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Designing Case Study Research for Pedagogical Application and Scholarly Outcomes

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Abstract

The purpose of this paper is to present the pedagogical/andragogical model of case study research in capstone courses in collegiate aviation programs. As higher education continues to advance in examining new or different ways to engage students, case study research in a capstone course affords seniors the opportunity to engage in learning how to plan, investigate, write a case study research report and present their findings on a topic of interest.

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The capstone course Aviation Research Methods is a culminating experience for some students at Embry-Riddle Aeronautical University. This course provides students the opportunity to explore an issue of personal or professional interest and to address that issue through study and applied research under the direction of a faculty member. The capstone project allows students to demonstrate their ability to apply knowledge and skills acquired in previous 3 ½ years of coursework to real-world issues and problems. The projects are structured to allow students to make a contribution to the collective body of knowledge -- in the workplace, the community or in the academic arena. In this way, students are fulfilling not only a degree plan requirement for graduation but also the Embry-Riddle Aeronautical University mission of "preparing for productive careers and leadership roles." The course instructor assists students in completing their final research projects and papers through individual mentoring. One of the major course goals is to provide a basic research opportunity related to the student's major or minor areas of study, or to some facet of the aviation sciences, technologies, industry, or regulatory environment. The course also serves as a tool for assessing student learning outcomes in the College of Aviation.

Innovative Approach

The typical use of case studies in the classroom involves students, under the guidance of an instructor, examining existing cases in order to explore certain topics or principles in much greater depth. What makes this course unique is that students actually have the opportunity to create their own case study by researching a topic piquing their interest. The research, conducted over the course of an entire semester, focuses on creating and developing a case as learning tool and has potential for scholarly presentation and publication. The residual value of this approach prepares students to be critical thinkers, seekers of valid and reliable information, and systematically present this information in writing. These skills will follow the students into the career field as they begin preparing and presenting factual reports to future managers and leaders.

Preparing Students for Case Method Success

Successful case research requires a foundation of knowledge in research design and methods. Case studies can be employed in education and research for demonstration and learning (Scholz & Tietje, 2002). Learning objectives for the course include the following:

1. Identify a topic that lends itself to in-depth analysis using multiple sources of information found in the literature, as well as interviews, etc.
2. Examine and evaluate selected literature using skills required to be an informed and critical consumer of research (Carney, 2011).

3. Synthesize current information on the selected topic in order to reach a conclusion and/or recommendations.
4. Prepare well-written report of case study findings using accepted scholarly publication standards (e.g. APA).

Key course topics include: the scientific method, development of the research question(s) to be investigated, conducting an effective literature review, and ethical conduct in research (Salkind, 2006). A significant outcome of the course is the preparation and submission of a formal research proposal to be utilized for the case study research and formal report that will be developed in the student's final semester. Writing assignments are designed to increase the student's skills in professional writing and firm adherence to scholarly writing and formatting standards (e.g., Publication Manual of the American Psychological Association). These elements help shape the structure of the analysis to ensure the case research studies are able to attain their fullest potential. In brief, students gain an understanding of the need to produce research that is generalizable, transferable, and replicable. In the context of this research:

> *Generalizable* refers to the ability of a case to be uniform across organizations or events…*Transferable* means that the findings or research solutions can be applied in other similar organizations…*Replicable* refers generally to being able to reproduce the method of research and analysis. (Bailey, 1992, p. 51).

These standards apply to all case research studies and must be considered throughout the design stage, as well as in data collection and the writing of the report.

In an effort to deal with these challenges and provide students with more clear and effective guidance, a set of guidelines for the capstone research experience was developed. These guidelines require the student to select one of the following options for their capstone case study research:

1. Synthesis of an issue or problem currently facing the aviation industry (U.S. domestic and/or international); this can include a well-constructed case study.
2. Non-experimental research project (may be descriptive, historical, correlational, or qualitative).
3. Preparation of a research proposal in response to a Request for Proposals (RFP).

While several studies (e.g., Chen, et al, 2006; Thompson & Ku, 2006) have assessed the success and utility of the case research method in asynchronous academic courses, few researchers have approached the case method design from the perspective of faculty involved in multi-modal teaching situations (traditional, hybrid, and asynchronous). This gap is also compounded by the unique requirements of professional graduate education, in which andragogical methodologies, rather than traditional pedagogical approaches, must be applied (Gibbons & Wentworth, 2001).

Benefits and Lessons Learned

Case research methods have many beneficial outcomes that enhance learning for the student researcher, the group of students working as a class, and for the faculty instructor. Student researcher benefits include comprehension of the scientific method, application of manuscript standards, application of a qualitative research tool, and results that are meaningful and of value to the student's individual expertise and interests. The class as a whole benefits from the exploration of multiple topics, assisting classmates in a facilitated research environment, and understanding that research and writing can be rewarding.

Faculty who lead this facilitated research process enjoy the incremental growth experienced by each student who is actively engage in cultivating their desired focus area on a topic proposed. Seeing the students grow to expert levels through the application of writing and research standards can be one of the greatest moments in a pedagogical experience. This interactive technique allows the instructor to branch outside the classroom lecture, and lead the student in an experiential and adaptive learning environment. Additionally, the results are readily sought after for undergraduate research symposia at state-based Academies of Science, national conferences and other opportunities. As the faculty mentor, this allows the documentation of scholarship and advancement of teaching.

Next Steps

The presentation plan for the Best Practices Roundtable will include rich examples of the case research process, a link to a syllabus for teaching the case research method, and a link to case research course outcomes. Participants will be provided with materials that will enable them to employ this interactive and experiential teaching style immediately. Participants will also gain experience and examples of case research which can result in scholarly publication.

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