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A computer-based application for core course outcomes assessment and program continuous improvement using an integrative business plan -- an empirical evaluation

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ABSTRACT

Outcomes assessment and continuous program improvement has become an increasingly important topic in higher education. ASCSB and governmental bodies often require this type of self-analysis. This paper presents and examines a model of business common core course assessment and improvement using an integrated business plan in the upper division strategic management capstone course. An emphasis is placed demonstrating how computer and information technology is used for instruction and as a means for outcomes assessment. Also, an evaluation of empirical data developed over a one-year period is presented. The manuscript also reflects on some of the problems and issues engendered by any formal and required outcomes assessment program. It is the authors hope that this approach will serve as one model in the development of outcomes assessment and quality control programs in Colleges of Business Administration.

INTRODUCTION

Increasingly, Colleges of Business are being implored to develop and implement an outcomes assessment plan for their academic programs. These plans are expected for AACSB accreditation and are being mandated by state governmental agencies. This paper briefly looks at the outcomes assessment process and presents one computer based integrative model which may be used to assess upper division undergraduate business core courses. If used correctly, this model will also serve as a continuous improvement instrument for these common core courses. An integral part of this assignment is the use of a computer software package for preparing an integrative business plan and the use of the internet as a source for up-to-date information on the

business and industry being studied. The paper also reflects on some of the problems and issues engendered by a mandated formal outcomes assessment program. The major focus of this paper is on how students integrate the use of computer and information technology in developing and presenting a business plan (e.g., the use of a computerized business plan disk, the integration of internet research, and the use of computer-based presentation technology in the final presentation of the plan). Also, an evaluation and analysis of empirical student survey data connected with the preparation of the business plan is presented. Finally, pedagogical and other problems of this approach are discussed and some suggested solutions to these problems are provided.

BACKGROUND

Assessment is generally viewed as the gathering and synthesizing of information concerning a student's learning. Goals, expectations and outcomes are terms used to describe what students will be able to do after learning has taken place (California State University, Long Beach, 1999). It is a systematic process of gathering, interpreting and using information to improve student learning and to move toward quality programs (Marshall, 1998). For the College of Business's undergraduate core, a completed assessment plan should be able to assess the core, validate undergraduate core competencies and establish an assessment framework for evaluating the undergraduate core (Harcharik & Hwang, 1998). These competencies should be predicated on the College's mission statement and statement of goals and objectives. To be effective, a formalized and written assessment plan must exist and the documents of evaluation must be delineated. The end result of this process should be utilized by the College of Business to continually improve the quality and effectiveness of its common core.

COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION UPPER DIVISION UNDERGRADUATE CORE ASSESSMENT PLAN

The College of Business and Public Administration, California State University, San Bernardino has developed an outcomes assessment program for all of its concentrations (majors) and for its upper division common core courses. The State of California has mandated that all programs complete and implement an outcomes assessment plan. The faculty of the College have decided to use our capstone Strategic Management course as the assessment vehicle for the common undergraduate core. To implement this decision, the strategic management faculty adopted the following: (1) The capstone Strategic Management course has been converted from a lecture format to a lecture/lab format; (2) All students will complete a computerized integrative Strategic Business Plan in the lab portion of the course; and (3) The lecture portion of the course will still be an individual instructor's responsibility. An integral part of this assignment is the requirement that students utilize the internet for research purposes and that they demonstrate a working knowledge of computer-based presentation techniques. Our objective is to use this integrative Strategic Business Plan to assess the levels of achievement by all business students in our upper division common business core, to insure that all students demonstrate a basic proficiency in the

use of information technology and to serve as an instrument by which the format and content of these core courses can be continually improved through a feedback mechanism.

DEVELOPMENT OF A MISSION STATEMENT AND GOALS AND OBJECTIVES

The first step in this process was a development of an assessment plan at the college level. A college level committee consisting of faculty members from all academic departments in the college was selected. This committee held a series of meetings with the faculty of the college and developed a Mission Statement for the college (Table 1). Each academic program was instructed to develop a set of goals and objectives that supported the Mission of the College. In addition it was decided that the upper division undergraduate core of the college would be assessed in the Strategic Management capstone course and that this assessment would stress an integrative approach.

At this point two committees were formed to facilitate this core assessment: A college level committee with a member from each academic department and a management department committee consisting of the strategic management faculty. These committees were given the task of developing an outcomes assessment plan for the upper division undergraduate core and the development of a mission statement for this core. Concurrently, each department in the college developed goals and objectives for each core course. This task was completed using the campus guidelines for outcome assessment plans. As a sample, Table 2 presents the goals and objectives for the Information Management core course, INFO 309.

Table 1. Mission Statement of the College of Business and Public Administration

The mission of the College of Business and Public Administration (CBPA) at the California State University, San Bernardino, is to provide high-quality programs that prepare students for positions of leadership in business and the public sector. CBPA programs emphasize developing in students the skills necessary for success in diverse local, national, and global environments. In addition to teaching responsibilities, the faculty engage in basic and applied research, instructional development, and service activities that enhance the learning process, support the faculty members' professional development goals, and enable the College to serve the Inland Empire and beyond.

The College seeks to provide significant resource support for quality teaching and student learning, as well as for faculty research, professional development, and programs of interest to the regional, national, and international communities.

Table 2. Goals and Objectives for INFO 309

Goal 2: Information Management Skills (Info 309)

Students will demonstrate the ability to prepare relatively complex models using spreadsheets and design functional database applications using standard application programs. They will be able to obtain information from computer information systems (including the Internet) and use this information to solve business problems. They will demonstrate the ability to utilize standard word processing programs and computer presentation software.

Objectives/Expected Outcomes

1. Prepare and design an integrated spreadsheet using financial and other business information.
2. Prepare a formal business report using standard word processing programs.
3. Use standard database formulas and commands.
4. Obtain and utilize information from the Internet and other computer information systems in preparing a formal business report.
5. Demonstrate a proficiency in the use of computer presentation software.

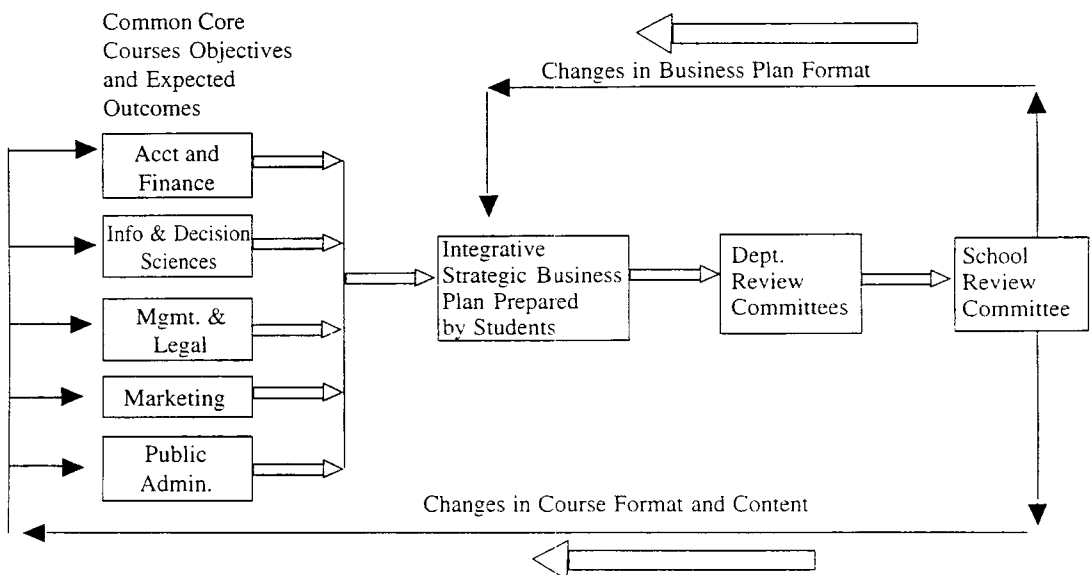
The final step in this process was the development of an approach by which student achievement in each functional area of our core courses could be measured. Using the goals and objectives developed for each course, two instruments were constructed for assessing core course competency. First, a questionnaire was developed to administer to students after they complete their business plans. The questionnaire is designed to assess student perceptions of the degree to which core course goals and objectives were applied in preparing the business plan (see Tables 3-5). Second, a scoring rubric for faculty assessment of the business plans was developed. This scoring rubric utilizes the same core course goals and objectives and measurement scale (e.g., - business plan shows considerable application of this objective, to 1 - business plan shows no application of this objective) used for the student questionnaire. Departmental Outcomes Assessment Committees were then formed to assess a sample of business plans each quarter using the scoring rubric. Thus, each quarter, faculty assess a sample of business plans to determine the extent to which students are demonstrating core business course competencies.

INTEGRATIVE STRATEGIC BUSINESS PLAN: A COMPUTER-BASED APPLICATION

At the outset of this process it was decided that an integrative approach to assessment would be pursued whenever possible. It was felt that this would prove to be more efficacious than a purely course by course approach. It was our goal to measure how effectively students could apply, integrate and communicate their levels of achievement on the skills, competencies and knowledge developed in our upper division common core courses. In lieu of having a series of 'exam questions' on each core course, an assignment was developed which would encourage and force the students to integrate core course content. We also wished to measure the ability of the students to communicate this knowledge via a formal professional business report using computer-based technology. Finally, we wanted to provide the student the opportunity to use up-to-date information technology in the preparation and presentation of this plan.

The integrative Strategic Business Plan format was chosen as the optimum for our needs. Inherent in the development of such an assignment is the requirement to examine and provide a plan for all functional areas of the organization. Students are required to integrate this material in a formal written business plan. The business plan is prepared using *BizPlan Express*, a popular business plan software package. In order to facilitate the preparation of this business plan, the format of the course was changed from a lecture format to a lecture/lab format. The lab portion of the course is devoted to the preparation of the business plan. We feel that his approach realized our goal of developing an integrative experience for the students and also allowed us to evaluate the basic core knowledge of each student. The feedback from the completed business plans will also allow each department to make upgrades to the content and objectives of each core course. Exhibit One presents the assessment model that was adopted.

Exhibit 1. Core Course Continuous Improvement Model Using an Integrative Strategic Business Plan



BUSINESS PLAN FORMAT

All of the completed business plans will be format to include the following information and sections.

Vision and Mission Statement--to include goals and objectives

Company Overview--legal business description, management team and structure, strategic alliances, etc.

Product Strategy--current and future products, R&D strategy, production and distribution strategy, etc.

Marketing Analysis and Marketing Plan--market definition and customer profile, competitive analysis, advertising and promotion strategy, market forecasts, etc.

Financial Plan--current and pro forma financial analysis, capital requirements and sources of capital, expected rates of return on the business, etc.

Governmental Strategy--legal issues that will potentially face the business such as the regulatory environment, pending legislation, major judicial developments, etc.

Overall Strategic Plan for the Business--how the above fits together into a coherent business model.

PowerPoint Presentation--a formal computer based presentation of the completed business plan and strategic recommendations.

By requiring the student to develop each of the functional areas outlined above, it is assured that the student is required to integrate the knowledge learned in the undergraduate core courses and that we achieve a truly integrative assessment vehicle.

INTERNET AND TECHNOLOGY STRATEGY

Early on in this process it was ascertained that the use of technology in general and the internet in particular should be an important component of any completed business plan. We desired to require the integration of the use of the computer into the assignment. Thus, we instituted a "technology strategy." First, the business plan itself would be a computer-based package. We reviewed a number of business plan software packages and decided on *BizPlan Express* (Kapron, 1998). This package requires that the student utilize word processing and spreadsheet software. Second, we require the student to utilize a computer presentation software package such as *PowerPoint* in the final report. Finally, it is also a requirement that students document their usage of the internet in preparing the final plan. It is expected that the student will use the internet to find information on the company and industry being analyzed to include items such as financial analysis, market analysis, market trends and current and pending governmental rules and regulations. This approach guarantees that the student will utilize fully technology in the completion of this project.

EMPIRICAL FEEDBACK FROM STUDENTS AND PROFESSORS

It was imperative that a feedback mechanism be designed and implemented in order to obtain information for which to assess the extent to which students were applying concepts taught in the business core courses. A two-pronged approach was developed. First, upon completion of the business plan, each student is requested to complete a questionnaire developed to assess his/her perception of the degree to which the group applied and/or integrated core-course materials/concepts in preparing the business plan. The questionnaire contains core business concepts listed under six categories: (1) Computer and information management applications; (2) Accounting and financial applications; (3) Public policy and legal applications; (4) Production and operations management applications; (5) Marketing applications; and (6) Organization and strategic management applications. Students are asked to indicate the degree to which the group applied these core-course concepts using a four-point scale (4-considerable application, 3-some application, 2-little applicaiton, 1-no application). Second, faculty review the business plans to assess the degree to which students have applied core business concepts. Each department in the College formed an Outcome Assessment Committee to review a sample of business plans on a quarterly basis. Each committee conducts an evaluation and prepares a report detailing the degree to which they believe students have applied and mastered core course competencies in preparing their business plan.

Results from the questionnaires for the 1999-2000 academic year (the first year the business plan requirement was implemented) indicate a clear majority of students perceive that the Strategic Business Plan assignment requires considerable or some application of business core-course materials/concepts. In terms of assessing proficiency in the use of information technology, nearly 92% (n=303) reported either considerable or some application of using spreadsheets to organize and present financial information. The percentages of those reporting either considerable or some application in using a word processing program, using the internet to conduct

Table 3. Computer and Information Management Applications (n=303)

	4 <u>Considerable</u>	3 <u>Some</u>	2 <u>Little</u>	1 <u>No</u>
Used a spreadsheet to organize and present financial information.	65.0%	26.7%	6.3%	2.0%
Used a word processing program to prepare the business plan.	8.19	12.5	4.6	2.0
Used the internet to research the organization/industry.	71.0	18.1	9.2	1.7
Organized data into tables and graphs to analyze/present information.	37.0	40.5	18.5	4.0

research, and organizing data into tables and graphs to analyze or present information were 94.4%, 89.1%, and 77.5%, respectively (see Table 3). The departmental Outcomes Assessment Committee reports contained similar findings. There was a clear consensus that the lab-based Strategic Business Plan assignment was effective in evaluating student competency in the area of computer and information management application. Though not as strong as the perceptions in the area of computer and information management applications, students also indicated a significant application of core course materials in the areas of accounting and finance, production and operations management, marketing and organization and strategic management (see Table 4 below). For each of the core concepts assessed, a sizeable majority of students perceived that there was considerable or some application in developing their business plan.

Consistent with students' perceptions, the Outcomes Assessment Committee reports from the related departments noted that there was considerable student application of core-course concepts. However, some of the committee reports noted considerable variance in the quality of the business plans submitted, and that in some cases, applications could have been more "in-depth." Thus, while acknowledging that the principles were being applied, it was the degree to which they were applied that was of most significant concern. The specific issues identified in these reports are disseminated to faculty. In turn, faculty teaching the Strategic Management course are expected to use this feedback to "encourage" students to address these areas more fully in their business plans.

Table 4. Accounting and Finance, Production and Operations Management, Marketing, and Organization and Strategic Management (n=303)

	4 <u>Considerable</u>	3 <u>Some</u>	2 <u>Little</u>	1 <u>No</u>
<i>Accounting and Finance Applications</i>				
Developed a financial plan for your organization (e.g., balance sheet, income statement, cash flows, etc.).	59.4%	25.1%	12.5%	3.0%
Used accounting concepts, principles and frameworks to analyze and communicate financial information.	51.5	34.0	12.2	2.3
Used financial principles, such as financial planning, working capital, long-term investments, etc.	42.2	39.3	15.2	3.3
<i>Production and Operations Management Applications</i>				
Developed a production and/or service strategy integrating production and/or service capabilities.	38.7	41.4	15.6	4.3
Used forecasting techniques in developing your operations plan.	31.9	38.6	23.1	7.3

Addressed product demand and production capacity excellence in customer service.	42.9	34.0	18.5	4.6
Addressed product and service design issues.	40.1	34.4	19.5	6.0
<i>Marketing Applications</i>				
Described and assessed specific market environments.	56.8	31.7	11.3	.3
Addressed issues of product development, pricing and production/service physical distribution.	51.5	34.3	13.2	1.0
Addressed advertising and promotion strategies.	59.8	32.3	6.9	1.0
Addressed issues of consumer and purchasing behavior.	44.5	35.0	17.2	3.3
<i>Organization and Strategic Management Applications</i>				
Described the organization/management structure and staffing needs.	50.2	37.6	11.6	.6
The group applied principles of effective team management.	50.5	29.0	15.5	5.0
Addressed major strategic choice issues in developing corporate, business and operational strategies.	46.2	37.6	12.9	3.3
Gained an understanding of the responsibilities of the general manager in coordinating and integrating activities across the various business units.	41.6	36.6	16.2	5.6

One area where students perceived that there was mor limited application involved public policy and legal issues. As indicated on Table 5, a rather scant majority of students perceived considerable or some application in developing their business plans. This was an issue that was identified during the first quarter the business plan requirement was implemented. One contributing factor is that the business plan software templates do not address these issues to the degree desired. Thus, instructors are now requiring students to add a governmental policy section to their business plans. Nonetheless, data presented in Table 5 and the reports of the Outcomes Assessment Committee in Public Administration, suggest that there is room for significantly more coverage of these issues in the business plans.

Table 5. Public Policy and Legal Applications (n = 303)

	4 <u>Considerable</u>	3 <u>Some</u>	2 <u>Little</u>	1 <u>No</u>
Addressed issues related to the regulatory role of government (e.g., description of the legal form of the company, licensing, product liability, etc.).	21.7%	38.3%	34.7%	5.3%
Addressed issues related to the government-business relationship (e.g., government regulations and major judicial developments).	17.8	33.3	41.0	7.9

OPERATIONAL ISSUES

In any new approach to assessment or to the design of a course, certain problems and questions are expected to emerge. In this case we have already experienced some and anticipate that others will be confronted. The first issue encountered is that of increased faculty workload. Under our system of workload credit, a lab hour is counted as less than an hour of lecture. Thus the 'face' time for each faculty member is increased from 220 minutes to 250 minutes per week. This and the fact that an additional substantial requirements has been added in the form of the strategic business plan has increased the workload of the individual faculty member teaching the strategic management core course. The faculty teaching this course have discussed this issue and decided that the additional quality provided by this redesign of the course is worth the extra work.

The second and most serious problem is that of academic freedom. If we are to prescribe a common assignment in our strategic management course, by definition, the freedom of the individual faculty is diminished. This is an issue that is common in any outcomes assessment program that uses a course or a portion of the program as an assessment vehicle. In the case of our college, this is the practice in several of our programs. This is a question that will potentially face a number of academic institutions as outcomes assessment programs become more prevalent. As a faculty, we have not developed an entirely satisfactory solution or answer to this problem, but have adopted the position that it is acceptable under the principal of academic freedom to mandate a portion of the course if the faculty who teach the course agree to this infringement. In addition, we have been careful to mandate the content of only the lab portion of the course, the lecture portion is still the domain of the individual professor teaching the course.

Faculty 'buy in' or commitment to both the outcomes assessment assignment and to the continuous improvement element of the process has also been an issue. If the faculty (and the college administration) does not take this process seriously, it will fail. Throughout the development of this plan, we have been careful to involve both faculty teaching the Strategic Management course and the various academic departments. By allowing each of these parties a part in both the design of the Strategic Business Plan assignment and the process, we have been able to

develop a high degree of participation at all levels of the college. We feel that this has caused the commitment level to be high and will insure that all members of the college will participate in the continuous improvement that is the designed end point of this process.

A final problem concerns the cost of the technology utilized in the implementation of this plan. The largest cost associated with this type of model is the cost of the basic technology--computers, internet hookups and presentation equipment. In our case we were able to use the perceived benefits of this approach to justify the installation of the necessary hardware, software and the multi-media equipment required by the students in the competition and the presentation of their business plan. In essence, we were able to justify an upgraded lecture/lab setup due to the value added by this assessment model.

CONCLUSIONS

The program outlined above demonstrates how instructionally related technology can be applied for a variety of educational purposes. Certainly, using computer applications to teach students how to develop and prepare an integrative business plan is a fundamental requirement for preparing capable business professionals. Further, based upon initial feedback from students and faculty, it appears as if the strategic business plan assignment holds substantial promise as a means for our core course outcomes assessment and continuous improvement program.

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