had conducted or assisted with any research studies.

Materials and Procedure

With the club's advisor and president, the students designed a questionnaire project to compare students who chose to have their marrow typed and those who did not. At the drive, the research team approached all students who had their marrow typed to request participation. The team then randomly called non-donors to request their participation in the study. In total, 66 donors and 47 non-donors participated in the project. Following data collection, the team entered data, although analyses were completed by the club advisor, president, and one other, more-advanced student. The results were presented as a poster in a college-wide session. The poster itself was written by the team: pairs of students wrote each of the five sections. The group met again to assemble the poster. All 10 students were given authorship, four students presented the poster, which was later displayed in the psychology department.

Following the presentation, questionnaires designed to assess the impact of the project on students' views of research were sent to each team member. Questionnaires, comprised of 11 questions about students' attitudes toward research and this project, were answered on 7-point Likert-type scales (See Table 1). Four open-ended questions were also included. Students were provided with stamped return envelopes and the questionnaires were completed anonymously.

Results

Of the ten questionnaires mailed, eight were completed and one was returned by the post office with an outdated address. Students generally reported having a positive experience. Students reported that the project contributed to their understanding of psychology and gave them a more positive outlook regarding research. In response to an

open-ended question, one student wrote, "I like research now more than I ever thought I would. I would even do it again!" Another student wrote that the project was "fun" and said, "Research isn't as bad as I thought it would be." A third student wrote, "This project has expanded my limited understanding of research methods." Still another student wrote, "It felt good to be a part of the drive and I was proud to present our findings." When asked about negative aspects of the project, students were concerned about an unequal distribution of the work and the amount of time that the project took to complete, realistic concerns for a group project. In addition to students' self-reports, the project also practically impacted their participation in research. Of the 10 team members, two applied for the college's six summer research fellowships, which one received. Another two team members designed independent studies for the semester following the project. The club president accepted a paid position as a research assistant on another project.

Discussion

The purpose of the present study was to explore a technique to encourage students to participate in research and to help students become comfortable with and interested in the process of conducting research. Most students working on a service project through the Psychology Club were willing to participate in a research project. Overall, students generally reported that the experience was a good one and, indeed, several students followed the present project with more involved projects. Therefore, it appears that the Psychology Club may be a good avenue for introducing students to research, particularly those students who would not otherwise seek such opportunities.

Although the present study involved the Psychology Club, this type of research project could easily be expanded for a variety of disciplines or settings. Potential projects

could be either experimental, quasi-experimental, or descriptive in nature and could explore questions of either local or more broad interest. For example local interest projects could include a survey of majors or recent graduates to assist the faculty in evaluating a program; an examination of campus crime statistics and potential correlates; a survey of library use; or field observations of people, animals, or the environment.

Experimental and quasi-experimental studies and those of broad interest are obviously more discipline-specific, however, the present study may help generate a few guiding principles. When students serve as research assistants for faculty members or conduct independent studies, the tasks are clearly defined from the start for each student. Because the present project involved a group of students all beginning research at the same time and designing the project together, the role of each student was less clear, with the exception of the student leader. As a result, some students were concerned about the unequal distribution of work within the group. One possible solution to this problem would be to create a written description of the project and each students' role in it for all involved to sign. Thus, each person would know what to expect as soon as possible in the project development phase. Such a description would reduce anxiety by letting students see that the project was not overwhelming and would also reduce tensions between students by laying out clear expectations.

Another lesson from the present study is that the design of a project for the Psychology Club may be somewhat different from other research projects. In conversations, several club members reported that they liked the time-limited nature of the project. That is, because the bone marrow typing drive lasted a day, they had only that amount of time to recruit subjects for the donor-group. Non-donors were also recruited

quickly to avoid potentially confounding factors. Although these recruiting decisions were made in the interest of the integrity of the study, students reported that they liked the fast pace and the ability to see results quickly after all of the time that they had spent in preparation. Unlike many studies that take time to complete, academic club projects designed to introduce students to research may be more effective if their schedules are clear from the beginning and fairly short-term, although further research on the impact of the research schedule on attitudes should be conducted.

Having a student leader for the project may be a benefit as well. In this case, an advanced, motivated student managed many of the organizational details and ran some of the planning meetings. For the student, this gave her an experience in leadership not found in most undergraduate independent studies. It also meant that she had to fully understand all aspects of the project to such a degree that she was able to explain them to other students, helping to assure a good learning experience. For the advisor, the student leader was the contact person for the team, saving a great deal of time in what could have been an all-consuming project.

Enthusiasm may be enhanced by the opportunity to present the work to the college community and to the department. Students reported a sense of pride in creating work that others would read. Also, because all ten names were listed on the poster, faculty in the department became aware of a group of students whose interest in research they could encourage. Although not every college has a forum for presenting student research, hanging a poster in a hallway could provide a capstone to the research project.

Although supervising a group of novice researchers requires considerable time and effort, it is clearly worthwhile. Students' improved attitudes toward research as a result of

the present project indeed suggest that the Psychology Club can be a good avenue for introducing students to research. With a well-planned project, working with a research team can be a rewarding experience for both advisor and students.

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Table 1

Research Team's Assessment of the Project (N = 8)

Question	Mean	S.D.
1. How much do you feel the present study contributed to your understanding of how to conduct research? (1= Very Little; 7 = Very Much)	5.62	1.84
2. Did the present study change your attitude toward conducting research? (1= For the Better; 7 = For the Worse) *	4.25	1.17
3. Is research more boring or more interesting than you had anticipated? (1 = More Boring; 7 = More Interesting)	5.63	1.06
4. Do you expect to do research again in the future? (1 = Definitely; 7 = Never) *	4.87	1.81
5. Has this [your expectation of doing research in the future] changed as a result of working on the Psychology Club Research Team? (1= Less Likely to Do Research; 7 = More Likely)	5.00	1.20
6. Was your participation in this study more or less positive than you had expected? (1 = More Positive; 7 = Less Positive) *	4.62	1.60
7. Based on what you thought before the project, how scary did you think research would be? (1= Very Scary; 7 = Not at All Scary)	3.38	1.85
8. Based on what you think now, how scary is research? (1= Very Scary; 7 = Not at All Scary)	5.23	1.38
9. Was working on the poster a valuable experience? (1= Yes; 7 = No)*	4.00	2.00
10. Would the project have been better, worse, or not different at all if it had not had a service project component to it? (1= Worse; 7 = Better)	3.75	0.71
11. Would you have been more or less likely to work on the research project if it had not been tied to a service project? (1 = Less Likely; 7 = More Likely)	3.75	0.71

Note. Items were completed on a one to seven scale in which higher scores indicated more positive responses. * Items 2, 4, 6, and 9 were reverse-scored, but scores have been inverted for this table for consistency.

"TEACHING DEVELOPMENTAL PSYCHOLOGY: PRACTICAL APPLICATION AND UNDERSTANDING OF MAJOR DEVELOPMENTAL THEORIES."

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Presented at 14th Annual Conference on Undergraduate Teaching of Psychology: Ideas & Innovations, Ellenville, NY, April 2000.

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ABSTRACT:

Developing a strategy for teaching an undergraduate child development course that incorporates using the various developmental theories in real time/life situations. This is encouraged by having the students prepare a developmental profile of a child, which is based on their individual observations and recordings of the behavior of a child in a naturalistic setting. The focus of the assignment is to check the students understanding and effective application of the studied developmental theories.

TEACHING CHILD DEVELOPMENT BY C. N. JONES

COURSE TITLE: Child and Adolescent Development

An undergraduate survey course geared to teach students the factors that influence child development - focusing on prevailing personality, social, moral, cognitive, physiological, etc. - theories and principles.

COURSE STRUCTURE:

This course is structured to have a dual approach, namely:

I. Expansion of psychological knowledge

A. Teach the various theories employed by practioneers in the child development field.

B. Help the students become aware of the role unbiased observation and recording of behavior has in determining accurate developmental placement of children.

C. In order for the student to gain an opportunity to see the globality of developmental theories by cross-cultural comparisons the first 47 chapters in "Roots: A saga of an American Family," are assigned and the student is required to answer specific questions.

II. Course Goals:

A. Involve the student in observatory exercises to increase their knowledge of child behavior, the environments influence on the observed behavior, and what the behavior reveals about the child's developmental level.

B. Have each student prepare a developmental profile of a child, using unobtrusive naturalistic observations, based on the amassed data from their observations.

C. The major thrust of this assignment is to increase the students' knowledge of the developmental theories and the practical use of the aforementioned in real life situations.

III. Course structure:

A. The core of the course is Assignment of a standard Child Development textbook.

B. Assign "The Lord of the Flies," by Golding. Allow each student to pick one of the three main characters (Ralph, Piggy, Jack) as a client.

C. The first step is the preparation of an observatory worksheet for the recording of the client's behavior.

NOTE: Sample worksheet and suggested analytical steps issued to students.

SAMPLE FOR DATA COLLECTION:
(Naturalistic Observation)

CASE STUDY WORKSHEET
(Sample Format)

DEMOGRAPHICS:

NAME:	AGE:	GENDER:	ETHNIC IDENTITY

OBSERVED BEHAVIOR	POSSIBLE DEV. THEORY	DEFINITE PLACEMENT

D. The second step is to analyze the behavior along theoretical appropriateness. Refine the analysis within the theoretical framework for placement of the client at the correct developmental level, (stage, sub-stage, etc.)

E. Upon completion of the above steps the student must prepare a concise development Profile on the chosen client, supporting each placement. The profile should be highly structure along theoretical section.

NOTE: Sample profile format issued to each student that delineates the content that should be addressed in each section of the profile. Purpose of the format is to focus student's writing to a single developmental facade.

DEVELOPMENTAL PROFILE DEVELOPED BY C. N. JONES

OUTLINE:

I. Identification of client and information sources:
II. Physical description of client:
III. Social behavior:
IV. Personality development:
    A. Psychoanalytic dimensions
    B. Psychosocial dimensions
    C. integrated perspective
V. Cognitive development:
VI. Moral development:
VII. Summary of client's profile:
VIII. Assignment comments and suggestions:
    (Optional) Student evaluation of assignment.
    Statement: Do not identify self. Will not impact on grade.

F. After submissions of the profile conduct a class discussion the three clients, the accuracy of placement, and the impact of the assignment on their understanding of the developmental process.

N.B. The choice of the book "The Lord of the Flies." was decided upon because of the graphic descriptions of child behavior and the uniformity provided the professor to check the accuracy of developmental placement against his/her knowledge of the characters.

Running head: Distance-learning

Distance Perception:

A Comparison of In-Class and Distance-Learning Psychology of Perception Classes

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Abstract

Fifty students were randomly assigned to take a perception class either in a traditional lecture class or in a distance-learning class in which the students attended class only to take tests. Both groups of students had full access to a web site designed to aid both groups of students. The results failed to suggest that the students in the distance-learning condition performed better or worse in the course than the lecture students. The distance-learning students found the following aspects of the web site more useful than the lecture students: ways of contacting the instructor, online activities, and the ability to study wherever and whenever the student wanted. However, the distance-learning students disliked the following aspects of the course more than lecture students: the perceived increase in workload, ease of falling behind, inability to interact with their peers, and the technological / impersonal nature of the course. These results could be used to design better distance-learning courses. Finally, two personality variables, agreeableness and a measure of abstract vs. conceptual thinking were predictors of success in the distance-learning condition, but not in the lecture condition. The more agreeable the distance-learning student was and the more abstract their thinking was, the higher their number of points in the class tended to be. This information might be useful for predicting whether a student who might succeed in a lecture course might not succeed in a distance-learning course. The information might also be used to find interventions to aid distance-learning students who are at-risk of failure due to the nature of the course.

A Comparison of In-Class and Distance-Learning Psychology of Perception Classes

Distance-learning is an increasingly common alternative to in class learning. Many have hailed distance-learning, and its anytime, anywhere for anyone convenience, as the next major innovation in higher education. Yet, for all of the hype and promised benefits of distance-learning, there remains many fundamental questions which need to be answered before heading down the path of this latest trend: Can students in distance-learning courses perform as well as, or better than those in a traditional lecture course? Can the learning experience be as full and as enriching for distance-learning students compared to the lecture students? Can we use personality variables to predict which students will benefit from a distance-learning environment or from a lecture environment? Is distance-learning cost effective?

These questions have been asked numerous times before. Russel (1999) summarizes 355 studies that claim no reliable difference in performance between distance-learning and in class students. Why ask the question again? Merisotis and Phipps (1999, p. 14) give us the answer: "A closer look at the research, however, suggests that it may not be prudent to accept these findings at face value. Several problems with the conclusions reached through this research are apparent. The most significant problem is the overall quality of the original research is questionable and thereby renders many of the findings inconclusive." Most of Russell's 355 studies lack random assignment of participants to either the distance-learning or the lecture conditions. Without random assignment, subject variables will invariably be confounded with the treatment, which will prevent sound conclusions from being made.

In the few studies that have used random assignment, other confounds often exist. Consider, for example, Schutte (1997). Schutte randomly assigned 16 students to a distance-learning section and 17 to an lecture section of a sociology statistics class. But then he made the

distance-learning students do many things that the lecture students were not allowed to do. Only the distance-learning students generated weekly statistical reports, responded to an on-line discussion twice a week, and had an on-line chat with instructor once a week. Both groups had the same assignments. As should be no surprise, with the additional work and learning experiences, the distance-learning students out performed the lecture students by approximately 20% on each exam. But is this large difference due to distance-learning? Or could it be due to the additional activities in which the distance-learning students participated? One cannot answer this question.

The primary purpose of the current experiment is to attempt to provide, using a soundly designed experiment, a preliminary answer to the question of whether distance-learning students can perform as well as lecture students. Students were randomly assigned to the two sections of the course and had equivalent learning experiences except that one group attended class and listened to the lecture and the other did not. The learning experiences are summarized next.

Nature of the Class / Web Site

The web site contained many resources to aid both the distance-learning students and the lecture students. The resources can be conceptually categorized into three groups with some overlap between the groups. The first group dealt with communicating with the instructor and with students. Included in this group of web pages was an address book listing the student's names and email addresses. A web-based chat room for student-to-student chats was always available and the instructor monitored another chat room for student-to-instructor chats during specified office hours. This group of web pages also contained an email link to the instructor and a form-based means of sending messages to the instructor. Finally, there were three threaded discussion groups (i.e. network news) which were web accessible. One of the

discussion groups primarily contained announcements from the instructor to the students. A second discussion group allowed students to post questions that the instructor and other students could respond to. The third discussion group consisted of questions that the instructor might ask the lecture group during lecture and the students could respond to those questions.

A second category of web pages contained the lectures. Each lecture consisted of a PowerPoint© animation file which could be viewed full screen. These files were also used in the lecture condition. For students who did not have access to the PowerPoint animation player, the lectures were also available as static images that were viewable by all major graphical web browsers. The PowerPoint slides were condensed into Microsoft Word documents that were also available on the web site. Finally, each lecture included a summary page that listed the key points of the lecture. Copies of old exams were also available online.

The third category of web pages was activities. One set of activities was interactive programs that demonstrated concepts discussed in the lecture. For example, one activity showed the receptive field of a retinal ganglion cell. The students could move an edge (a change in contrast) over the receptive field in various orientations and locations in order to see how the cell responded to that particular stimulus. The students could also test their knowledge of each lecture by using the online quiz program Mentor. Mentor asks many types of questions and provides feedback about the correct answer when the student responds incorrectly. As discussed above, each lecture also had a threaded discussion group that included questions that the students could respond to.

Hypotheses / Questions

This study had three main goals. First, we were interested in whether students in a distance-learning situation could perform as well as the students who attended a lecture. While

many studies have addressed this issue, few have used random assignment of participants to conditions. Without random assignment, it is difficult to draw firm conclusions because the people who select one condition are obviously different from the people who select the other condition (that is, they have at least selected to be in different conditions.) Without random assignment, it is impossible to say whether it is the differences among the individuals or the difference in the treatment that caused (or failed to cause) an effect. But based on previous research, it is predicted that the distance-learning students will perform as well as the lecture students in this course.

A second goal is to determine if there are predictors of success in a distance-learning course. Personality traits, learning style, and grade point average (GPA) as a gross measure of intelligence will be looked at to see if they predict success in the distance-learning condition. If some of these variables are predictors of success in the distance-learning condition, but not in the lecture condition, then this information could be used to caution potential distance-learning students that their academic performance might suffer. It could also lead to interventions to aid the distance-learning students.

The third goal of the study is determine which aspects of the course the students found useful and which they disliked and if the likes and dislikes are different for the distance-learning and lecture conditions. These results could offer guidance for the design of distance-learning courses.

Method

Participants

Five males and 45 females participated in the study. Each participant signed an informed consent prior to enrollment that explained that they would be randomly assigned to either the

distance-learning or the lecture condition. There were 24 students who completed the distance-learning condition and 26 students who completed the lecture condition. The students were initially matched on GPA. Two additional students in the distance-learning condition failed to complete the experiment and their data are not included in the analysis. One dropped the course after taking the mid-term exam. Because of time constraints due to a new job, the other student never accessed the web site and never took any exams. This student subsequently enrolled in the distance-learning section of the course offered the following semester. The data from one additional student in the lecture condition is not included in the analysis. Due to medical problems, the student did not take the third exam. All of the students were treated in accordance to the Ethical Principles of Psychologists and Code of Conduct.

Design

Students were randomly assigned to either the distance-learning or lecture condition. All students had full access to the web site. The lecture students were required to attend class and were allowed two absences during the semester. The lecture students were told that additional absences would result in a 20 point reduction in their grade for each subsequent absence. This policy was not enacted, but was designed to motivate lecture students to come to class. The distance-learning students were forbidden from attending class except to take exams. All students took the same exams at the same times.

The primary dependent variable was the total number of points earned in the class. Additional dependent variables are summarized in Table 1.

Materials

Kolb's (1985) Learning Style Inventory (LSI) was administered at the beginning of the semester. The LSI has 12 sentences, each with four endings. Each ending is to be rank ordered

as to how similar it is to the student. For the purposes of this study, the LSI provides two measures: AC – CE percentile and AE – RO percentile. The AC – CE percentile scale measures how abstract vs. concrete a person's thinking is. Higher AC – CE percentile scores indicate more abstract thinking. The AE – RO percentile scale measures how active vs. reflective a person's thinking style is. Higher AE – RO percentile scores indicate more active thinking.

Costa and McCrae's (1991) NEO-FFI, Form S was also administered at the beginning of the semester. The NEO-FFI Form S has 60 questions with five point Likert scales. The NEO-FFI Form S provides a T score for each of the five personality factors: neuroticism, extraversion, openness to new experiences, agreeableness, and conscientiousness. T scores have a mean of 50 and higher T scores indicate larger amounts of that personality trait.

An end-of-the-semester questionnaire was developed. Its contents are summarized in Table 1.

Each of the four exams were worth 100 points and consisted of five sections. The first section contained a diagram of part of the sensory system (e.g. the eye) and the students had to label the various parts. There were 11 or 12 parts on each diagram and each part was worth 1 point. Students were always aware of which diagram would appear on the test. The second section was matching. Nine or ten terms were given with approximately 18 definitions or characteristics. The students had to match the term to the appropriate definition or characteristic. Each term was worth 2 points. The third section contained 15 multiple choice questions, each with four options. The students had to select the one, best option for each question. Each multiple choice question was worth 2 points. The fourth section contained 10 sentence fragments and the students had to fill in the blank with the correct term or word. Each question was worth 2 points. The final section consisted of two essay questions, each worth 10 points.

The nature of the web site was described in the introduction.

Procedure

The experiment was conduced during two semesters. The class during the two semesters was as identical as possible with the following exceptions. During the first semester, the class met twice a week with each class lasting 75 minutes; during the second semester, the class met three times a week with each class lasting 50 minutes. Different tests were given during the two semesters. The computer lab that was reserved for the distance-learning section was different, but functionally identical during the two semesters. The classroom used by the lecture students was different, but functionally identical during the two semesters.

During the first day of class and prior to learning which condition they had been assigned to, the students filled out the LSI, the NEO-FFI Form S, and were asked which condition they preferred to be in, and the grade (A, B, C, etc.) they expected if they were assigned to the distance-learning condition and to the lecture condition. Next, the students were informed which condition they had been assigned to. The remainder of the day was spent in the computer lab demonstrating various aspects of the web site.

Lectures were presented to the lecture group. The classes were largely lecture format with occasional discussions. At four roughly equally spaced points throughout the semester, students in both conditions met simultaneously in the lecture classroom to take the exams.

After taking the final exam, the students filled out the end-of-the-semester questionnaire and were given a debriefing sheet.

Results

Effect of Lecture vs. Distance-learning

A 2 X 2 between-subjects analysis of variance (ANOVA) was used to determine if the number of points in the class was different for the different semesters, or for the different conditions. The mean number of points in the class for the winter 1998 students was 310.0. For the winter 1999 students, the mean number of points in the class was 320.1 points. Consistent with the instructor's attempt to keep the two semesters as similar as possible, the ANOVA failed to reveal a main effect of semester, $F(1, 46) = 0.880$, $p = .353$, $\alpha = .05$, $MSe = 1403.550$. The mean number of points in the class for the distance-learning condition was 315.2. The mean number of points in the class for the lecture condition was 314.9. Consistent with the prediction that the distance-learning students could perform as well as the lecture students, the ANOVA failed to reveal a main effect of condition, $F(1, 46) = 0.001$, $p = .980$. The observed statistical power of this test was .050. Figure 1 shows the mean number of points in the class for each semester for each condition. The ANOVA failed to reveal an interaction of semester and condition, $F(1, 46) = 0.048$, $p = .827$.

Predictors of Success

Separate multiple stepwise regressions were performed for the distance-learning and lecture conditions to see if any of the "psychological variables" predict the number of points in the class. "Psychological variable" is operationally defined here as the personality variables (neuroticism, extraversion, openness to new experience, agreeableness, and conscientiousness T scores as measured by the NEO-FFI Form S), learning style variables (AC-CE (abstract vs. concrete) and AE - RO (active vs. reflective) percentiles as measured by the LSI), and a gross measure of intelligence, GPA. For the lecture condition, only a person's GPA entered into the regression equation, $R = .649$, $F(1, 23) = 16.740$, $p \leq .0005$. For the distance-learning condition, three variables entered the regression equation: GPA ($R = .686$, $F(1, 22) = 19.597$, $p \leq .0005$),

agreeableness ($R = .785$, $F(1, 21) = 16.839$, $p \leq .0005$), and AC - CE ($R = .831$, $F(1, 20) = 14.869$, $p \leq .0005$).

Attitudes Toward the Class

Several questions on the end-of-semester questionnaire addressed the student's attitudes toward the class. t-tests were performed on several of these questions to determine if the students in the distance-learning condition had similar attitudes to those in the lecture condition. Table 2 summarizes the results of these tests.

Another section of the end-of-semester questionnaire asked students to indicate which aspects of the class they found useful and which aspects of the class they disliked. The results of these questions were analyzed using a χ^2 test of independence for each variable by condition (distance-learning vs. lecture.) The results are summarized in Table 3.

Discussion

There is little evidence that the students in the lecture condition outperformed the students in the distance-learning condition. If one is willing to accept the null hypothesis, there was no difference in the number of points earned in the lecture and distance-learning conditions for these particular students in this particular class. Whether these results would generalize to students in general is not clear because all students who participated were willing to be randomly assigned to the distance-learning condition. Students who were unwilling to be assigned to the distance-learning condition did not enroll in the course, and these students may be different and have performed differently from the students who did sign up for the course. For example, the students in the course were significantly more extraverted than the population at large (mean $T = 57.08$, $t(49) = 5.215$, $p \leq .0005$) and were significantly more open to new experiences than the population at large (mean $T = 57.30$, $t(49) = 6.352$, $p \leq .0005$.) However, these factors did not

enter into the regression equation that predicted the number of points earned in the class. More importantly, the students in the distance-learning condition were similar to the population in general for the factors that did enter the regression equation for success in the distance-learning condition (agreeableness: mean T = 50.56, $t(49) = 0.353$, $p = .726$; AC - CE%: mean = 47.82, $t(49) = -0.484$, $p = .631$).

Just because there is little evidence that distance-learning students earned a different number of points than the lecture students does not imply that the distance-learning experience is equivalent to the lecture experience. Even though there was no statistically reliable difference in the self-reported number of hours studied, the distance-learning students more strongly believed that they could have studied less in the other condition and received the same grade than the lecture students. Thus, the general impression among these students is that distance-learning requires more effort than attending lecture. The distance-learning students also reported that their grade probably would have been approximately a third of a letter grade higher if they had been in the lecture condition, and the lecture students reported that their grade probably would have been approximately a third of a letter grade lower if they had been in the distance-learning condition. Yet, there was no statistically reliable difference between the distance-learning and lecture groups in the self-reported amount learned, or the self-reported amount they believe they would have learned if they were in the other group.

Even though the student's concerns about the distance-learning condition are not strongly supported by their self-reported behaviors and beliefs, these concerns may keep some students from enrolling in a distance-learning course. Thus, to ensure a successful distance-learning experience, the course should be designed to help alleviate these concerns, perhaps by openly

addressing them at the beginning of the class. Presentation of these results, or similar ones, could help alleviate distance-learning student's concerns.

Which aspects of the course did the distance-learning students find useful? To a large extent, the answer is the same as it is for the lecture students – access to lecture notes, summaries (key points) and old tests. That is, students are students whether they are in a classroom or someplace else. However, the usefulness of some aspects of the course depended on whether the student was in the distance-learning or lecture condition. For instance, most of the lecture students found face to face interactions with the instructor useful. This was not an option for the distance-learning students. The distance-learning students found the various ways of contacting the instructor useful. The experience of the distance-learning students may be enhanced if two-way video conferencing were available with the instructor. This technology is becoming increasingly available and affordable. Most of the lecture students also found listening to the lectures useful. Again, this was not an option for the distance-learning students. This argues that recordings of the lectures should be available to the distance-learning students, perhaps through streaming media technology on the web. More distance-learning students found the online activities to be useful than the lecture students. Especially for the active learner, any distance-learning course should be equipped with as many activities as possible. Finally, the often-cited advantage of distance-learning – the ability to study anytime, anywhere – is supported by this study. More distance-learning students than lecture students reported these aspects as useful.

There were also several aspects of the course that more distance-learning students disliked than the lecture students. More distance-learning students found that it was easier to get behind than lecture students. This may be an even larger problem in a self-paced distance-learning course than in this course where all students had to take the exams at the same time.

The distance-learning students were also more likely to state that the course took too much time than the lecture students, even though the amount of time spent studying was not statistically reliably different between the two groups of students. The distance-learning students were more likely to report that they disliked the inability to interact with their peers than were the lecture students. This is particularly disturbing because the web site offered many ways for the students to interact. It included: an address book of the students in the class with email addresses and phone numbers, a chat room dedicated to the students, and discussion software for the students to ask questions, respond to questions and respond to other student's responses. Even though the students had many opportunities to interact with each other, they did not utilize them fully and then disliked this aspect of the course. Future distance-learning courses should make special efforts to encourage the students to interact electronically, perhaps by having scheduled "events" such as study sessions, chit-chats, or video teleconferencing. Finally, more of the distance-learning students than lecture students disliked the technological / impersonal nature of the course. Again, special emphasis on making the course more personal should be made. In addition to the suggestions listed for increasing student interaction, to make it more personal the course could include banner "ads" that told jokes or showed cartoons related to the course content. The dislike of technology may be a significant problem because distance-learning courses are often delivered over the web, or at least make significant use of technology. This aspect may limit the number and type of students who are willing to enroll in a distance-learning course.

In the minds of the students, do the advantages of the distance-learning course outweigh the disadvantages? The answer may be a qualified "Yes." The mean response of the distance-learning students to the question "I would take another class that was presented in this format if

I had the opportunity" was 3.67 on a 5 point scale where 3 represented "undecided" and 4 represented "agree." This value was reliably different from the undecided response ($t(23) = 2.713$, $p = .012$.) Thus, the distance-learning students seem to believe that the advantages outweighed the disadvantages. However, the mean response of the distance-learning students to the question "I would recommend the distance-learning section of this class to my friends" was 3.125 (on the same scale as before.) This value was not reliably different from the undecided response ($t(23) = 0.549$, $p = .588$.) This may reflect the student's awareness of the disadvantages (either real or perceived) of distance-learning, and an unwillingness on their part to expose their friends to these disadvantages.

What qualities of a student predict success in a distance-learning course? For these students, GPA was the best predictor of the number of points earned in the class, explaining approximately 41% of the variability in the number of points in the class. In other words, good students tend to do better in distance-learning classes than do poor students. Since GPA also entered into the regression equation for the lecture students, it probably cannot be used as a means of determining which students would succeed in a lecture course but not in the distance-learning course. Agreeableness also accounted for an additional 14% of the variability in the number of points earned by the distance-learning students. Finally, the learning style variable AC - CE (abstract vs. concrete thinking) explained an additional 8% of the variability. Neither agreeableness nor AC – CE entered into the regression equation for the lecture students, so these variables may allow us to predict who may not succeed in the distance-learning condition but would succeed in the lecture condition. In particular, as the students become more agreeable and their thinking becomes more abstract, their chances of success in the distance-learning section

increased. Perhaps interventions can be designed to encourage abstract and agreeable thinking in students who enroll in distance-learning courses.

My experience as a distance-learning facilitator has been rewarding. At the same time, the course has taken an enormous amount of time to set up and still has much room for improvement. If you are considering offering a distance-learning section of a course, or if your administration is pushing you in that direction, then you should start early and gradually build the course. This course has followed a natural progression with each step taking about a semester to make – from overhead transparencies, to PowerPoint presentations, to putting the PowerPoint presentations on the web, to adding activities, threaded discussions and other aspects of the web site, to finally making the leap and offering the course as a distance-learning experience. While the authors have a technological tendency, have been an early adopters of technology and do not mind getting cranky software to work, those who follow will find the steps easier as technology makes each step simpler to perform. For example, most presentation programs now offer an easy option to save the presentation as a set of web pages and Microsoft offers a free, low end, and easy to use web server that can run on a person's desktop computer. While the technology makes it easy to put together a web-based course, we cannot forget that the basic principles of teaching should not be replaced with the hope that technology will make up for poor teaching practices.

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Table 1

Dependent Variables

Variable Name	Description	Questionnaire
Preferred Condition	Before learning what condition they were in, whether the student preferred to be in the distance-learning or lecture condition	Pre-questionnaire
Expected Grade If in Distance	Before learning what condition they were in, the final grade the student expected to receive if they were assigned to the distance-learning condition	Pre-questionnaire
Expected Grade If in Lecture	Before learning what condition they were in, the final grade the student expected to receive if they were assigned to the distance-learning condition	Pre-questionnaire
Neuroticism	The neuroticism T-score	NEO-FFI, Form S
Extraversion	The extraversion T-score	NEO-FFI, Form S
Openness	The openness to new experience T-score	NEO-FFI, Form S
Agreeableness	The agreeableness T-score	NEO-FFI, Form S
Conscientiousness	The conscientiousness T-score	NEO-FFI, Form S
AC-CE	The AC-CE percentile rank (abstract vs. concrete thinking)	Kolb's LSI
AE-RO	The AE-RO percentile rank (active vs. reflective thinking)	Kolb's LSI
Hours Per Week Spent Studying	The self-reported number of hours spent studying per week	End-of-semester
Study Less To Get Same Grade If in Other Condition	The self-reported belief that the students could have spend less time studying in the other condition and still received the same grade	End-of-semester
Learned As Much As If in Other Condition	The self-reported belief that the student learned as much as he or she would have if they had been in the other section of the course	End-of-semester

Grade If in Other Condition	The number of letter grades higher or lower that the students believed they would have received if they had been in the other condition	End-of-semester
Take Another Class in the Same Format	Whether the students were willing to take another class offered in the same format	End-of-semester
Recommend Distance-learning Section of This Class To Friends	Whether the students would recommend the distance-learning format to their friends	End-of-semester
Learned a Great Deal	Whether the students believed they learned a great deal from the course	End-of-semester
Liked Class	Whether the students liked the class	End-of-semester

Table 2

Results of comparing several of the dependent variables across the distance-learning and lecture conditions.

Question	Distance-learning N	Distance-learning Mean	Lecture N	Lecture Mean	t(48)	p
Hours per week studying	24	2.44	26	3.31	-1.550	p=.128
If I had been in the other section, I would have had to spend less time studying to get the same grade[a]	24	3.29	26	1.81	5.415	p≤.0005
I feel that I learned as much as I would have if I had been in the other section of the course[a]	24	2.71	26	2.73	-0.078	p=.938
Grade if in other section[b]	24	.375	26	-.385	5.417	p≤.0005
Take another class in the same format[a]	24	3.67	26	4.00	-1.239	p=.221
Recommend distance-learning section of this class to friends[a]	24	3.13	26	2.81	0.951	p=.346
Learned a great deal[a]	24	3.96	26	4.19	-1.102	p=.276
Liked class[a]	24	3.63	26	4.31	-3.094	p=.003

[a] Based on a five point Likert scale with higher numbers representing greater agreement with the question

[b] Based on the number of letter grades higher (positive number) or lower (negative number) the student expected to receive

Table 3

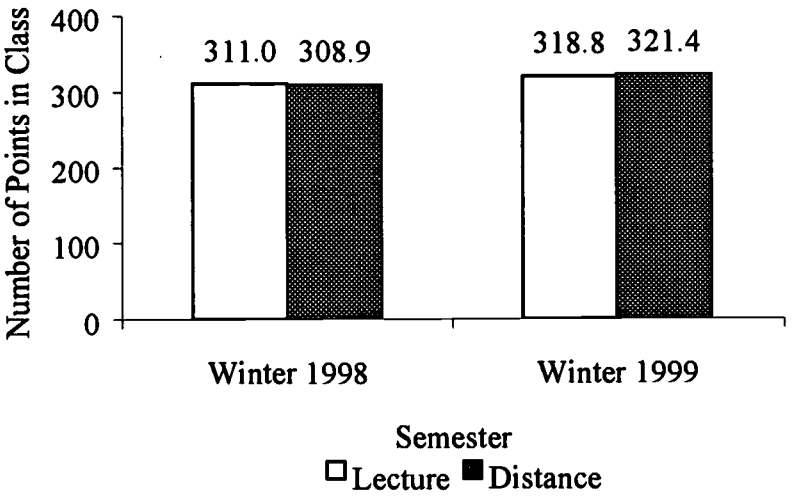
Do the Distance-learning and Lecture Students Find the Same Aspects of the Class Useful and Do They Dislike the Same Aspects of the Class?

Question	Observed Frequencies			$\chi^2(1)$	p
		Yes	No		
Useful-Face to Face Interactions With The Instructor	Distance	0	24	33.422	≤.0005
	Lecture	21	5		
		Yes	No		
Useful-Listening To Lectures	Distance	0	24	46.154	≤.0005
	Lecture	25	1		
		Yes	No		
Useful-Ability To Study When It Was Convenient	Distance	20	4	12.159	≤.0005
	Lecture	9	17		
		Yes	No		
Useful-Ability To Study Where It Was Convenient	Distance	16	8	6.443	=.011
	Lecture	8	18		
		Yes	No		
Useful-Accessibility of Instructor Through Email, Newsgroups, or Chat	Distance	14	10	3.848	=.050
	Lecture	8	18		
		Yes	No		
Useful-Mentor (online quiz program)	Distance	21	3	0.946	=.331
	Lecture	20	6		
		Yes	No		
Useful-Online Activities	Distance	11	13	4.059	=.044
	Lecture	5	21		
		Yes	No		
Useful-Online Lecture Notes	Distance	20	4	0.056	=.814
	Lecture	21	5		
		Yes	No		
Useful-Key Points	Distance	21	3	3.346	=.067
	Lecture	17	9		
		Yes	No		
Useful-Discussion Questions	Distance	6	18	0.721	=.396

	Lecture	4	22		
		Yes	No		
Useful-Old Tests Online	Distance	22	2	0.142	=.706
	Lecture	23	3		
		Yes	No		
Useful-Textbook	Distance	14	10	1.974	=.160
	Lecture	10	16		
		Yes	No		
Dislike-Easy To Get Behind	Distance	16	8	7.936	=.005
	Lecture	7	19		
		Yes	No		
Dislike-Takes Too Much Time	Distance	7	17	3.899	=.048
	Lecture	2	24		
		Yes	No		
Dislike-Computer Lab	Distance	6	18	4.638	=.031
	Lecture	1	25		
		Yes	No		
Dislike- The Classroom	Distance	0	24	0.942	=.332
	Lecture	1	25		
		Yes	No		
Dislike-The Impersonal / Technological Nature of Class	Distance	12	12	8.791	=.003
	Lecture	3	23		
		Yes	No		
Dislike-The Inability To Interact with Peers	Distance	10	14	7.898	=.005
	Lecture	2	24		
		Yes	No		
Dislike-Amount of Material Covered Is Too Great	Distance	11	13	0.063	=.802
	Lecture	11	15		
		Yes	No		
Dislike-The Conceptual Aspects of The Material Were Too Difficult	Distance	4	20	0.056	=.814
	Lecture	5	21		
		Yes	No		
Dislike-The Textbook	Distance	4	20	0.015	=.902
	Lecture	4	22		

Figure Captions

Figure 1. The mean number of points in the class for each semester and each condition.


Number of Points in Class
400
300
200
100
0
311.0
308.9
318.8
321.4
Winter 1998
Winter 1999
Semester
Lecture
Distance

The Innovation of Tradition

Ethan Gologor

For the last 20 years, I have taught psychology at a school with a student population that is roughly .1 *per cent* Causasian. But unlike most of my colleagues, I have never mentioned "multiculturalism" nor hoisted myself onto the academic bandwagon to applaud diversity. And I have resisted not because I'm unfamiliar with a variety of cultures--I spent a good deal of my life living and working in third-world countries as my older son who was born in Liberia can testify—nor because I necessarily oppose any attempt to introduce culture as a relevant research variable--I've conducted studies that have appeared in the Journal of Cross-Cultural Psychology as well as Culture and Literacy--but because I think it short-sighted. My political views, be they politically correct or incorrect, I do not offer to my students. To make things even worse, I haven't collaborated in collaborative education have distanced myself from distance learning and am not preparing to offer courses on line at any time in the foreseeable future.

I do like to think that many of my students, despite my being hopelessly out of date, become active learners and critical thinkers nonetheless. And if they do so, it is because they are introduced to traditional material that in traditional fashion carries its own weight. They respond because the substance itself, unameliorated, unadorned and unpoliticized, reveals its power and provides its own motivation to go further. Teaching the subject does not require ribald jokes nor contrived "relevance" nor even publishers' packages of instructional aids. It is

interesting because it has always been interesting. It conveys ideas about life that are universal. By definition, it is always relevant. Unlike the subject matter of geology or astronomy or even economics, psychological material, as I am always at pains to point out at the beginning, is all around us. If we become aware of our physical and social environment, and our own feelings, thoughts and interactions, we discover the omnipresence of psychological theory and findings almost immediately..

So without needing a rigid idea of where to begin, I have found myself talking during our first class of where people are sitting, of whether they came early or late, of why if I try quieting students in the hallway, the boys will react quite differently from the girls (illustrating that at the risk of being unpopularly discriminatory, we cannot be afraid of noticing differences; later on we will talk about the importance of discrimination in learning.) Theories, or at least hypotheses, are offered readily (even contradictory ones), the need for evidence becomes apparent, and the birth of scientific research, while not immediate, has become a twinkle in their eye. We might, in the course of this discussion, range from John Locke to John Watson, as I quote shamelessly in whatever language makes (and teaches) the point best. So students hear the famous "Give me a dozen healthy infants, and I will make of each of them"....a doctor, a poet, an addict, as well as the not-so-famous "Nihil es in intellectu quod non fuerit in sensu," and before long see the roots of philosophical Empiricism in Radical Behaviorism, learning something about intellectual history in the process.

But usually my strongest example of capturing students' interest comes from my series of lectures (dare I say it?), albeit with focussed discussion, on Freud. Despite the handful of paragraphs, at best, given

psychoanalysis by most introductory texts, I spend a good deal of time on it, explaining the structure of the theory, the evolution of psychotherapy, and the nature of its evidence.

Most students have of course heard of Freud. He's the one who said everything was sex and used cocaine. By the end of our weeks spent on him, many have become his strongest advocates. Not because he is right all the time, or even, according to many, right at all, but because he has provided the most powerful and wide-ranging of arguments, because he has revolutionized man's thinking about himself, and because he has touched every foundation of modern life, from literature to sociology to childrearing to advertising to criminal justice. While initially reacting scornfully to the sensationalism of the Oedipal crisis, students come to rethink their own relationships, their own development, their own "normalcy," their own conscious practices, their own choices, their own images. They soon can spot a rationalization or projection from 100 yards, and hear a *lapsus lingua* (especially the teacher's) as soon as it's uttered. And in discussing the criticisms of psychoanalysis, they also become aware, before accepting them, of similar criticisms raised against Copernicus and Darwin.

I maintain that it is this awareness which remains the goal of education, however seemingly innovative. We hear a lot about the "new student," the new technology, the revamped curriculum. I am reminded of an old tale I first read about in the American Psychologist, soon after returning from two years of teaching high school mathematics to Somalis (speaking of relevance! Here I was expostulating on the multiplying monomials by polynomials to nomads who would spend the afternoon

tending their sheep and camels in a scene straight out of the Bible). I will take certain licenses with the original story for the sake of time.

It seems that in ancient days, there was a tribe of people that lived simply and wanted for nothing. Their village was built by the edge of a crystal clear lake, which amply provided all the fish the inhabitants needed for food. Lush forests nearby supplied sufficient hemp plants from which the inhabitants fashioned the few garments they needed. Their only problem were sabre-toothed tigers that would gather near the edge of the village at night, but the fires the villagers would build to cook their food kept the tigers away.

For many a generation things stayed this way, and the elders would teach the young their basic principles--how to stand in the lake and scoop up the plentiful fish they needed; how to cut the hemp plants; how, when and where to build the fires to scare the tigers.

Then the glaciers came. The lake became frozen over, forcing villagers to cut holes in the ice to get any fish underneath, the forest disappeared forcing them to secure clothing by other means, and the tigers were replaced by bears, which were attracted rather than repelled by the fires.

But when it came to education, the elders taught the basic lessons as they always had--how to stand in the lake and scoop, how to cut hemp, how to scare tigers with fire. Finally, after many years, a group of students organized and issued a list of complaints about the curriculum, arguing that they didn't see the point of learning fish scooping when they could no longer scoop, of hemp cutting when there was no hemp, and of scaring tigers when there were no tigers.

The elders met and after long consultation issued their ruling. They said the curriculum would stand as it was because the purpose of Fish-

Scooping I was not to scoop fish but to learn how to secure food, and the purpose of Hemp-Cutting I was not to cut hemp but to learn how to fasten clothing, and the purpose of Scaring-Tigers-with-Fire I was not to scare tigers but to learn how to fend off ones enemies, and that these lessons were eternal and everlasting.

We have strayed too far from education's beginnings by our obsession with providing an environment which is always accommodating or entertaining. It is doubtless a sign of the times, a period when it is hard to maintain any authoritative position on anything. Having witnessed the evils of despotic authoritarianism, our enlightened institutions have become confused, espousing doctrines that seem to hold that the ultimate democratic goal is to value no one opinion over any other. But such a policy does no one any good in the long run. Not every player is a coach, nor orchestra member a conductor, nor student a teacher. If this new education serves anyone, it serves frightened educators more than students. Thus, returning to the "basics" is the most revolutionary route we can take in modern times.

Integrating Technology in the Psychology Curriculum: A Panel Discussion

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Abstract

Many universities are making large investments in technology in an effort to gain a competitive advantage, enhance their curricula, and prepare their students for the 21st century. With the explosion of technology-related resources now available, faculty must become educated consumers. This paper discusses several technology-based resources that have been used in a variety of psychology courses at Iona College. Specifically discussed are: (a) integrating computerized instruments in a psychological assessment course, (b) using *PowerPoint* technology in psychology major courses, (c) using the internet in introductory psychology, and (d) an assessment of the impact of using technology in the psychology curriculum.

Integrating Technology in the Psychology Curriculum: A Panel Discussion

Using computer-based technology, including internet resources, is rapidly becoming an essential element of college-level course work, as faculty strive to prepare students for the 21st century. Moreover, many universities are making large investments in their technological systems in an effort to gain a competitive edge, enhance their curricula, and prepare their students for the marketplace. With the explosion of technology-related resources now available, faculty must become educated consumers. This paper discusses several technology-based resources that have been used in a variety of psychology courses at Iona College.

Specifically discussed are: (a) integrating computerized instruments in a psychological assessment course, (b) using *PowerPoint* technology in psychology major courses, (c) using the internet in introductory psychology, and (d) an assessment of the impact of using technology in the psychology curriculum.

Computer-Assisted Psychology Assessment

Computer-assisted psychological assessment (CAPA) refers to the use of computers in the administration, scoring, and/or interpretation of psychological tests. The use of mechanical scoring machines for psychological tests can be traced as far back as the 1920s (Gregory, 1996). Today most major test publishers offer software packages designed to administer, score, interpret, and/or generate descriptive reports (Butcher, Perry, & Atlis, 2000).

As CAPA has become so prevalent in the field of psychology, it is important to introduce students to this practice. The following exercise is a hands-on activity designed to acquaint students with CAPA. This exercise can be used in introductory courses, any course that discusses psychological testing, such as theories of personality or tests and measures, and can even be modified for use in a graduate level course in psychological assessment. The activity requires the use of microcomputers equipped with a CAPA software package.

Activity for Undergraduate Courses. Students are first introduced to the psychological test and are given a description of what exactly the test measures. They are then asked to think about and write down how they would score if they were to take the test. For example, if the 16PF were used for this exercise, the students may be given a blank profile sheet and asked to plot out their profile. Requiring students to plot a profile for each subtest familiarizes them with the various components of the psychological test.

The psychological test is then computer administered, scored, and interpreted. This is an assignment that can be completed inside or outside of the classroom depending on the computer facilities available and the amount of time required for administration. Students are then asked to compare their hypothetical results with the actual results provided through CAPA.

Class Discussion. This exercise serves as a good segue for a variety of topics related to psychological assessment. Students can compare the actual results to their original estimates and

discuss the accuracy of the computer interpretations. Also, the topics of reliability and validity can be explored. For instance, students may be asked to think about whether the results would be the same if they took the test again two weeks later (test-retest reliability).

As a wrap up to this exercise, the advantages and disadvantages of CAPA can be discussed. Students may be asked why it is advantageous to have a computer administer, score, and interpret a psychological assessment. It is fairly simple to understand that this method is quicker, less costly, and scoring is error free. As for disadvantages, the equivalence of the computer version and the paper-and-pencil test must be questioned. Asking students if taking the computer version versus the psychologist administered version might influence their answers leads to understanding of the concept of response bias. Finally, ethical issues can be explored. For example, who is legally responsible for the computer interpretations? Should a person who is somehow harmed by CAPA seek recourse against the company who published the program, the psychologist who recommended the client take the test, or both?

Graduate Course Activity. This activity can be modified for a graduate level course. Students who are taking a course in psychological assessment may be learning how to administer, score, and interpret a psychological test. In addition, students may be asked to write a descriptive report based on the results they obtained. Once they have done this, they are asked to take the same test using a CAPA software package. In addition to serving as a segue for class discussion of various issues, this graduate course activity also serves another purpose. It allows students to compare their descriptive reports with the CAPA generated reports, and judge how well they did. For example, did the students report all significant scores and/or discrepancies between subtests?

Conclusion. Anecdotal reports indicate that students enjoy this activity as it adds variety to their courses. In addition, it gives students the opportunity to gather information about themselves. In sum, this is a hands-on activity that can be added to graduate as well as undergraduate courses for the purpose of introducing students to computer-assisted psychological assessment.

Using *PowerPoint* in Psychology Major Courses

By putting a new twist on an old assignment, an instructor can easily integrate technology into his or her upper level major courses. This assignment involves having students create *PowerPoint* outlines as part of their oral presentations of course-related journal articles. The pedagogical objectives that can be achieved include: (a) enhancing the quality of student presentations, (b) improving students' presentation skills, (c) developing professional skills to make students more marketable, and (d) increasing students' comfort level when they present.

The Assignment. Early in the term, one class period is devoted to providing an overview of *PowerPoint*. Some important points to share with students regarding how to create an effective outline include the following. (1) The amount of text on each slide should be kept to a minimum. (2) Large font size (e.g., 24 to 32 point) should be used. (3) Points should be shown one at a time, as they are discussed, to increase attention. (4) Using templates to design the slide

helps greatly. (5) Clip art, cartoons, sound effects, etc. add interest. (6) It is important for the presenter to talk to the audience not the screen.

In order to implement this assignment, equipment is necessary, but there are several options that will work. At a minimum, a PC with a regular monitor can work, although this is not ideal because the small size of the monitor makes it difficult to see the outline from all points in a classroom. A large monitor/TV screen connected to a PC is functional. A laptop PC and projector that can show the image on a screen is even better. Finally, a so-called "smart classroom," with a PC and ceiling projection system, is ideal. What ever type of equipment is used, the instructor should be prepared for "glitches."

Assessment of the Assignment. This assignment was evaluated in two ways. Students assessed the assignment from their perspectives as presenters and audience members. The instructor evaluated the students' performance not just to grade them but to also assess the usefulness of the *PowerPoint* technology. Students responded to a 7-item scale that assessed their opinions about the assignment. Students agreed that the assignment: (a) increased the quality of the presentations, (b) increased their understanding of the journal articles that were presented, (c) developed professional skills that will be useful in the future, (d) was a worthwhile activity, and (e) should be used in future classes. As compared with presentations done "the old way," the *PowerPoint* presentations were more well organized, showed evidence of greater preparation, were more interesting, and were more creative.

This assignment can be used in just about any undergraduate or graduate course that includes student presentations. An added bonus is that students can print their *PowerPoint* outlines and provide copies to the class to facilitate note taking and studying. In summary, this assignment is an effective way to integrate technology in the classroom, it is easy to implement, and it is useful for students.

Using the Internet in Introductory Psychology

The internet revolution did not leave the college classroom untouched. It is becoming commonplace for instructors to create web pages for the courses they are teaching. Some courses are taught entirely through the net. Moreover, some instructors prefer to use e-mail instead of the telephone to communicate with students.

Using web pages for distributing a course syllabus, outlines, and lecture notes has advantages in flexibility over distributing hard copy documents to students. The content can be corrected or updated anytime. The instructor who uses a web page for his/her course to provide lecture outlines and notes, can edit them right in the middle of class as the material is presented to students. Students can then access the updated web pages after class. Creating an hyper-text markup language [HTML] document itself is a pretty easy task. Most word processing programs, including Microsoft Word, have a "save as" option for HTML format. Finding "server" space and moving the HTML document to the server may not be as simple. A server is a computer that has a direct connection to the internet; files in the server can be accessed as a web page. Usually schools provide server space to instructors. Many internet service providers such as AOL or

MSN also provide server spaces to the subscribers. Free server space is available on the net also (www.geocities.com), but usually the web page will show their advertisement.

There are software packages that help instructors to use the power of the internet for teaching. Thomson's *Learning Web Tutor* program that comes with Kalat's *Introduction to Psychology* textbook integrates e-mail, web page posting, chatting (on-line discussion), class scheduling (students can sign up for a presentation date), grade posting, on-line testing, and more. Blackboard company's *CourseInfo* software has similar functions.

Electronic mail is another way that instructors can easily integrate technology in their teaching. E-mail can facilitate communication between instructors and students. With e-mail, communication need not be restricted to office hours. Students can send e-mail and instructors can reply at their convenience. An instructor can collect e-mail addresses of students and make announcements by sending a message to everyone at once. Students can send their papers as e-mail attachments.

One problem that may arise for faculty is related to academic dishonesty. Unfortunately, the internet had made it very easy for students to plagiarize material from web sources for their writing assignments. Fortunately, the internet also provides a tool to detect and fight plagiarism. For example, a web site such as http://newark.rutgers.edu/~ehrlich/plagiarism598.htlm lists various links that provide helpful information to control plagiarism. There are also software programs such as "EVE 2.2" that will search various web sites to find documents that match the any paper submitted by a student.

Learning with Technology: Measuring the Impact

In the past couple of decades there has been increasing pressure from students, parents, and administration to include more technology in almost every curriculum. While there are amazing anecdotes of successes and failures, remarkably little research has been done on what students actually learn from the instructional technology experience. Why should this be?

There are a few reasons. First, everyone is in a hurry to implement technology experiences as quickly as possible, and assessing what is actually learned takes time that just isn't available.

Less obviously, however, looking for actual learning effects from an instructional medium experience is complicated. There are so many different factors, and so many different things that can be learned from a single experience. So, often what gets studied are the "easy" aspects of the learning experience.

What, then, are the "easy" aspects of the learning experience to measure? The easy aspects are generally the articulated content of the learning experience: the results of a content analysis of the program materials, or the **declarative knowledge**.

But maybe this declarative content is not a very accurate picture of the actual learning that takes place. Maybe the actual learning is more of an emergent property of the learning experience that is less predictable and more complicated than this. It would be far too convenient if students learned exactly what we intended for them to learn.

It is a common misunderstanding that most learning is of this declarative type. Suppose a teacher wants a student to learn fractions, for example. So, the teacher gives the student a lesson on fractions. Then the teacher tests the student, to see if the student knows about fractions. But this is a very limited view of education, a very limited view of what it means to be a human being, and a very limited view of what it means to be a learning organism.

Non-declarative knowledge has been studied widely in the past fifteen years under several different names, including implicit knowledge, procedural knowledge. It turns out to be important for several reasons. First, research into amnesics by Larry Squire(Squire 1992), for example, has shown repeatedly that damage to the inferior temporal lobe can completely wipe out the ability to learn declarative knowledge, but that it is almost impossible to wipe out the ability to learn non-declarative knowledge. So, it seems to be a basic element of brain tissue. Second, we share the ability to learn non-declarative knowledge with all other organisms that have a nervous system. Cats, monkeys and even applyssia (sea slugs) are adept at learning non-declarative knowledge. So, it seems to have developed very early in the evolution of the brain. Third, non-declarative learning seems to occur even when it is unintended or unconscious. So, it seems that the brain cannot stop itself from non-declarative learning.

Clearly, it is foolish to ignore this ubiquitous form of learning.

Examining only the easy (declarative) learning involved is not enough, we miss a lot of what is really going on by ignoring the **non-declarative learning** involved in the instructional technology experience. What follows is a brief definition of non-declarative learning and a summary of two studies in which there were important differences between the results of assessing the declarative as opposed to the non-declarative learning involved in various instructional technology experiences.

The operational definitions of declarative and non-declarative learning used during the assessment of instructional technology learning experiences are as follows.

Declarative knowledge is the knowledge that can be identified by doing a content analysis of the programming material. **Non-declarative** knowledge is the effect that the instructional experience has on the learner's subsequent behavior.

Let's take a look at what may be missed by ignoring non-declarative learning.

Study One. Study one examined what students learn from using a computer model of a device as opposed to the device itself. Sixty third graders learned to use an abacus using a wooden abacus (a condition hypothesized to contain additional opportunities for non-declarative learning to occur) or a computer model of an abacus (a condition containing all of the declared

lesson content but with reduced opportunity for non-declarative learning to occur). Both groups had equivalent lesson content, equivalent explicit instruction, and equivalent practice time.

During the learning phase of the study the children were instructed in the use of the Chinese abacus and then were given time to practice what they had learned on the numbers between 1 and 30. Regardless of condition, each student heard the same explanation of how to use the abacus to represent numbers. Following the explanation and demonstration the students practiced what they had learned for about 10 minutes.

During the testing phase of the study the children were given two performance tests, one on numbers they had actually practiced already, and one on numbers beyond the practiced range. The performance tests were designed to assess what the students were actually able to do with their new abacus knowledge. That is, the performance tests assessed the non-declarative knowledge resulting from the instructional experience. Whether or not the student was able to answer questions about what he or she had learned, was the student able to produce numbers on the abacus? The proportion of problems solved correctly and the time spent solving the problems were both recorded.

In addition the students were given a pencil and paper recognition test. The recognition test was designed to assess whether the student could remember what the recent lesson was about. That is, the recognition test assessed the declarative knowledge resulting from the instructional experience. Notice that this is typically how learning is assessed in educational institutions. Whether or not the student was able to produce a correct representation on the abacus, was the student able to recognize a number that someone else represented? The proportion of problems solved correctly and the time spent solving the problems were both recorded.

No significant difference was found between the groups on the recognition test. This indicates that declarative learning was equivalent among the treatment groups.

However, on the performance tests, the proportion of problems correctly solved was significantly higher for the wooden abacus group than for the computer simulation group ($F_{1,28} = 12.36$, $p < .005$), and the amount of time spent was significantly shorter for the wooden abacus group than for the computer simulation group ($F_{1,28} = 4.77$, $p < .05$). This indicates that non-declarative learning was quite different between the two groups.

Study Two. Study two examined the impact of a recent technology upgrade on the Iona College campus. We were specifically looking for the widespread impact of having a campus "saturated" with technology. That is, rather than looking at specific learning following a specific course, we were looking for the impact, if any, on students at large.

In addition to using the usual self-report measures, such as satisfaction using the technology, ability to use the technology, and the success of their most recent technology-assisted learning experience, we also asked the students to actually perform one of four randomly selected tasks involving instructional technology. So, in addition to what they told us about their

experience (their declarative knowledge) we also measured what they could actually do (their non-declarative knowledge).

Once again, the results were very different for the two types of knowledge. Of the three self-report measures, none showed a significant difference from before the technology upgrade. However, the performance on the technology-assisted tasks showed significant improvement ($F_{1,139} = 10.883$, $p < .001$), with 40% of the students succeeding before the upgrade, compared to 68% after the upgrade.

As technological improvements in educational institutions become increasingly common and increasingly expensive, it is critical that the impact on learning be assessed. Traditional assessments involving recognition and self-report are not enough. In both of the studies used as illustration, the difference between the declarative knowledge assessments and the non-declarative knowledge assessments has been quite substantial. In study one there was no difference between learning from a computer simulation and learning from the real thing when assessed by a recognition test, but quite substantial differences were found when performance was assessed. In study two there was no difference on self-ratings before and after a two million dollar technology upgrade, and yet, when actual performance was assessed there was once again a substantial difference.

By ignoring the non-declarative learning involved we run the risk of missing the impact of technology entirely.

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