

The Accounting Education Change Commission Grant Experience: A Summary

Chapter 9 UNIVERSITY OF ILLINOIS Project Discovery

Type, Size and Mission of Accounting Program

The University of Illinois, Urbana-Champaign (UIUC), founded in 1867, is a large land-grant, state-supported institution serving approximately 36,500 students, about 27,000 of whom are undergraduate. These students come from every state in the union and about 100 foreign countries. Approximately 92 percent of the under-graduate students are Illinois residents. There are ten undergraduate colleges, including the College of Commerce and Business Administration (CCBA) and one school at the UIUC. The CCBA has approximately 3,000 undergraduate students, 1,000 students in the various masters programs, and 200 in doctoral programs. The Department of Accountancy is one of four departments in the CCBA. The other departments are Business Administration, Economics and Finance.

Undergraduate education is strongly emphasized and admissions are highly competitive. The median freshman ACT composite score is 27 for the campus, and more than 25 percent of these students ranked in the top 4 percent of their high-school classes. Entrance credentials for students accepted into the CCBA are even higher.

Approximately 400 students graduate each year with an undergraduate degree in accountancy. In addition, approximately 40 masters students and 20 masters of tax students earn their degrees every year. The Department of Accountancy has been ranked first in the nation in *The CPA Personnel Report* (previously the *Public Accounting Report*) survey of accounting programs in each of the fourteen years in which this survey has been conducted. In addition, the Department of Accountancy was ranked number one by *U.S. News and World Report* in its 1995 ranking of undergraduate programs.

The doctoral program in accountancy also is widely acclaimed with many of its graduates holding prestigious appointments in industry, government and at leading universities throughout the world. At present, some 20 students typically are enrolled in the program, with three-five students earning their Ph.D.s each year.

Characteristics of the Program Before the Grant

Prior to Project Discovery (PD), the UIUC undergraduate accountancy curriculum was typical of that found in large universities. During the mid 1980s, however, content and delivery shortcomings of the typical undergraduate accountancy education became salient to the UIUC Accountancy faculty. Among the problems identified were that courses were rule and procedurally oriented, generalized and specialized education were not integrated, there was no underlying conceptual framework which drew the various functional areas (tax, financial, auditing) together, students had become passive participants in the acquisition of knowledge, and many important skills (communications, dealing with uncertainty) were insufficiently addressed. Importantly, these shortcomings of accountancy education were not in any way local to the UIUC campus. In fact, accountancy students graduating from UIUC were among the most highly recruited in the nation. Nevertheless, it became clear that these shortcomings were threatening to diminish the value of the education students receive at Illinois and elsewhere:

"...accountancy education does a poor job of instilling the requisite skills of discovery (problem identification, information search and evidence evaluation) that are critical to successful professionals in today's complex environment (University of Illinois at Urbana-Champaign,

Department of Accountancy, *Project Discovery: A Prototype for Education in Accountancy*. A proposal submitted to the Accounting Education Change Commission, November 1990, p. 1).

Central Objectives of the Grant

To address the shortcomings of undergraduate accountancy education, we aspired to create "...an innovative curriculum prototype that can be implemented at many universities around the country (University of Illinois at Urbana-Champaign, Department of Accountancy, *Project Discovery: A prototype for Education in Accountancy*, p. 1)".

PD has these salient features:

- Active learning methods that enhance development of critical thinking abilities. The PD curriculum places much greater emphasis on methods and skills of inquiry, analysis, judgment and decision making.
- Accountancy courses that better integrate and reinforce general education requirements. The PD curriculum integrates, by extension and reinforcement in the major field, the content and skills learned in basic courses (e.g., English, Psychology, Economics).
- Introductory courses that are more interesting and broad-based. The PD sophomore two-course sequence provides a broader introduction to business and an expanded understanding of the role of information in business and society.
- A conceptual framework that cuts across functional areas. Accounting courses in the PD curriculum are organized with an integrated conceptual structure common to all aspects of the discipline. This conceptual structure emphasizes the utility of information, together with information production and dissemination given various uses.
- Better development and improvement of students' interpersonal and communication skills. These skills are reflected in the fabric of the curriculum through the use of team projects and written and oral reports.
- Greater integration of research findings into the curriculum. PD courses include knowledge gained through current research and related implications for the practice of accountancy.
- A working partnership between academe and practice. The goal is to enable a continuous focus on the practical relevance of the educational process as well as a richer and more contemporary flavor to the content of course materials.

Key Means of Accomplishing the Grant Objectives

A faculty committee met to consider how the identified shortcomings of undergraduate accountancy education could be addressed. We soon realized that pervasive changes in the content and delivery of our courses was going to be required given the scope of the identified shortcomings. Two other realizations interacted with this realization. First, we felt that because very few universities would have the resources and credibility to initiate a comprehensive change to undergraduate accountancy education, the UIUC faculty had an obligation to make our innovations usable at and available to other universities. Second, despite our relative position, PD would be served well by a strategic alliance with another university. Given the goal of producing a new accountancy curriculum usable on campuses other than UIUC, we searched for a university with a different environment from the large, land-grant university environment represented by Illinois. Ultimately, we approached the University of Notre Dame with a proposal that they join us in developing PD and they agreed to do so.

A Director and Associate Director of Project Discovery were designated on both campuses. Working under the PD Directors, a faculty committee developed the structure of the new curriculum. Initially, responsibility for course development was assigned to individual faculty members. These persons were tenured members of the UIUC and Notre Dame faculties. Subsequently, faculty teams were

asked to work on each course. Coordination across courses and universities was encouraged by the PD Directors and Associate Directors.

The tenured faculty members who were initially assigned primary responsibility for each PD course were provided course teaching release time. These faculty members also taught the first offerings of these courses. The first sophomore PD courses at UIUC were taught during academic year 1992-93 and the first class of 84 PD students graduated from UIUC in May of 1995. The University of Notre Dame followed one year behind the UIUC- their first class of PD students graduated in May of 1996.

Major Changes from Pre-Grant Conditions

Unlike most other AECC grant initiatives, PD is a comprehensive change in delivery and content in all accountancy courses at the sophomore, junior and senior years. Perhaps the most significant delivery change involves the movement from an instructor-oriented to a student (team) oriented classroom. This change is related to our emphasis on active learning. In particular, we have operated under the premise that learning is more effective when students acquire (i.e., discover) knowledge by performing meaningful activities (or projects). Indeed, the name "Project Discovery" highlights our commitment to this view. The modal PD class, therefore, is not the sedate, instructor-in-the-front-of-the-room, lecture-oriented class typical of traditional courses. Rather, one finds in the modal PD classroom a relatively noisy, work-oriented environment in which students work as teams, debate among themselves, and present findings to their instructors and peers.

PD consists of three types of required accountancy courses:

1. A two-course introductory component taken during the sophomore year:
 - Accounting and Accountancy I
 - Accounting and Accountancy II

These courses place accounting in a broad context, introducing business concepts and practice and the role of accountants and accounting in society. These courses also provide a conceptual foundation for subsequent PD components. A key aspect of the conceptual foundation is the concept of contracting. Accountancy is presented as a discipline that facilitates contracting among members of society by developing, evaluating, and distributing contract-relevant information. Contracts involve two or more parties and these parties must make decisions regarding contract initiation, fulfillment and enforcement. These decisions in turn, depend on information, and accountants play key roles in development, evaluation and communication of this information.

2. A five-course concepts component taken during the junior and senior years:
 - Decision Making for Accountancy
 - Accounting Measurement & Disclosure
 - Accounting institutions & Regulation
 - Accounting Control Systems
 - Attestation & Assurance

In contrast with traditional accountancy education, which is organized around accounting context (e.g., financial reporting, internal reporting, taxation), these courses are oriented conceptually and around pervasive accountancy features:

Decision Making for Accountancy. One function of accountancy is to provide information to support informed judgments and decisions. Increasingly, accountants must comprehend and address the complexity, uncertainty, and ambiguity inherent in organizational settings while maintaining their role as effective decision-making facilitators. In this course, students learn to examine the decision-making implications of selected issues using ideas from economics, statistics, and psychology. Key course objectives include:

- Introduction to the uses of accounting information in decision making;
- Understanding the information needs of decision makers both inside and outside organizations;

- Development of judgment and problem-solving skills, particularly related to decision making in the face of uncertainty and ambiguity;
- Providing an integrated framework for structuring and using analytic models as aids to judgment and decision making;
- Understanding both quantitative and intuitive approaches to decision making, emphasizing their complementary strengths and weaknesses.

Accounting Measurement and Disclosure. This course focuses on capturing data underlying accounting information and manipulating and presenting data so that they meet the needs of contracting parties. Unlike traditional accountancy courses in which measurement and disclosure are presented in context-specific settings, a context-neutral conceptual orientation is used, thereby depicting how different settings affect the selection of measurement and disclosure techniques. Major course objectives include:

- Introducing measurement concepts including properties of measures, scales, allocation, aggregation and estimation;
- Identifying objectives of accounting information, including qualitative characteristics;
- Understanding valuation principles and alternative valuation techniques as they apply to both stock and flow measures;
- Understanding the relation between measures and decision objectives arising from explicit and implicit contracts.

Accounting Institutions and Regulation. This course focuses on the institutions that regulate the specification and application of accounting methods for different purposes. These institutions are both governmental (e.g., Securities Exchange Commission [SEC], Internal Revenue Service [IRS]), and private (e.g., American Institute of Certified Public Accountants [AICPA], Financial Accounting Standards Board [FASB]). They create regulatory and legal environs that have a widespread influence on accounting. Students acquire knowledge of these institutions and an understanding of how accounting rules, standards, and practices which they promulgate are used to address accounting problems. Other key objectives of this junior-year course include:

- Understanding the economic aspects of regulation;
- Examining regulation of accounting procedures with respect to external reporting, including the activities of the FASB, the SEC, the AICPA, and, to a lesser extent, the Governmental Accounting Standards Board and the International Accounting Standards Committee;
- Considering regulation of accounting procedures for rate-setting and other purposes by governmental agencies and state public utility commissions;
- Examining regulation of accounting procedures for taxation including consideration of the U.S. Congress, the IRS and foreign governments.

Accounting Control Systems. This course focuses on the mechanisms by which parties plan, execute, and monitor contracts. It covers the design of information systems for facilitating and monitoring implicit and explicit contracts. Key course objectives include:

- Developing an understanding of the conflicting interests implicit in contracting settings;
- Examining controls (e.g., planning, transaction) which can be employed and considering factors that affect selection;
- Analyzing information technology and cost/benefit considerations in control system selection;
- Developing an understanding of information controls including those which assure completeness, reconciliation of independent sources, monitoring and verification via audit trails.
- Balancing innovation and control.

Attestation and Assurance. This course is concerned with the lending of credibility by a non-contracting party to the assertions one contracting party makes to other contracting parties. The conditions which give rise to the demand for this service are studied and it is noted that they exist in numerous "places" within our society, including that of financial reporting. Also covered are services in which assurance is provided within an organization. An emphasis is attestation and assurance concepts including evidence, ethics, and control. Other topics covered include risks that the assure reduces and those that the assure bears. Key objectives of this course include:

- Developing an understanding of the role of attestation in a market-based economy, including the potential subject matters of attest services;
- Examining concepts and issues of assurance, including assertions, risks and hypothesis testing;
- Developing an understanding of procedures for hypothesis testing, including the scientific method and the role of evidence;
- Developing an understanding of ethical dilemmas in assurance and attestation settings and an awareness of alternative standards and criteria for coping with these dilemmas.

3. A skills component taken during the junior and senior years:

- Professional Workshop

Recognizing that students pursuing careers in accountancy must develop numerous skills and capabilities and that some will not be sufficiently developed via the introductory and concepts courses, we have created this free-standing course. The Professional Workshop is a one-hour continuing course (taken for three semesters) which develops and improves skills required of a full-functioning professional including:

- Oral and written presentation/communication skills;
- Teamwork and leadership skills including organization, negotiation and conflict resolution;
- Time management, stress management, and interviewing;
- Coverage of topics such as discrimination and other social issues of the work place, culture diversity and how to conduct business in a global marketplace.
- Applied research skills, database skills and Internet skills.

In addition to the required courses, there is a three course elective component:

- Financial Reporting Standards
- Income Tax Rules & Regulations
- Auditing Standards

These three courses are focused on professional standards. Relative to present accountancy courses, the PD courses described earlier are considerably less tied to the current rules of accountancy practice as promulgated in professional accountancy standards. While this altered orientation is purposeful, we recognize that students must acquire some understanding of the current rules of practice and, more importantly, a facility with the professional standards/literature sufficient for them to solve real-world accountancy problems. Instilling such an understanding and creating that facility are the goals of these courses.

Methods of Achieving Faculty and Administrative Support for Change

One of the most rewarding aspects of PD has been the commitment of the UIUC accountancy faculty to excellence and leadership in education. This commitment translated into strong support among the faculty for the PD innovations. Further, as we gained experience with the individual courses and the PD curriculum as a whole, the small number of faculty members who were negative or undecided became supporters. On December 8, 1995, the faculty of the Department of Accountancy voted unanimously to replace the traditional accountancy curriculum with the PD curriculum.

Prior to applying for the grant from the AECC for PD, we solicited the support of the Dean of the CCBA as well as the senior academic officer of the UIUC, the vice-chancellor for Academic Affairs (now known as the Provost). The letters of support from both of these administrative officers became important parts of our grant request. Similar letters were solicited and received from the analogous University of Notre Dame administrators.

One important feature of our development was that we did not immediately replace the extant traditional curriculum. Rather, as they were developed, one section of the sophomore courses and two section of the other PD courses were offered on an "experimental" basis. Students then could

volunteer for these sections. This approach was critically important to obtaining acceptance by the faculty because the traditional program at UIUC was so highly regarded. In essence, we did not ask them to take on faith that the newly developed courses and the PD curriculum as a whole would represent an improvement, but we made such improvement an empirical question. The empirical question was to be addressed via our program of assessment.

Change Activities that Worked Well and Which Others Might Copy

Our assessment evidence suggests that the PD curriculum is working quite well. We are, therefore, quite comfortable recommending that other institutions consider adoption of PD courses of the curriculum as a whole. Some individual features of PD seem to have worked particularly well and thus, are worthy of being highlighted.

An important PD feature is that the order in which accounting rules and concepts are presented is reversed relative to traditional programs. That is, PD students first are exposed to accounting concepts and then accounting rules. Moreover, when rules are covered, they are used as vehicles for elucidating concepts rather than as an end to themselves. This sequence and orientation seems to be a critical contributor to student perceptions of the field of accounting and, in turn, a major determinant of the interests and orientation of students who choose PD. If this continues, we will have impacted the "type" of student who majors in accountancy at the UIUC.

Perhaps the most common criticism of accounting students has been that they have weak communication skills. We have used a variety of means to address this criticism and in doing so have made oral and written communication skills a pervasive part of the PD curriculum. First, rather than deciding that responsibility was vested elsewhere on campus, the Department of Accountancy faculty took responsibility for enhancing our students' communication skills. Next, to leverage our efforts, we hired a communication specialist in a Lecturer capacity. In addition, support staff (e.g., law students, English graduate students) are hired to grade papers and meet with PD students. The communication specialist plays an invaluable role in helping faculty members weave communication skill exercises into the fabric of PD courses. The effect has been dramatic. In the modal PD course, multiple-choice exam questions have been virtually eliminated and written assignments are regularly graded both for content and the quality of written exposition. Also students now have several opportunities to make oral presentation which also are graded for content and the quality of the exposition. As accountability has increased, so has student attention to these skills and in turn, their communication abilities have improved.

One important management tool is the matrix of knowledge, skills and attitudes which we developed based on *AECC Position Statement no. 1*. This matrix has been used both as a decision aid and as a tool for managing the curriculum as a whole. In the latter capacity, it has been especially valuable for assuring that individual PD courses would become an articulated curriculum and that we did not make serious errors of omission or commission.

Lastly, this report would be incomplete if we were not to highlight the importance of assessment in our endeavor. It already has been mentioned that it is difficult to imagine how a faculty (and other stakeholders) could be asked to change to a new curriculum without strong evidence that the new curriculum is an improvement. However, it also is important to recognize that assessment provides invaluable evidence for recalibrating in-process changes and for addressing the legitimate concerns of students who volunteer for experimental section of the curriculum. In the latter vein, an assessment program will work well if it fits the setting in which it must operate. In the case of the UIUC and PD, it was essential that the assessment program have scholarly integrity. Our assessment program, therefore, was informed by the education literature, and also rooted in psychology and social psychology theories and concepts.

Change Activities Undertaken That Did Not Work

There are three matters which belong under this heading. First we made a mistake in the sequence that we used to obtain funding for PD. That is, we first sought funding from the AECC and, only after such funding was secured, did we seek funding from outside sources. It is likely that contemporaneous efforts for more complete funding of the PD innovations would have brought us closer to that goal. Related to this concern is that we underestimated the cost of building technology

into PD classrooms.

In retrospect, another error was initial assignment of course development responsibilities to individuals. This approach seemed natural because historically course changes have been an individual and relatively private matter. We have learned, however, that while it is important that one person take a leadership role, a team approach provides insurance against the delays which can result from faculty departures which inevitably will occur when a development program extends over several years.

Lastly, it has been mentioned that PD was initially offered in a limited number of the sections of each UIUC accountancy course. While this approach was beneficial from a faculty acceptance perspective, problems arose due to the existence of dual accountancy programs. We underestimated, for example, the tension that would exist between students enrolled in the two programs. We can only speculate that rumors (e.g., about how good the new curriculum was and how well the PD students would perform on the CPA exam and fare in the job market) would have been reduced if we had more aggressively managed the transition process.

Unexpected Benefits

We did a good job of anticipating most of the many benefits that have accrued to the Department of Accountancy at the UIUC from PD. Perhaps the one exception is the extent to which PD students would be recruited by non-traditional employers of undergraduate accounting students (e.g., major investment banking houses). Similarly, the extent to which traditional employers would view PD students as competitors for positions otherwise offered to MBA program graduates was something of a pleasant surprise.

Measurement of the Effects of Changes Accomplished

We have designed and implemented an extensive and creative program for assessing the impact of the PD innovations. While students are enrolled in PD courses, this assessment plan has two broad foci. First, we evaluate students' self efficacy (i.e., how much do students believe they know?). Second, we evaluate students' performance as a means of assessing their actual knowledge, skills and attitudes. Our extant evidence is:

1. Skills & Abilities: PD students are better at identifying accounting information resources and ethical issues than are traditional program students. Also, PD students are better at problem structuring and writing and they demonstrate higher levels of cognitive complexity in analyzing accounting issues. We have found no differences in the technical accounting skills of PD and non-PD graduates.
2. Self-Efficacy Judgments: PD students believe that they have stronger communication and interpersonal skills and weaker technical accounting skills relative to non-PD students at the UIUC.
3. Differences Between Students Choosing the PD and non-PD Programs: There are no significant differences in the ethnic composition of students who have, to date, entered the PD program relative to our traditional undergraduate accounting program. Further, we are unable to identify any significant demographic differences between PD and non-PD UIUC students, although PD students had slightly higher ACT scores.
4. CPA Exam Performance: Although PD was not directed at improving CPA exam pass rates, the first group of PD students' performed exceptionally well. Sixty-nine PD students took the May 1995 CPA exam and 32 passed all four parts — a pass rate of about 47%. This rate is substantially higher than the national pass rate and modestly higher than the rate (40%) at which non-PD UIUC students typically pass the CPA exam.
5. Job Placements: PD students have been in great demand by recruiters for both internships and permanent positions. PD students received significantly more permanent job offers, on average, than non-PD UIUC accountancy students. Further, the starting salary of the PD students was higher. Reports from 54 of the 84 May 1995 PD senior students indicate that 32

(59%) secured jobs with Big-6 accounting firms. Another four PD students secured jobs with regional public accountancy firms, making the total 36 of the 54 (67%) students. Eight of the 54 students secured positions with major corporations (e.g., Motorola, Baxter Medical, John Deere). Four of the 54 students secured jobs with nontraditional employers of undergraduate accountancy programs — major investment banking houses.

We also plan to assess PD students post graduation. Specifically, we have requested that the Chicago offices of all Big-Six accounting firms allow us access to the personnel records of all staff employees hired between June 1993 and May 1998. Specific data on which we intend to focus include personnel evaluations promotions, salaries and job changes for PD UIUC graduates, non-PD UIUC graduates and graduates of other universities. To illustrate our expectations, relative to non-PD graduates, we expect that, in the work place, PD students will demonstrate better communication and interpersonal skills, and better problem-solving skills. Consequently, we expect PD graduate to advance more quickly than other graduates.

Special Insights from Carrying Out Our AECC Grant

We knew that PD would be difficult to implement. However, we underestimated just how time consuming and difficult implementation would be. But, we also grossly underestimated how rewarding PD would be. Virtually without exception, faculty who have been involved in the development of PD have indicated that they could not imagine the circumstances under which they could return to traditional undergraduate accounting delivery and content.

Project Discovery has better integrated our seemingly disparate roles as researchers and educators and focused us on the following core value: everyone in the university setting is engaged in learning (i.e., the acquisition of knowledge). Recognizing that everyone is involved in essentially the same activity has led to a closer and more collegial relationship between faculty and students.

Plans to Perpetuate the Changes That Worked Well

Following the unanimous vote of the accountancy faculty on December 8, 1995, we are working to obtain the various administrative approvals required for PD to formally replace the traditional accountancy program at the UIUC. We are not, however, presuming that accountancy curriculum innovation at the UIUC will be complete at that point. Rather, we recognize that efforts to improve our educational programs must be continuous.

Major Report and Articles Generated from Grant Activities

Project Discovery was featured in the December/January 1996 issue of *Insight* — the magazine of the Illinois CPA Society (pp. 20-24). Articles are in process related to our assessment program and the results of that program. Bibliographic data on these articles are not presently available.

Materials Available to Send to Others and How to Obtain Them

Some of our materials (e.g., a program overview and course descriptions) are available on our World Wide Web site: <http://www.cba.uiuc.edu/accountancy/index.htm>. Course syllabi, illustrative teaching materials and further program details can be obtained by writing to the Project Discovery Director at the following address: University of Illinois, College of Commerce, Department of Accountancy, 1206 S. Sixth Street, Champaign, Illinois 61820.

Reference

Department of Accountancy, *Project Discovery: A Prototype for Education in Accountancy*. A proposal submitted to the Accounting Education Change Commission, November 1990, pp. 1-37.