

Quality Enhancement Plan Final Report

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Data-Driven Authentic Research CAPSULES: Community Action Projects Utilizing Leadership and E-based Statistics

Introduction

This final report presents a summary of the activities, results, and implications of the 2007 Quality Enhancement Plan entitled “Data-Driven Authentic Research CAPSULES: Community Action Projects Utilizing Leadership and E-based Statistics. The report includes the following discussion areas: (a) Project Purpose and Description; (b) Overview of Project Outcomes; (c) Specific CAPSULES Activities; (d) Analysis of Data Procedures; (e) Summary of Results; and (f) Implications of the Findings. The project involved community agencies, UWF COPS graduate students, and QEP project staff.

Project Purpose and Description

The QEP project extends the quality of teaching and learning opportunities beyond the current practices of the COPS graduate program by focusing on the quality enhancement of instructional/learning strategies targeted at the Project Management (PM) domain. The project engaged COPS graduate students in managing, conducting, and delivering real world data-driven research community action projects utilizing leadership and e-based statistics skills spearheaded by the COPS research/educational statistics program. Project objectives include: (1) restructuring the COPS research/educational statistics courses to include active learning and authentic assessment; (2) providing opportunities for graduate students to engage in team-driven quantitative research projects prior to the thesis or dissertation experience with projects generated from community agencies/educational institutions; and (3) connecting graduate students with community action projects as research managers and presenters. Anticipated student outcomes include: increased cognitive and affective statistics, research, project management, and authentic assessment skills. The alignment of the proposed project with QEP goals is depicted in Table 1: Alignment of Project to QEP Goals.

*Table 1
Alignment of Project to QEP Goals*

QEP Goals	QEP Descriptors	Project Goals
Goal One	Improve student learning of knowledge, skills, and values relevant to PM	COPS graduate students will fulfill the role of community action research project managers.
Goal Two	Increase use of active learning and student engagement instructional strategies and related assessments for development of PM skill, knowledge, and values	Project will: <ul style="list-style-type: none"> (a) restructure and refine educational research and statistics courses to provide graduate students with increased active learning opportunities for engaging in hands-on real world experiences prior to their thesis or dissertation experience; (b) integrate authentic instruction and assessment practices into the graduate educational research and statistics program; (c) incorporate direct and indirect cognitive and affective authentic assessments into the teaching and learning of educational research and statistics.
Goal Three	Provide opportunities for faculty and staff development related to improving student learning of PM.	Project will incorporate professional development in authentic learning and assessment for faculty, staff, and community participants.

Overview of Project Outcomes

Specific student learning outcomes proposed by the project cohesively align with outcomes suggested by the Academic Learning Compact Project Management Domain and are presented in Table 2: Alignment of Proposed Project to ALC PM Domain.

*Table 2
Alignment of Proposed Project to ALC PM Domain*

PM Domain	ALC PM Domain Outcomes	Project Outcomes
Project Conceptualization	Selects and defines realistic problem to be solved; Identifies relevant resources and potential obstacles and Develops strategies execution in relation to constraints; Integrates discipline concepts appropriately and Identifies criteria for successful completion; Accurately assesses quality of plan.	Students engaged in real world community action research projects; planned and designed community action research projects according to specific project needs aligned with appropriate strategies and data analysis procedures/constraints; utilized research, statistics, leadership, and project management skills in the successful completion of quality research studies, and discussed and reported reflections relative to project design and planning activities.
Self-Regulation	Sets appropriate goals for completing project; Manages appropriate timeframe; Executes appropriate priorities; Shows flexibility by planning back-up strategies; Accurately identifies quality of individual process.	Students established time lines, appropriate strategies, statistical procedures, and identified specific alternative strategies and assessments for appropriately executing and communicating research project findings.
Team-work Skills	Completes responsibilities as team member; Practices appropriate ethical judgment; Contributes positively to task completion; Manages conflict among team members; Assesses quality of contribution accurately.	Students worked in teams on each of the community action research projects including cooperative meetings, managing research project planning, performing analyses, and presenting results.
Project Delivery	Delivers acceptable product on time; Effectively presents results using appropriate oral, written, and/or visual means; Responds effectively to feedback for process/product improvement.	Students delivered high quality research findings to appropriate community agencies using power point presentations and formal written reports.

Specific CAPSULES Activities

Specific Community Action Projects for Students Utilizing Leadership and E-based Statistics that have engaged COPS graduate students during the 2007 academic year include the community project activities depicted in Table 3.

Table 3
CAPSULES

Community Agency	CAPSULES Description with Number of Subjects
Independent Living for the Blind (Pensacola, Florida)	Profile analysis study of clients' attitudes toward independent living factors and demographic examination of agency services. (N=139)
Naval Oceanography Center (Gulfport, Mississippi)	Evaluation study of online training of navy personnel in oceanography and weather education programs. (N=67)
Baldwin County Schools (Baldwin, Alabama)	Descriptive study of ninth grade high school preparation academy outcomes and high school achievement data. (N=432)
Westgate School (Escambia , Florida)	Observational study of profoundly disabled students within multi-sensory educational environments. (N=50)
Pensacola Autism Society (Pensacola, Florida)	Autism intervention study of six week summer camp intervention education program. (N=60)
UWF Teacher Ready Program (Pensacola, Florida)	Evaluation study of UWF Teacher Ready program for preparing alternative certified teachers. (N=27)
UWF ICL Special Event (Pensacola, Florida)	Demographic profile analysis and evaluation synthesis study of educator audience for Harry Wong presentation at Pensacola. (N=1200)
UWF Doctoral Ed.D. Alumni Survey (Pensacola, Florida)	Descriptive survey study of doctoral alumni students regarding follow-up information and demographic assessment information. (N=30)
Santa Rosa County Schools (Milton, Florida)	Comparative study of student and teachers attitudes toward school characteristics of safety, service, technology, parent involvement, and social activities. (N=643)

Students enrolled in EDF 7407 (Educational Statistics II) in the spring and summer of 2007 (N=22) designed, implemented, managed, and completed the community-based projects identified in Table 3. Students worked in teams to develop appropriate planning and implementation tasks for completing the projects. Student teams were charged with visiting the appropriately selected agency (see Table 3) to discuss data collection procedures and to conceptually assess the purpose or hypotheses intended by the agency. After the agency visit, data collection, and planning phase, student teams organized their data and developed appropriate data files using SPSS software. Periodic large peer group discussions were employed between student teams for suggestions and feedback from respective teams regarding appropriate research hypotheses and statistical procedures for responding to the agency needs and for answering research questions determined plausible by the data set and nature of the study. Student teams performed appropriate statistical analyses for their project research hypotheses and defined purposes using their knowledge and skills from the EDF 7407 course. Statistical output generated for each student project was examined by the project team, the large peer group, and the faculty member for interpretation of results. Output discussions generated a wide variety of interpretive and priority information for student teams grappling with large numbers of findings. Teams generated written research reports using APA formatting guidelines and power point presentations of their efforts. Each team “practiced” their field site presentation before their peers prior to returning to the agency with their findings. All written reports were also peer shared and discussed prior to their submission to the respective agencies. In addition, students reported reflections of their experiences in commentary and discussions held in the classroom immediately following the team presentations.

Analysis of Data Procedures

Several types of quantitative and qualitative data were retrieved in the project to align with the goals and objectives set forth in the QEP project proposal. Pre and post cognitive and affective quantitative data were retrieved and analyzed using dependent t test analyses to determine significant mean changes of the students’ skills and attitudes based on self-reflection instrument data regarding the following dependent variables: leadership, team building, authentic learning, student engagement, and statistics self-efficacy. Each of these variables is presented with respective t test outcomes in Table 4.

Table 4
Quantitative Analysis of Data Procedures (N=20)

Dependent Variables	Pre Mean	Post Mean	t value	Significance level
Leadership Skills*	221	278	7.34	<.001
Team Building Skills*	43	56	4.21	<.001
Authentic Learning**	33	48	3.29	<.001
Student Engagement**	7	13	3.77	<.001
Statistics Self-Efficacy***	58	77	4.13	<.001

**Leadership Assessment Tool* (leadership-tools.com)

** EDF 7404 Culminating Affective Assessment (UWF faculty member developed)

*** *Statistics Self-Efficacy Scale* (Finney & Schraw, 2003)

Qualitative data analyses performed from data retrieved from project participants are summarized in Table 5. Specific qualitative observations examined in the project include the following: (a) Planning and Goal Setting; (b) Professional Communications; (c) Social Interactions; (d) Interpretation, Discussion, and Presentation; and (e) Community Image.

Table 5
Qualitative Analysis of Data Procedures

Variables Observed	Method of Observations	Resulting Observations
Planning and goal setting	Student teams were required to submit flowcharts of their respective projects plans within the first two weeks of the course.	Team flowcharts were discussed relative to timelines, efficiency, rate of progress, effectiveness, and manageability with feedback provided.
Professional Communications	Class, team, and community agency discussions were observed by the faculty member.	Students were required to discuss in teams their feelings regarding their presentation/communication confidence levels and their “comfort zone” in communicating with community agencies. All students reported increases from feelings of intimidation prior to beginning the project to feelings of confidence upon completion of the project.

Variables Observed	Method of Observations	Resulting Observations
Social Interactions	Social interactions were observed in team, large group, and community environments by the faculty member.	Students were required to discuss their feelings regarding their social interactions in teams and with community agency personnel. All students expressed positive feeling regarding their social interactions in the project.
Interpretation, Discussion, and Presentation	Students reported in a one paragraph reflection statement each week.	Students were required to report their perceived level of thinking, discussing, and interpreting data and findings. All but one student reported that the authentic learning experience had increased their critical thinking and presentation skills.
Community Image	Community agencies were interviewed by a graduate student at midterm and after the completion of the project.	Community agencies reported high quality respect and admiration for the UWF students and their efforts.

Summary of Results and Dissemination of Findings

The results of the quantitative and qualitative analyses of data provide the following summary statements:

- (a) The CAPSULES project increased graduate students' leadership and project management skills;
- (b) The CAPSULES project produced authentic learning experiences for graduate students to engage in real world research and statistics efforts.
- (c) The CAPSULES project increased graduate students' team building and social interaction skills

(d) The CAPSULES project increased graduate students' statistics self-efficacy skills;

(e) The CAPSULES project improved graduate students' professional communication and presentation skills and confidence levels;

(f) The CAPSULES project produced graduate students adequately prepared in project management and community relations skills;

(g) The CAPSULES project promoted positive changes in graduate students' attitudes toward statistics;

(h) The CAPSULES project promoted increased positive attitudes of community agencies toward the image of the UWF COPS graduate research and statistics program.

Dissemination of project findings include the following activities: (a) Presentation at the UWF Best Practices Conference held in April, 2007; (b) Paper accepted for presentation at the Rocky Mountain Behavioral Research Association Meeting in Granbury, Texas, October 24-26, 2007; (c) Paper submitted for consideration for the American Educational Research Association in New York City in April, 2008; (d) Article submitted for consideration to Journal of Educational Statistics (July 20, 2007); and (e) Presentation (if requested) for UWF QEP committee and colleagues in the fall, 2007.

Implications of Findings

Project findings provide important implications for future curriculum and program delivery in the COPS graduate research and statistics teaching and learning efforts. The need for authentic learning experiences and student engagement in community projects to depict real world research and statistics efforts is empirically justified by the project. The integration of project management activities into the CAPSULES environment is inherent in the project and has demonstrated increased managerial and leadership skills of graduate students relative to procedures involved in planning and conducting quality research and statistics efforts. The findings support the CAPSULES environment for promoting positive statistics self-efficacy among graduate students. Lack of confidence in statistics and fear of mathematics and statistics has traditionally been a critical barrier in the teaching and learning of educational statistics. In addition, the use of team projects within real world problem solving and community social and professional interactions has demonstrated high quality team building, conflict resolution skills, and collaborative working efforts among the graduate students involved in the project indicating a strong cooperative learning environment within the CAPSULES approach to teaching and learning educational statistics.

An important implication of the project findings is the impact of the CAPSULES project representing the University of West Florida, College of Professional Studies in the Gulf Coast community. The positive interactions between the graduate students who participated in the CAPSULES QEP project and the community agencies that provided

the data sites and resources for conducting the specific authentic research and statistics activities coupled with the unique service learning component of providing community agencies with high quality research and statistical information champions this project as an exemplary approach for promoting a positive image of the university within the community. The community connections developed and maintained by this project extend beyond the scope of the project findings and participant involvement, that is, virtually all UWF graduate students and faculty now have access to specific community agencies for conducting research, developing partnerships, contributing service, and maintaining strong positive relationships between educational leaders and the community. These results and implications provide substantial evidence that the “Data-Driven Authentic Research CAPSULES: Community Action Projects Utilizing Leadership and E-based Statistics” QEP Project solidly aligns with the purpose and philosophy of the QEP program and supports the mission of the University of West Florida.