ACADEMY OF EDUCATIONAL LEADERSHIP JOURNAL

An official Journal of the

Allied Academies, Inc.

Michael Shurden and Royce Caines
Editors
Lander University

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The articles contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

We intend to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

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Royce Caines and Michael Shurden
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A DISCONTINUOUS CURRICULAR INNOVATION: MARKET DATABASE DEVELOPMENT

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ABSTRACT

Information management is, increasingly, becoming a fundamental marketing skill. But this fact is not reflected in the traditional marketing curriculum, which gives little attention to the hands-on use of databases and statistical packages. So this article proposes a curriculum change—the introduction of a new course, Market Database Development—designed to address this lack of training in information management and to implement the three-stage learning process of King, Wood, and Mines (1990). The article discusses the content and structure of the new course and its position within an updated Marketing curriculum.

INTRODUCTION

The past decade has produced enormous changes in marketing practice. With some lag, those changes in practice—and new AACSB standards (AACSB 2000)--are beginning to stimulate substantial changes in marketing education, particularly with respect to globalization and technology (Graef 1998; Moon 1999; Pharr and Morris 1997; Smart, Tomkovick, Jones and Menon 1999). But the transformation of marketing education is far from complete, and the marketing curriculum continues to be criticized by students, legislators, and business leaders for being static and unchanging (Butler and Straughn-Mizerski 1998), unresponsive and irrelevant (Smart, Kelly, and Conant 1999), and ineffective and out of touch (Catterall and Clarke 2000; Smart, Kelly, and Conant 1999). So while changes are occurring, marketing educators are, nevertheless, accused of changing their programs too slowly and infrequently. In effect, they are accused of violating their own dicta, of teaching students that businesses must anticipate change and adapt quickly but of not practicing what they preach (Shuptrine and Willenborg 1998).

These criticisms and environmental changes have produced calls for a root-and-branch rethinking of marketing education at the undergraduate (Lamont and Friedman 1997; Smart et al. 1999) and graduate levels (Ghandi and Bodkin 1996; Moon 1999; Smart, Kelly, and Conant 1999), including calls for the development of a "fourth generation marketing curriculum," a curriculum that emphasizes communication, teamwork, problem-solving, and technology skills, all within a global,

ethical perspective (Hill 1997; Pharr and Morris 1997). These calls from inside and outside the marketing education community highlight the growing importance of an ability to use technology to define and solve marketing problems (Shuptrine and Willenborg 1998).

This paper discusses the effort of one marketing program to address these concerns by replacing its traditional marketing curriculum with a new curriculum more suitable for the new economy. Specifically, it discusses changes made in the marketing curriculum at [University Name] to more fully develop technology and problem solving skills. The most important part of this curricular change was a radical restructuring of the traditional Marketing Research course, a transformation that narrowed the focus of the course while expanding the coverage of issues related to the use of information in marketplace decision making. This was accomplished by breaking apart and distributing the content of the traditional course over other courses and by creating a new technology and information intensive course, Market Database Development. This paper focuses upon the content of this new course, which was specially designed to help students position themselves at the nexus of technology and business decision making. After discussing at some length the logic and structure of this new course, the paper concludes with lessons learned in this effort to transform the marketing curriculum and make it more relevant to current business practice.

MARKETING CURRICULUM

Many studies have emphasized the centrality of technology in the transformation and revitalization the marketing curriculum (Benbunan-Fich, et al. 2001; Butler and Straughn-Mizerski 1998; Castleberry 2001; Floyd and Gordon 1998; Gault, Redington, and Schlager 2000; Ghandi and Bodkin 1996; Koch 1997; LaBarbera and Simonoff 1999; Lamb, Shipp, and Moncrief 1995; Lamont and Friedman 1997; Moon 1999; Siegel 2000; Shuptrine and Willenborg 1998; Sterngold and Hurlbert 1998). One major focus of these studies is information literacy—the importance of developing in students an ability to use, analyze, and interpret the vast amounts of data they will encounter after graduation. Sterngold and Hurlbert (1998) offer an explicit definition of information literacy with three dimensions: *technical*, *reflective*, and *professional*. In brief, they describe *technical* information literacy as

> a working knowledge of both traditional and new information sources, technologies, and data-gathering methods (primary and secondary) and the ability to apply this knowledge to solve practical problems and gain new knowledge. (p. 244)

Reflective information literacy, they define as the

> ability to critically evaluate both the sources and contents of information, and then to make intelligent decisions about if and how to use information based on these evaluations. (p. 245)

And *professional* information literacy is defined as

> the ability to understand and use the specialized concepts and language of a profession or discipline
> as they are understood and used by its practitioners. (p. 245)

A key to developing information literacy across all three of its dimensions, Sterngold and Hurlbert argue, is exposing students to hands-on exercises that make them select, evaluate, and use information of various types from various sources. Likewise cognizant of the increasing importance of information and information systems in marketing practice, Ghandi and Bodkin (1996) have proposed a still more dramatic transformation of the marketing curriculum, the development of new systems focused courses and of a new Marketing Information Systems (MkIS) track within Marketing.

Having recognized that their Marketing graduates were not adequately prepared to acquire and critically evaluate information using technologies widely available to practitioners, the Marketing faculty at [University Name] decided to restructure their curriculum along lines suggested by Ghandi and Bodkin (1996), Sterngold and Hurlbert (1998), and others (see [citation of authors to be added after review process] for complete details). This restructuring involved the creation of an MkIS concentration in Marketing and the previously mentioned simultaneous expansion of overall coverage but narrowing of immediate focus in the traditional Marketing Research course.

MARKETING RESEARCH COURSE

Traditionally, Marketing Research has been a one-semester course, typically taught at the junior or senior level, that covered research design, secondary data analysis, various methods of primary data collection, including survey and experimental designs, questionnaire design and development, and a review of basic statistics and data analysis approaches. Many universities have required a basic statistics course as a prerequisite for Marketing Research. However, there has usually been a gap of one or more years between the initial exposure to statistics and matriculation in Marketing Research. Consequently, many students have forgotten much of what they learned in their basic or business statistics course by the time they take Marketing Research. Thus, many students enter Marketing Research ill prepared for the material, which often results in a negative experience in the course (Nonis and Hudson 1999).

Stearns and Crespy (1995) suggest that this lack of preparation is rooted in a larger problem and, therefore, recommend a radical change in the process by which students are taught to analyze business information and make marketing decisions. Using King, Wood, and Mines' (1990) three-stage learning hierarchy (see exhibit 1), they identify a stage 2 gap in the pedagogical process between the stage 1 course (Principles of Marketing) and stage 3 courses (e.g., Marketing Research, Marketing Management). This instructional gap leaves students unprepared for advanced marketing courses. To fill this gap, they propose the creation of a new, stage 2 course that could be taken

between Principles and the more advanced courses. This Marketing Analysis (p. 25) course should stress the evaluation of marketing information and the use of basic analytical tools. It should help students recognize the content and structural form of marketing problems, cover measurement issues, including validity and reliability, discuss statistical inference, sources of error, estimation of population parameters, and decision theory.

	Exhibit 1 **Application of Three Stage Learning Hierarchy in a** **University's Marketing Curriculum**	
	King, Wood, and Mines (1990) Three Stage Learning Hierarchy, as used by Stearns and Crespy (1995)	Example of Application in a University's Marketing Program Curriculum
Stage 1	Reflects the assumption that knowledge is either gained by direct personal observation or transmitted from an authority figure. Such knowledge is assumed to be absolutely correct and certain.	Principles of Marketing: Introduction to marketing frameworks, concepts and practices through lecture and discussion
Stage 2	Reflects the assumption that knowledge is gained through evaluating the available evidence and that, although judgments may involve some personal and often idiosyncratic evaluation of data, certain concepts aid the decision makers in their evaluations.	Market Database Development: Extensive hands-on laboratory training in the use of database and statistical software tools in business decision making. Problems and procedures tend to be well defined.

Stage 3	Represents the most advanced set of assumptions that are used in solving ill-structured problems. This stage reflects the assumption that interpretations must be grounded in data and, more importantly, that the interpretations themselves must be evaluated to determine the truth-value of a knowledge claim, using such criteria as conceptual soundness, degree of fit with the data, and parsimony.	Survey Research, Data Mining, Strategic Internet Marketing, Marketing Management
		    Application of research methods in a consultative or otherwise unstructured real world environment.
		    Students apply concepts and tools learned at Stages 1 and 2 to define and solve unstructured problems.

Marshall (1996) identifies another problem with the traditional Marketing Research course. It places, he says, too great an emphasis on primary data collection, too little on the vast amount of secondary data available in existing company databases or online. Primary data collection is usually expensive and project oriented. Secondary data, particularly internal secondary data, is relatively inexpensive and increasingly ubiquitous. Its use is increasingly a routine and yet critical part of marketing operations. It has become, in McKim's (1999) words, the "newest currency" of business. It is, therefore, especially important that Marketing graduates be prepared to analyze and make decisions based on secondary information. Marshall, therefore, suggests that less attention be

devoted to primary data collection in order to clear space in Marketing Research courses for additional attention to the analysis of secondary data and other MkIS issues.

Like Marshall (1996), Catterall and Clarke (2000) criticize traditional Marketing Research pedagogy, arguing that it ignores the real needs of students. They suggest that current textbooks overemphasize the *ad hoc* data collection typical of primary research and pay too little attention to the growth area, the continuous research that focuses on the analysis of data generated in ordinary business operations. Most students, they claim, will have to deal with large amounts of internal secondary data. And while they will purchase and use external secondary research, few will become market researchers themselves and produce the primary marketing research that receives so much textbook and course attention.

The dominant importance of secondary data is a function not only of the fact that internal secondary data is an inevitable byproduct of computerized business operations but also of the fact that search engine technologies are making it very easy to gather large quantities of relevant external secondary data on competitor activities and on industry and consumer trends (Siegel 2000). Unsurprisingly, students who know how to access, manipulate, and interpret internal and external secondary data are in great demand (Heckman 1999). Thus, database technology skills have become increasingly important, for they allow marketers to extract usable information from the terabytes of data already available on consumer behaviors. Using the data captured in existing databases, marketers can identify untapped market niches (Palmquist and Ketola 1999), even targeting individual consumers in one-to-one campaigns (Hu 2000). Thus, a focus on database capture and analysis of secondary data would seem to be an especially important part of future Marketing Research courses.

MARKETING RESEARCH AT [UNIVERSITY NAME]

The Marketing research course taught at [University Name] prior to the fall 1999 semester had many of the problems described above: ineffective teaching of statistics to students who were ill prepared for the course content, heavy emphasis on primary survey research at the expense of secondary data analysis (the vast body of data in company databases and on the Internet was virtually ignored), and students who left the course feeling ill-prepared for their future roles as marketing managers. Thanks in part to the university's longstanding commitment to and experience with assessment, faculty were aware of these and other shortcomings and, therefore, decided to restructure both the course and the major. The traditional catchall Marketing major was eliminated. It was replaced by three more narrowly focused concentrations, Business to Business Marketing, Business to Consumer Marketing, and Marketing Information Systems. Marketing Research, as it is traditionally taught, was not required for any of the three concentrations, and the course was eliminated.

The traditional Marketing Research course was eliminated not because faculty judged information about the marketplace to be unimportant. On the contrary, it was judged to be so important that the marketing program could no longer settle for the inadequate traditional course. Faculty were determined to give all students a substantial experience with the collection and use of non-quantitative data (a topic that had received little attention in Marketing Research), a substantial experience with the construction and use of databases (another topic that had previously received little attention), and a deeper engagement with quantitative data analysis--the use of statistics to evaluate data and answer marketing questions. They wanted to make available, as well, a significant experience with data mining, data collection on the Internet, and more in-depth training in primary data collection. Clearly, all of this material could not be contained in a single course. It had to be parceled out across several courses, some being new offerings.

It was apparent to the faculty that if they wanted to give students a significant experience with the collection and evaluation of non-quantitative data, the place to do it was Consumer Behavior. Consumer behavior researchers have made extensive use of non-quantitative, interpretive research methods for more than a decade (Hudson and Ozanne 1988; Sherry 1991), and these methods and their application to the study of consumer behavior are discussed in available textbooks (e,g., Solomon 1999). So the faculty decided to teach qualitative research methods in Consumer Behavior. All sections of this course now contain as a major component a discussion of qualitative research methods and a qualitative research project in which students collect and interpret depth interview and/or focus group data. The project requires that students either show the applicability of existing consumer behavior theories to this complex data or propose theories of their own that highlight patterns of consumer behavior in the textual data.

The other research emphases were to be covered in four new courses: Market Database Development, Data Mining (which covers experimental design and market testing, development and deployment of statistical predictive models, customer lifetime value, RFM, Customer Relationship Management, etc.), Strategic Internet Marketing (which covers online market research, internet search strategies, weblog analysis, search engine positioning, etc.), and Survey Research (which covers primary data collection, questionnaire design, survey sampling, analysis and interpretation of survey-based data, interactions with an external client, etc.). Market Database Development would be required of all students and would be taken in the curriculum immediately following Principles. Focusing on basic database and statistics skills, it would fill the Stage 2 gap identified by Stearns and Crespy (1995). Building upon that Stage 2 understanding, students would be required (in the MkIS concentration) or could opt (in the Business to Business or Business to Consumer concentrations) to receive additional, in-depth instruction in Data Mining, Strategic Internet Marketing, and/or Survey Research, all of which presupposed the database and statistical skills acquired in Market Database Development (Nonis and Hudson 1999). Only the Survey Research course would treat primary data collection and analysis, the traditional focus of Marketing Research courses. And students would come to this traditional material equipped to work at Stage

3, developing a degree of competence in primary data collection that no single, broad course could deliver.

MARKET DATABASE DEVELOPMENT

The conception of the Market Database Development course and efforts to implement and improve it were inspired to a substantial degree by the Direct Marketing Association (DMA; http://www.the-dma.org) and its very active higher education outreach arm, the Direct Marketing Educational Foundation (DMEF; http://www.the-dma.org/dmef/index.shtml). Member businesses of this association have historically been the preeminent database marketers. The faculty's understanding of the increasingly critical role of databases and the statistical analysis of internal secondary data flowed, in part, from the close relationship some faculty had with the DMA and DMEF. And these organizations have played and are playing an important role in our efforts to strengthen the course. As previously mentioned, Market Database Development is placed in the curriculum immediately following Principles to address concerns raised by Stearns and Crespy (1995). Since this course is the most important new addition to the marketing curriculum, its structure and content will be described in some detail.

Course Focus. Market Database Development focuses on training students to use the two most important data analysis software tools—databases and statistical packages. The flow chart in Exhibit 2 shows the sequence of the main course topics, which begin with databases, then move to statistics. Microsoft Access is the specific software package on which students learn how to develop and use relational databases; SPSS is the statistical package on which they learn how to do basic statistical data analysis. Because this course emphasizes hands-on training in the use of the software, it is taught in a computer lab where students have access to Microsoft Access and SPSS.

Texts. Two texts are required: *New Perspectives on Microsoft Access 2000 Comprehensive* (Adamski, Finnegan and Hommel 2001) and *Statistics for People Who (Think They) Hate* Statistics (Salkind 2000). The Access text discusses database concepts and terminology and provides students with step-by-step tutorials in the use of various features of the database management software. The statistics text reviews measurement and then discusses exploratory and inferential data analysis.

Market Database Development is taught as a web-enhanced course. The texts are supplemented with materials posted to the instructor's course website in a variety of formats, e.g., PowerPoint slides, Word documents, and HTML links and pages. These materials, developed by the instructor or culled from a variety of sources, play an important integrative role in the course. They are used to illustrate how databases may be deployed to organize data, develop segmentation strategies, and execute marketing campaigns. They help students understand the context and use of the specific skills that are the main focus of the course. Also posted to the website are numerous in-class and homework assignments that provide the very necessary hands-on component of the

course. Access and SPSS data files are posted on the website with the assignments. The typical outline of the course is described in some detail below and is illustrated more briefly in Exhibit 3.

Exhibit 2

Market Database Development Course Flow Chart

Overview of Marketing Information Systems

↓

Review of Market Segmentation Theory

↓

Introduction to Database Marketing

↓

Database Development and Manipulation

↓

Statistical Analysis of Data

↓

Putting it All Together: Applications of Database Marketing
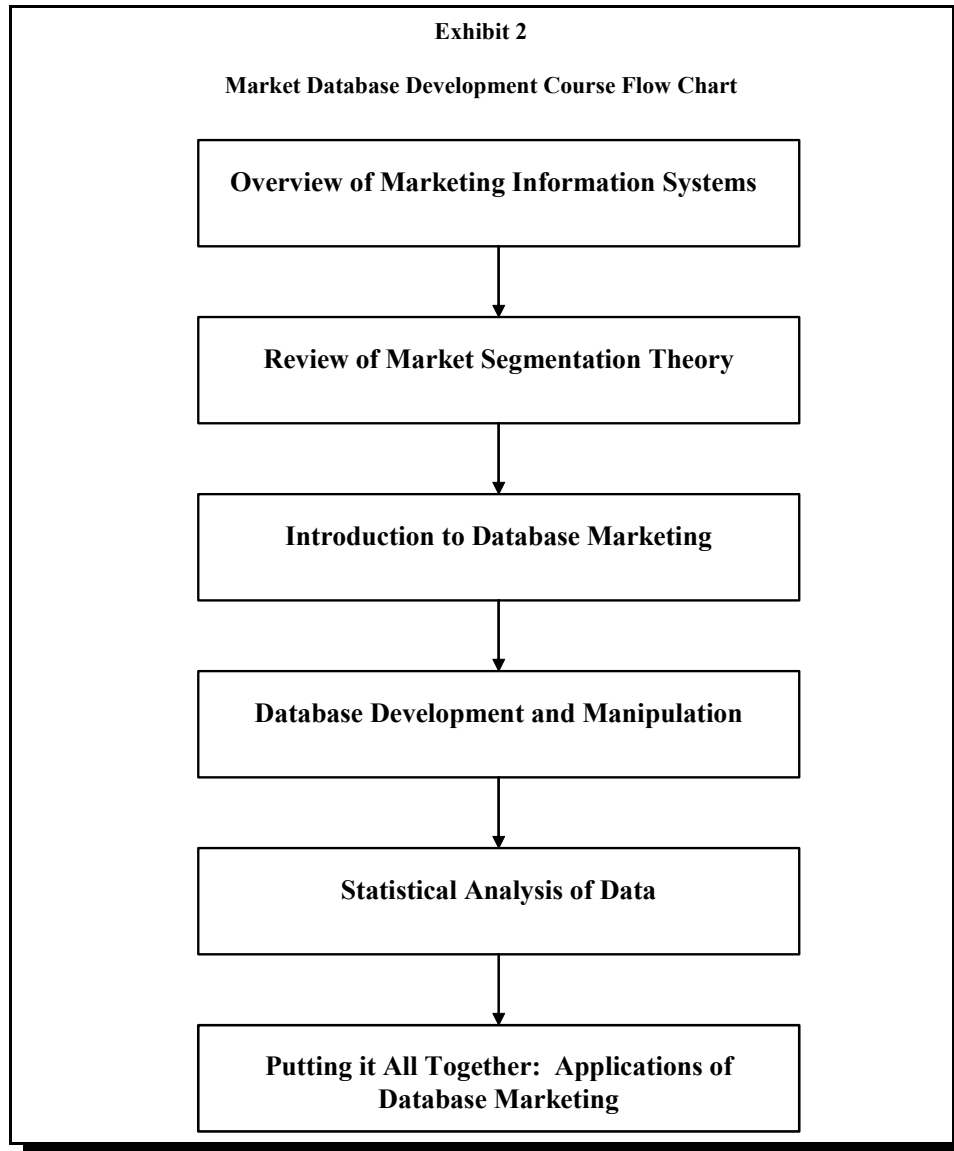
Course Outline. The first half of the course focuses on the development and use of marketing databases. The first, primarily conceptual week provides an overview of database marketing and the course. In courses with an applications orientation, it is especially important that students understand how the specific tools and techniques are situated within the broader discipline

and practice of marketing. So instructors help students understand that information is an essential asset for marketers as they engage in the fundamental marketing function—the arrangement of mutually beneficial exchanges between buyers and sellers (Baggozzi 1975). Instructors help students understand that information systems in general and database and statistical packages in particular are essential tools in the efficient management of information and, therefore, in the optimization of the exchange process.

Exhibit 3 Topics Covered in the Market Database Development Course	
Week	**Topics Covered**
1	Course Introduction – includes course overview, introduction to marketing information systems, introduction to use of databases in marketing, and review of market segmentation Database Technology Component
2	Conceptual Overview – includes database planning and design, normalization of tables and introduction to Microsoft Access
2 - 3	Development, Modification and Manipulation of Tables – includes creation of tables, understanding of table formats and properties, entering data into tables, modification of existing tables, and manipulation of data in tables
3	Relationships – includes understanding primary versus foreign keys, types of relationships in a database, enforcing referential integrity, and understanding join types
4 - 6	Querying the Database – includes development of select queries, crosstab queries, parameter queries, action queries, and introduction to Structured Query Language (SQL)
7 - 8	Data Output Mechanisms – includes developing forms, creating reports and development of data access pages Statistical Analysis Component
9 - 10	Conceptual Overview – includes measurement issues, understanding data types (nominal, ordinal, interval and ratio), and choosing the appropriate analytical technique
11	Introduction to SPSS – includes data and variable views, importing files from an Access database to SPSS, data transformations, and frequencies and descriptive statistics
12 - 14	Statistical Significance and Testing - includes sampling, hypothesis testing, understanding statistical significance, statistical significance and managerial relevance, parametric tests (including t-tests and ANOVA), non-parametric tests (such as chi-square, Kruskal Wallis, etc.), and within and between subject designs
15	Course Conclusion – includes integrating the database technology and statistical analysis components of the course in a market segmentation framework

Instructors also review in some detail the important role that market segmentation plays in the optimization of the exchange process. Students are reminded that marketers may enhance quality of life (and earn outsized profits) if they can identify populations with unmet needs and arrange to meet those needs with tailored and targeted products. Various business development strategies are reviewed, with special attention to the importance of acquiring new customers and further penetrating existing markets. Students come to understand the central role that database marketing plays in the actual practice of the market segmentation they have learned about in Principles of Marketing and other business classes. Thus, Market Database Development is positioned as a course that will give students the database and statistical skills they need to move beyond the knowledge that market segmentation is desirable to the actual practice of market segmentation.

During the second and third weeks of the class, the students are introduced to database terminology and concepts that provide the conceptual underpinning for the database component of the course, e.g., the distinction between data and metadata. They are also introduced to the process of planning and designing relational databases. While most marketing graduates will not be directly responsible for the design of marketing databases, they need to understand the basic logic of relational design so that they can communicate with their firm's market database developers, helping the developers understand the needs of marketing managers while also understanding, themselves, the constraints the database developers face. Students gain this knowledge of design issues, in part, by completing an assignment in which they normalize a database. Normalization ensures that the entities and attributes captured in the database are embodied in tables in such a way that they are grouped on functionality and are minimally redundant. During the second week, students are also introduced to Microsoft Access, the specific database management program taught in the course. The students begin to learn about the capabilities of the program as they are exposed, in turn, to each of the various *objects* in Access.

The third week of class is dedicated to the development, modification, and manipulation of tables within Access. The students learn how to create new tables by importing data from other programs such as Microsoft Excel. They also learn to create tables using Access *wizards* (an embedded step-by-step module for novice users) and *design view* where the user enters all of the table criteria (a feature provided for more advanced users). They learn to select the appropriate field types and formats, then how to use mask and input validation to expedite and avoid errors in data entry. Once the tables are created, students learn how to insert and delete or otherwise modify existing fields and records, e.g., by resizing fields or changing field criteria.

During this week, students also learn the functions of primary and foreign keys in a relational database. This leads directly to a discussion of how relationships are created among tables and of the various relationship types: one-to-one, one-to-many, many-to-one, and many-to-many. Students also learn about referential integrity (a set of rules that ensure a database will be free of unlinked

data fragments) and about various ways of joining tables in Access, e.g., through inner and outer joins.

During the fourth, fifth, and sixth weeks of class, students learn how to query tables within a database, a critical skill in the identification and targeting of market segments. Queries are particularly important in marketing because they allow the users to explore the data by asking *ad hoc* questions, questions that may, if intelligently posed, identify subpopulations with unmet needs. They may also be used operationally, to select records suitable for a particular targeted campaign. In this section of the course, students learn, through extensive hands-on exercises, how to establish scoping criteria and carry out select, crosstab, and parameter queries. They also learn to use various *action* queries (*delete, update, append,* and *make table*). Students are also introduced, briefly, to structured query language (SQL). They are not taught to program queries in SQL but are made aware that SQL resides behind the queries they develop using the Access query interface.

The next two weeks of the course focus on the development of forms, reports, data access pages, and macros. Forms, reports, and pages are tools used to present the data in tables or queries in a variety of output formats. Forms facilitate data entry and the presentation of information on computer monitors. Reports make possible a hierarchical ordering of the data that presents data attractively and clearly on paper. Pages allow data to be reported internally on a company's intranet or externally on the Internet. This portion of the course concludes with a limited discussion of macros.

The second half of the course focuses on analyzing the information contained within databases. In many respects, it is positioned as a sophisticated extension of the query function in a database. Students come to understand that a statistical package offers many options--beyond those available in the database crosstab and total queries--for analyzing data with an eye to market segmentation. Thus, statistical logic and procedures are presented as critical tools in data mining, market analysis, and marketing management decision-making.

The ninth week of class begins the transition from database development to statistical analysis. The section begins with a review of the levels of measurement (nominal, ordinal, interval, ratio). The class learns the logic that differentiates the measurement levels and, more importantly, how to identify each level of measurement for fields of an existing database. The measures of central tendency and spread are reviewed along with various formulas for calculating key measures, e.g., the standard deviation.

During the tenth week of class, the students are taught how to select an appropriate analytical technique when given particular kinds of data and particular research questions. This section of the course links the posing of research questions to measurement and experimental design issues. Thus, students learn how to select an appropriate statistical procedure when confronted with particular measurement levels (nominal, ordinal, interval or ratio), design types (within, between-subjects), and research or segmentation questions, i.e., a need to summarize data or test for group differences

or identify associations between variables. Students learn to select appropriate procedures by applying decision trees in scenario analyses that feature typical business problems and issues

In the eleventh week of the course, the SPSS statistical package is formally introduced. Students learn how to create an SPSS data file (both from scratch and by importing data from Excel and Access files) and how to compute new variables from existing variables. This and the subsequent three weeks of the semester are allocated to sampling distributions, hypothesis testing, and significance testing. Having previously discussed the logic one uses in selecting statistical tests, students now select and use a variety of tests, both parametric (i.e., independent and paired samples *t* - tests, within and between subjects ANOVAs, the Pearson correlation) and non-parametric (i.e., two independent and two related groups, K independent and K related groups, the Chi-Square test, and Spearman Correlation). Learning to run the tests in SPSS is an important but small part of this section of the course. (SPSS is not difficult to master). Most of the time is devoted to learning how to interpret the statistical outputs, how to draw out their implications for management decision making, particularly with respect to the development of market segmentation strategies. Thus, the emphasis is on application, not mechanical calculation (Nonis and Hudson 1999).

In the final week of the course, an effort is made to integrate the database and statistics portions of the course so that students come to see Microsoft Access and SPSS (and competitive alternatives) as complementary tools that may be used to develop market segments and carry out a targeted marketing strategy.

In-Class Assignments, Homework, and Integrative Projects. Grades are based on three course components: assignments (completed in-class or as homework), examinations, and integrative projects. Typically, the weights assigned to each of these elements for a student's final grade (actual weights vary somewhat by individual instructor) are as follows: (1) in-class and homework assignments, 20% to 25%, (2) examinations, 40% to 50%, and (3) projects, 30% to 40%.

It is critically important for students to complete a large number of regularly scheduled, hands-on assignments in this course, both in-class assignments that demonstrate the student's ability to perform certain tasks within a specified time and homework assignments that can be more extensive and require the integrated use of a wider range of Access and SPSS procedures. Assignments are graded to give students both an incentive to do them and feedback on whether or not they are developing the skills taught in the course. Focusing as it does on software tools and well-defined analytical processes, this course makes it relatively easy to create assignments that build incrementally, process by process, skill by skill (see Exhibit 4 for an outline of sample assignments). Moving incrementally through the course material and engaging in the hands-on use of the tools and in practical decision making at each successive stage, students generally become confident in their ability to apply to business problems the many database and statistical procedures covered in the course. Naturally, they cannot be made fully aware of the complexities of market segmentation and target marketing in a single, narrowly focused course. Most come to a deeper

awareness of the uses and limitations of databases and statistics only in subsequent Stage 3 courses where they must confront relatively unstructured business problems.

Depending on the instructor's preference either two or three examinations are given during the course. The first exam covers the database portion of the course, the second, the statistical portion. Some instructors include a final exam that generally covers both topics. All three exams have two parts. The first part, which is generally multiple choice or short answer (but which also includes one or two essay questions in some sections), focuses on assessing the students' understanding of conceptual material presented in the class, e.g., the distinctions between data and metadata, between queries, forms, and reports, between different kinds of queries, different measurement levels, and different statistical tests. The second part of the exam requires students to use the various Access or SPSS procedures they have learned to answer a series of questions. This second part of the test demonstrates that the student can actually apply the concepts covered in the first part as they use Access and SPSS.

Exhibit 4
A Sampling of Assignments Used in the Course

Database Assignments

- *Database Normalization Assignment* – In this assignment, students are provided with data elements and asked to produce a series of normalized tables that are grouped in functionality and are minimally redundant.
- *Select Query Assignment* – In this assignment, students develop simple select queries using various criteria, sorting and grouping of data, and use aggregate functions.
- *Action Query Assignment* – In this assignment, students develop make-table, update, append and delete queries.
- *Forms Assignment* – In this assignment, students create forms to view data, as well as update data directly in tables.

Statistical Analysis Assignments

- *Choosing the Right Analytical Technique Assignment* – In this assignment, students are provided word problems and must choose the appropriate level of measurement and the analytical technique that is appropriate for the situation described.
- *Manipulating Data and Descriptive Statistics* – In this assignment, students use SPSS to compute and recode variables, as well as run frequencies and descriptive statistics. The students must also be able to correctly interpret the resulting SPSS output
- *Hypothesis Testing Using T-Tests* – In this assignment, students must review the hypothesis provided and choose the appropriate t-test (one-sample, paired sample, independent samples), run the test, interpret the output and make the appropriate determination of the hypothesis.

One or two integrative projects are also assigned. The projects are generally group-based, with teams of two to three class members. This provides the students with a simulation of real-world problem solving--an opportunity to use the ubiquitous database and statistical package software tools in the still more ubiquitous collaborative work environment. In sections where two projects are assigned, the first is a database project. Using Access, students help a fictional organization answer various business questions using internal secondary data. They generate reports that motivate/support their decisions using the *report* object in Access. In the second project, they do much the same thing using SPSS. In some sections, the two projects are combined in a single project that requires the integrated use of Access and SPSS.

Lessons Learned (So Far)

Market Database Development was first offered at [University Name] during the fall, 1999 semester. As of this writing (spring semester, 2003), six full student cohorts have taken the course. The first cohort graduated in May 2001, so it is still too early to assess the overall impact of this relatively new course offering. Nevertheless, certain things have been learned in the process of developing and implementing this course (see Exhibit 5 for a summary of the lessons learned to date).

Exhibit 5 A Summary of Lessons Learned (So Far)		
Issue	**Problem**	**Solution(s)**
Faculty Staffing	Marketing faculty expertise and/or experience in database technology is limited	● Provide training in database technology to existing faculty ● Extensive sharing of course materials ● Recruit faculty who are willing to learn database software
Multiple Sections and Instructors	Ensure that there is consistency across sections/instructors	● Instructor meetings ● Extensive sharing of course ideas, materials and databases.
Textbook Materials	Lack of a suitable textbook that integrates database management and statistical analysis	● Use two textbooks, one for Access and one for statistical analysis/SPSS ● Faculty emphasize integration more heavily ● Development of databases that can be used in both portions of the course
Computer Lab Resources	The course needs to be taught in a computer lab in order to meet the required pedagogy.	● Classes have been moved to computer lab

One fact became clear very early on as the course was conceived and initial development began: staffing issues would be critically important. Ultimately, the program found it necessary to take a "grow your own" approach to staffing. Candidates with a Ph.D. in Marketing and extensive knowledge of database technology were rare and expensive. And since the course was to be required of all marketing majors, three to six sections would need to be offered each semester. Thus, the course could not be implemented without a commitment from existing faculty to develop new competencies in the use of statistical packages (where all had some previous training) and database management systems (where most had no previous training). A sufficient number of faculty were willing to commit to upgrading their skills, so the project was undertaken. Actually developing the requisite new skills then required a heavy investment of faculty time. That commitment of time was minimized to some extent through extensive sharing of lecture notes and course materials. And in faculty recruiting since the advent of the new curriculum, the program has sought out candidates who were at least technophilic if not explicitly credentialed as database marketers. It has succeeded in hiring three technophilic new faculty who came to [University Name] in part because they were excited by the new curriculum. The program is hopeful that the hiring of technologically capable faculty will become less difficult as Ph.D. programs become more attuned to contemporary marketing practice and adapt their programs accordingly, making marketing technology an integral part of their curriculum.

Another concern in teaching a class with multiple sections and multiple instructors was the issue of consistency. While consistency across sections can be an issue in any course, it was critically important in the case of Market Database Development because the course provides the foundation for follow-on, stage three courses. While permitting faculty members to have their own pedagogical style, the Marketing program wanted to ensure that the course objectives were tightly specified and sufficiently addressed in all sections. To achieve this end, objectives were described in considerable detail (a task facilitated by the logical and/or procedural subject matter) and faculty committed to work not in a vacuum but, rather, collaboratively, sharing materials, assignments, and databases to help ensure consistency.

Since Market Database Development was a discontinuous innovation in the marketing curriculum, no resource materials explicitly adapted to it were available. The most problematic deficit was the lack of a suitable textbook that integrated training in the use of a database management system with a review of basic statistics and training in the use of a statistical package, all within a marketing context. As previously mentioned, separate Access and SPSS texts were available and were adopted. They have not, however, proven to be entirely satisfactory. The statistics text initially adopted, *SPSS 10.0 Guide to Data Analysis* (Norusis 2000), presupposed too much background knowledge to be entirely useful for our undergraduates and was dropped. The text adopted in its place, *Statistics for People Who (Think They) Hate Statistics* (Salkind 2000), is well written and pitched at the right level for our undergraduates, but it does not use marketing examples to develop the statistical principles it discusses.

This lack of integration in the textbooks has affected pedagogical outcomes. Many students have had a difficult time seeing the relationship between the two halves of the course. They see it as having two entirely discrete sections, database and statistics. As of this writing, the faculty teaching the course are working to highlight for students the complementary roles of Access and SPSS in the market segmentation and target marketing process. The Direct Marketing Association also makes available for a nominal fee several large databases that may be used for classroom instruction in database marketing and in the statistical analysis of marketing performance. The course instructors are using these databases generated by successful database marketers in an effort to more fully integrate the database and statistics parts of the course. Instructors are also developing databases of their own suitable for extensive use in both the database and statistics portions of the course.

In recent iterations of the course, students have been asked to move data more frequently between the database and statistical package applications. And one faculty member has experimented with weaving together the two sections of the course, covering databases through queries, then turning to SPSS and explicitly treating the statistical portion of the course as an extension of the query function in Access, and finally, returning to Access to conclude with forms and reports. The effort to more fully integrate the use of databases and statistical analysis will continue.

Another factor proved to have a still larger effect on pedagogical outcomes than the lack of suitable textbooks—the lack of a suitable computer lab. Since none of the university's computer labs were set up specifically to support classroom instruction, the course was initially taught in a regular classroom where the students did not have access to a computer. Instructors demonstrated Access and SPSS procedures on screen. Students then replicated the procedures in student labs when doing homework assignments.

Faculty knew this approach was not optimal and, eventually, arranged to teach the course in student labs where every student had access to a computer during class. In spite of the fact that available student computer labs were not designed and were not entirely suitable for classroom instruction, pedagogical outcomes improved dramatically when instruction was moved to a lab. While teaching in a computer lab certainly has its issues and constraints (e.g., different teaching styles need to be employed, equipment can and does fail, students work at different speeds, online distractions, etc.), teaching the course in a lab allowed more material to be covered, and all covered material was more deeply learned. Thus, the Marketing program now regards hands-on use of computers during classroom instruction as an essential part of this course.

THE IMPACT OF THE MARKET DATABASE DEVELOPMENT COURSE

As previously mentioned, Market Database Development is still relatively new. But while it is too early to assess the long-term impact of the course, the Marketing program has been able to

evaluate success to date using a variety of assessment mechanisms.   In addition to using the usual student course evaluations, the program has assessed the value of this course through discussions among Marketing program faculty, qualitative and quantitative exit surveys of graduating seniors, and an annual survey of internship employers and on-campus recruiters.

As they evaluate their instructors, students in the Market Database Development course often comment positively about the applied nature of the course. The following comments are typical:

♦   In this class we applied marketing concepts to a real life situation. I learned marketing skills that I will actually use in the real world.
♦   I found the class to be one of the most useful I have taken so far at school. The projects and assignments are designed so that we actually get to put into use all the things we have been studying, not just regurgitate them back onto a test.
♦   The class was quite challenging and required a lot of continuous work. At the end of it all, I feel that I learned and accomplished a lot.

The course has also been beneficial to faculty members teaching courses that follow Market Database Development. As one faculty member noted: "I don't have to review basic statistics anymore. Students are ready to go, so I can cover more material at a more in-depth level than I was able to before we had the course." Another faculty member adds,

♦   The nice thing about Market Database Development is that I don't have to spend extensive class time in my Data Mining course discussing databases and how they're used. Since the students already have this background coming in, I can immediately move on to more complex issues such as data warehousing. I also know the students come in knowing how to run and interpret basic statistics. This means I can move into the more advanced statistical procedures and spend more time there rather than having to review the more basic concepts.

In 2001, the Marketing program began to conduct an annual study of graduating seniors' satisfaction with the program. The study includes both qualitative research, in the form of focus groups, and a quantitative survey. In the focus groups, students noted that their understanding of databases and their ability to analyze data statistically gave them a differential advantage over students graduating from other schools. For example, one student commented, "the Marketing program is progressive, very up-to-date, and offers undergraduate courses, like the market database and data mining classes, that are not taught at other schools." The quantitative survey results also demonstrated the value of the Market Database Development course. Students were satisfied with the Marketing program's ability to teach them how to work with databases and conduct statistical analyses. And the database and statistics items were significant predictors of overall satisfaction with how well students had been prepared for a successful career ($r^2 = .279$).

There is a great deal of evidence that the practical skills taught in this course are highly valued by employers (Arnold 1998; Davis, Misra, and Van Auken 2000; Gault, Redington, and Schlager 2000). This fact has been confirmed for students in their internships and entry-level jobs.

Summarizing student reports on their internship experiences, our internship program director recently sent out the following e-mail comment:

♦ I have been doing exit interviews with my internship students all week, and I can say without hesitation that the Access component of [Market Database Development] has been extremely valuable to these interns. I usually get a variation of this story: "I came in and showed everyone how to do Access. I was *the* Access guru, and now they want to hire me full time." The students are usually thrilled with the prospect. A common lament is, "I wish I had paid more attention while in class."

And students who have graduated and begun their careers have found that their data analysis skills do differentiate them from others and make them more valuable to their firm. Thus, one recent graduate wrote in a letter:

♦ Recently, because of the convenience of Microsoft Office, upper management has been trying to dump the company's database into Access to work with it. (It is actually a database much like the models we worked with, comprised of a series of construction products, contact names, prices, etc.) They want to use it to give them transaction info. As you can probably imagine, NO ONE here knows Access, including our "technical support" guy. As a result, I have been helping management deal with the database. I actually solved a major problem that allowed the rest of the database to work last week…. I tell you this story not to brag, but to let you know that your class helped someone--who once thought she was hopeless with computers--discover that they are not that scary after all. I feel very fortunate and marketable now because I learned how to work with Access.

In addition to conducting exit interviews with student interns, the program has recently begun to conduct surveys of internship employers and on-campus recruiters. In these surveys, respondents rated the students from the Marketing program as "much better than average" in their information technology and analytical skills. Students received their highest ratings on these items.

In the coming academic year, recent alumni will be surveyed to get more formal and comprehensive evidence on the impact of Marketing program curriculum changes on student careers. But given the rapidity of changes in technology and marketing practice and the consequent necessity of continuously adapting course content, the curriculum innovation cycle for Market Database Development will always have a shorter duration than the formal curriculum assessment cycle. Consequently, though the course may be fairly stable in its broad outlines, faculty judgment and anecdotal evidence must bear a heavier than usual burden in the assessment of course effectiveness.

CONCLUSION

The actual practice of marketing is, increasingly, inseparable from the use of technology to manage information. People who can use information technology to solve problems are moving "to center stage in the global economy. They are fast becoming the new aristocracy" (Rifken 1995, p.

174). Information technology skills coupled with a strong analytical background will increasingly provide students with an important point of differentiation and competitive advantage (Atwong and Hugstad 1997; Benbaum-Fich et al 2001). If they are to prepare students to function effectively in this new, information-intensive environment, academic programs in Marketing must change their curriculum to more fully deal with technology and information management issues. Judging from early assessment efforts, the achievement of these important pedagogical objectives would seem to be facilitated by a curricular model that incorporates a Market Database Development course within the larger three stage learning hierarchy of King, Wood, and Mines (1990).

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ACADEMIC PROFESSIONAL CONFERENCES: TARGETED FOR EXTINCTION AS WE KNOW THEM?

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ABSTRACT

In recent years, attendance at academic professional meetings has, for the most part, declined. Given that the benefits of attendance are usually substantial, this paper seeks to identify some causes of the decline in attendance and discusses some logistical issues related to organizing and attending professional meetings. The paper concludes with some recommendations for those who may plan academic conferences in the future and discusses an alternative to actual conference attendance which seems to be growing in popularity – the "virtual conference."

INTRODUCTION

Professional meetings provide an opportunity for social interaction as well as the exchange of information within a profession. More specifically, they provide opportunities for networking, provide a setting conducive to idea sharing and to updating oneself on current research on topics of interest, and allow presenters to get feedback on their research prior to journal submission. (Cooper, Finney & Malone, 1998; Brookshire, 2001; Fischer & Zigmond, 1999). Based on anecdotal observations of a number of long-time attendees (at regional American Accounting Association meetings) and a review of attendance statistics maintained by the American Accounting Association (AAA), it appears that attendance at regional and national AAA meetings has been declining at a rate inconsistent with changes in membership numbers.

Given the benefits of attending such meetings, this paper provides the results of a survey which sought to identify factors influencing accounting educators' decisions to attend or not attend regional AAA meetings and presents recommendations to enhance the regional meeting. Additionally, issues such as conference scheduling and virtual conferencing are discussed.

THE SURVEY

Based on the results of a prior study (Cooper, Finney & Malone, 1998) and the prior beliefs/experiences of the authors, a questionnaire was developed to survey the views of accounting educators in the Southeast region of the AAA. For many years the Southeast region has had the

largest membership of any region within the AAA and it retains that distinction (American Accounting Association, 1999). Questionnaires were mailed to 1,100 of the AAA members within the Southeast region. Surveys were completed and returned by 158 faculty members, for a response rate of 14.4%.

SURVEY RESULTS

The typical respondent had been a faculty member for 15 years and a member of AAA for 15 years. Thirty percent of those responding (n = 152) were full professors, 38% associates, 28% assistants, and 4% were instructors. Seventy-six percent (n = 153) were CPAs. With regard to teaching, 62% of the respondents (n=149) taught "all or mostly undergraduate courses," 16% taught "all or mostly graduate courses," and 22% taught an equal mix of graduate and undergraduate courses. One hundred six respondents taught at AACSB accredited schools; of this group, 64 respondents were at schools that had separate accounting accreditation. Fourteen respondents were at ACBSP accredited schools. (It should be noted that not all respondents responded to all questions, thus the number of respondents to each question in the following discussion is shown parenthetically).

The survey instrument listed the years and locations for the eight Southeast regional meetings held from 1990 through 1997. Faculty members were asked to identify which, if any, of these meetings they had attended. Seventy-seven percent of the 158 respondents had attended at least one of these eight meetings. Additionally, 43 of the respondents indicated that during the 1990-1997 period they had attended one or more regional AAA meetings outside the Southeast region. Thus, it was concluded that the majority of respondents had attended the Southeast AAA in recent years and therefore possessed sufficient knowledge regarding the nature of the meetings to make valid comments about the meetings. It should be noted that seven of the 37 respondents who had not attended any of the eight Southeast regional meetings were among those attending other regional meetings.

As previously noted, part of the motivation for this study was the belief that attendance at regional AAA meetings has declined over time. The questionnaire asked faculty to compare their attendance at regional meetings in the 1980s to their attendance in the 1990s. Thirty percent (of n = 149) indicated that they had been a faculty member for too short a time to make the comparison. Of the seventy percent (n = 104) who could make the comparison, 45% attended less frequently, 41% about the same, and only 9% indicated they were attending more frequently. Thus nearly half of the respondents had decreased their frequency of attendance; and five times as many of the respondents had decreased the frequency of their attendance as those who increased their frequency. With regard to trends in the value of attending regional AAA meetings, faculty were asked to assess the current value to them personally of attending. Of respondents (n = 132) who could compare the value over time, approximately 39% of the respondents indicated the value of the regional meetings

to them has declined over time, 56% indicated the value remained about the same, and only 5% indicated the value to them has increased.

The study sought to identify reasons why faculty attend a particular regional meeting. The survey instrument listed thirteen specific factors which the authors felt may influence the attendance decision. Most of the factors were similar to those used in a related study (Cooper, Finney & Malone, 1998). Respondents were also given the opportunity to add and identify "other" factors influencing their attendance decision. Faculty members were asked to select the five most important factors in their decision to attend a particular regional meeting. One hundred thirty-five faculty members completed this question and selected a mean of 4.7 factors. Only seven respondents listed any "other" factor. The geographical location of the meeting was clearly an important factor as it was selected by 83% of the respondents. Marsh (1989) identifies place, program, and presenters as critical items in planning for successful conferences. Presenting a paper (69%) and reimbursement of expenses (51%) were the only other factors identified by at least half of the respondents. It is interesting to note that only 30% of the respondents selected continuing professional education as one of their five most important factors despite the fact that 76% of the respondents were CPAs. The factors and their frequencies are reported in Table 1 below.

Table 1	
Reason for Attending	# of Respondents
Geographical location of the meeting	112
Presenting a paper	93
Expense reimbursement	69
Research related networking & sessions related to research interests	54
Program topics	52
Non-research related networking	42
CPE	41
Find out what's happening on academic scene (grapevine)	41
Serving as moderator/discussant	38
My friends are attending	35
Total cost (to me)	32
Planned social and/or meal functions at the meeting	7
Opportunity to mingle with "big names" – research, AAA , or otherwise	6
"Other" (various)	7

A second question of interest was the identification of factors that influence the decision not to attend a meeting. Consistent with the results of the question looking at the factors influencing attendance, geographic location of the meeting was the most frequently cited (63%) factor. Lack of funding and not being on the program were the other factors identified by more than fifty respondents. Since these results closely parallel those shown in Table 1, details are not presented here.

In a recent study by Backmon, Kiel & Malone (1999) that looked at the allocation of travel funds by accounting administrators, it was determined that at 21% of the participating schools, funds allocated to faculty travel for professional meetings has decreased in recent years. To determine the extent to which funding may affect attendance at regional AAA meetings, we asked faculty three questions. In the first question, respondents were asked to indicate the extent to which their travel and registration costs (to attend regional meetings) are typically reimbursed. As shown in Table 2 below, 78% of respondents indicated their expenses would be paid in full if they were a presenter, 49% if serving as a moderator or discussant, and only 29% indicated their expenses would be paid in full if they were not on the program. Over a third of the respondents indicated they would receive no funding if they were not on the program. These figures are very similar to those reported by in Backmon et. al. (1999) where 82% of the schools provided full funding for presenters, but only 41% provided full funding for moderators and discussants. This finding apparently is not discipline-specific, since a study by Wilkinson & Hemby (2000) surveyed members of the Organizational Systems Research Association (ORSA) and the Association for Business Communication (ABC) and reported similar findings.

Table 2: School Reimbursement Practices				
	None	Partial	Full	# of responses
Presenter	2%	21%	78%	135
Moderato/discussant	14%	37%	49%	137
Not on program	34%	37%	29%	136

Are the reimbursement practices different at the schools where the non-attendees (those who attended none of the eight Southeast meetings from 1990 – 1997) teach than at schools where attendees teach? It doesn't seem so. With regard to reimbursement for presenters, 70% of the non-attendees (n = 33) indicated their school would fully reimburse presenters, 27% indicated their school would partially reimburse presenters, and 3% indicated presenters would receive no reimbursement. The corresponding figures for those (n = 102) who had attended at least one meeting were 79% full reimbursement, 19% partial reimbursement, and 2% no reimbursement.

Faculty members were asked to indicate whether they were "always," "usually," "sometimes" or "never" on the program when they attended regional meetings. Thirty-one percent indicated they were always on the program (as a presenter, discussant or moderator), 28% indicated they were usually on the program, 25% indicated they were sometimes on the program, and only 15% indicated they were never on the program. This is consistent with the importance of funding in the attendance decision and implies that attendance at regional meetings would be adversely affected by reducing the number of accepted papers and sessions with corresponding decreases in the number of moderators and discussants. The regional meeting program chairs are evidently aware of this as the regional meetings are known for accepting a higher percentage of submissions than does the national AAA meeting.

To gain insight into how different schools viewed attendance and/or participation in regional meetings, two questions were asked. The first asked respondents to indicate their school's attitude about regional meetings. Fifty percent of those responding (n = 154) indicated their school viewed attendance/participation as inconsequential, 21% indicated their school liked to have at least one person from the school in attendance, 28% indicated their school liked to have at least one person on the program, and 1% indicated that their school discouraged attendance/participation at regional AAA meetings. The second question asked faculty to assess the significance of paper presentations at regional meetings in their school's promotion and tenure decisions. Seventeen percent of the respondents (n = 149) indicated these paper presentations had no significance, 42% indicated the significance was minor, 35% indicated the significance was moderate, and 7% said the significance was substantial. Thus, for 83% of the respondents' schools, presentations at the regional meeting have at least some value for promotion and tenure. Given that the new AACSB accreditation standards are mission driven, which removes or redefines the means by which intellectual contributions of faculty members are measured, it will be interesting to see if future participation in professional meetings will carry more weight when this measurement is made. Already some schools are developing new "coding" systems for measuring these contributions (Graeff, 1999).

A final question asked respondents if a change in the format or way regional meeting were conducted would cause them to consider attending more frequently. Forty-nine (31%) of the 158 survey respondents said "Yes" and 52% responded to the open-ended question asking them to identify one or two factors that might be influential in their decision to attend more frequently. Some factors identified by respondents were (a) linking meeting with that of other disciplines (similar to what the Southwest region currently does), (b) include more tax sessions/research, (c) have fewer papers and more panels, (d) have more "big names," and (e) focus more on interests/concerns of two-year schools.

The authors acknowledge that the response rate was fairly low for this survey. It was felt that the relatively low response rate was due, at least in part, to the method of distribution. The survey was included in a packet of information about an upcoming regional meeting that was sent to members. We felt that since many faculty who received packets did not plan to attend the meeting

they probably discarded the entire packet without seeing the questionnaire within the packet. However, we do feel that the responses received gave a fairly accurate picture of members' perceptions and feelings toward these professional meetings.

HOW ARE CONFERENCES AND CONFERENCE PLANNERS RESPONDING TO TECHNOLOGICAL AND DEMOGRAPHIC CHANGES?

Historically, the scheduling of sessions at academic conferences with concurrent sessions was typically done to be as accommodating as possible to the presenters and others on the program. Little attention was paid to the attendee and what his or her preferences might be. As a result of complaints from attendees about not being able to attend certain sessions of interest because they were scheduled at the same time as another session of interest, meeting planners began seeking a remedy to this recurring problem. Thanks to improvements in scheduling software, planners are now able solicit session preferences from participants and incorporate these preferences into the conference schedule (Thompson, 2002). Since attendee satisfaction is one key to a successful meeting, the use of scheduling software that maximizes each attendee's ability to attend sessions of interest while minimizing conflicts certainly should increase the overall satisfaction of presenters and attendees alike. However, while this software may improve things for those attending a meeting, it does nothing for those that do not attend due to lack of available travel funds or for other reasons. Planners have turned to "virtual conferencing" to address this issue.

While the idea of a "virtual conference" has been around for some time, only recently has technology progressed to the point where such a conference could be considered an adequate substitute for the real thing (Wilkinson & Hemby, 2000). The Wilkinson & Hemby study looked faculty members' attitudes toward such conferences and found fairly positive attitudes toward virtual conferences. Respondents to their survey cited the lower cost, the ability to attract top names, and the fact that they didn't need to miss classes to participate as the advantages of a virtual conference.

SUMMARY AND CONCLUSION

Two common threads seem to run through the existing literature on academic professional meetings. One is that they unquestionably provide significant benefits to both attendees and participants. The second is that attendance is declining, presumably due, at least in part, to the dwindling availability of travel funds for such conferences. This paper presented results of a survey designed to yield additional insights into attitudes towards professional conferences and reasons for attending or not attending and also looked at alternatives to scheduling both conference sessions and the conference itself.

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PREDICTING OVERALL ETHICAL CLIMATE, STUDENT RETENTION, CHEATING, SATISFACTION WITH UNIVERSITY, AND PERCEIVED STRESS WITH STUDENT PERCEPTIONS OF FACULTY UNETHICAL BEHAVIOR

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ABSTRACT

A survey of undergraduate business students at two state universities, one in the Midwest and one in the South, revealed a significant relationship between unethical faculty behavior and student cheating behavior. Faculty unethical behavior related to course requirements and classroom behavior were significantly related to student cheating behavior but not to student satisfaction with their university experience, or student retention. Faculty unethical social behavior (e.g., dating students) was significantly related to student retention. Finally, the results suggest that student cheating behavior may be a more important predictor of student perceptions of the overall ethical climate of their university than faculty unethical behavior.

INTRODUCTION

Student retention and cheating, as well as related issues such as student satisfaction and perceived stress, are receiving renewed attention in colleges and universities. There is some evidence which suggests student cheating behavior continues to be a significant problem in colleges and universities. In 1963, Bowers (1963) published the results of a survey of over 5,000 students on 99 campuses across the U.S. Student respondents were asked to describe their cheating behavior on exams and major written assignments. Seventy-five percent of the respondents admitted they had engaged in at least some form of cheating behavior (e.g., copying off another student during an exam, using "cheat sheets"). During the 1990-91 academic year, McCabe and Trevino (1993) surveyed over 6,000 students at 31 small to medium sized colleges and universities having highly selective admissions policies across the U.S. They found that sixty-seven percent of the respondents admitted engaging in at least one form of cheating. Both studies suggest that the "ethical climate" of the college or university may be an important determinant of student cheating.

In 1993, McCabe and Trevino (1996) surveyed 1,800 students at nine medium-sized to large state universities which had participated in the Bowers (1963) study. Sixty-three percent of the respondents admitted engaging in at least one form of cheating behavior. They also found that specific forms of cheating behavior, including copying from another student during an exam, helping another student to cheat, and using "crib notes" or "cheat sheets," had all increased substantially. They concluded that while the numbers of students who are cheating may not have increased over the years, the students who do cheat are cheating more often and in a wider variety of ways (McCabe & Bowers, 1994).

A number of factors have been related to college student retention/attrition including demographics, attitudes, opinions, experiences, values and faculty attitudes and behaviors (Porter, 2003-2004; Lundquist, Spalding & Landrum, 2002-2003; Glynn, Sauer & Miller, 2003; Reason, 2003). There is also some evidence that the ethical climate of a university impacts student retention. Schulte (2001) examined graduate student perceptions of ethical climate at a Midwestern metropolitan university and found that a positive ethical climate was important in the retention of graduate students. In a study of undergraduate students at a Midwestern metropolitan university, Schulte, Thompson, Hayes, Noble and Jacobs (2001) similarly found undergraduate perceptions of ethical climate to be related to student retention. Recently, Schnake, Fredenberger and Dumler (2004) found student perceptions of faculty unethical behavior were related to student satisfaction with their university experience which was, in turn, related to student retention. Further evidence of the link between the ethical climate of organizations and the ethical behavior of organizational members (e.g., lying, disobedience, and being an accomplice) is provided by Wimbush, Shepherd & Markham, (1997) and Peterson, (2002).

There has been surprisingly little research on the outcomes of student perceptions of faculty unethical behavior (Tabachnick, Keith-Spiegel & Pope, 1991; Keith-Spiegel, Tabachnick & Allen, 1993). Most previous research on student perceptions of faculty unethical behavior has focused on such topics as sexual harassment and has ignored the range of ethical dilemmas which occur in daily faculty-student interactions (Tabachnick, Keith-Spiegel & Pope, 1991).

One important influence on a college or university's ethical climate is the ethical/unethical behavior of faculty. Previous measures of university ethical climate have included several items pertaining to faculty behavior (Schulte, 2001). Thirty-five of the sixty items in the Undergraduate Ethical Climate Index employed by Schulte, et al., (2001) deal with faculty unethical behavior. The ethical climate of a college or university may influence several important outcome variables including student unethical behavior such as cheating, student satisfaction with their university experience, student perceived stress, and student retention.

Based on the previous research we expect that student perceptions of unethical faculty behavior will be positively related to student perceived stress and student cheating, and inversely related to student satisfaction with their university experience, perceptions of the overall ethical climate of the college/university, and student retention. The following hypotheses are proposed.

H1:	Student perceptions of unethical faculty behavior will be significantly related to student responses to a measure of overall ethical climate (faces scale) of their university.
H2:	Student perceptions of unethical faculty behavior will be significantly and positively related to student perceptions of stress after controlling for student age gender and GPA.
H3:	Student perceptions of unethical faculty behavior will be significantly and positively related to student cheating after controlling for student age gender and GPA.
H4:	Student perceptions of unethical faculty behavior will be significantly and inversely related to student retention after controlling for student age gender and GPA.
H5:	Student perceptions of unethical faculty behavior will be significantly and inversely related to student satisfaction with their university experience after controlling for student age gender and GPA.
H6:	Student perceptions of the overall ethical climate of their university will be significantly and negatively related to student perceptions of faculty unethical behavior and student perceptions of the frequency of student cheating after controlling for student age gender and GPA.

METHOD

Questionnaires were administered in undergraduate management courses at a large state university in the Midwest and a medium-sized state university in the South. The faculty unethical behavior questionnaire was administered during the first week of class, while the outcomes questionnaire (student cheating, satisfaction, stress, and retention) were administered approximately two months later. Student identification numbers were used to match students' questionnaires. The questionnaires were administered via a web page. The web page address was given to students and they were allowed approximately two weeks to complete the questionnaires after it was announced that the questionnaire was available online. Students were given bonus points (less than 1% of the course grade) for their participation in the research.

Measures

Student perceptions of faculty unethical behavior were measured with a 20-item scale developed by Schnake, Fredenberger and Dumler (2004). Student retention (intent to transfer to another college or university) and student satisfaction with their college/university were measured with 13 items (e.g., "I plan to finish my current degree program at this university," "I plan to start looking at other colleges/universities to transfer to," "I am very satisfied with my educational experience at this university," and "I'm very unhappy with my educational experience at this university"). Perceived stress in the class in which they were completing the questionnaire was measured with five items (e.g., "I work under a great deal of stress in this class," and "This class causes me to feel a lot of stress"). Perceptions of student cheating were measured with a four-item scale (e.g., "I frequently notice students cheating on exams," and "I frequently notice students

cheating on individual term papers/projects"). Based on the "faces scale" employed in job satisfaction research (Kunin, 1955), we also asked respondents to "consider all aspects of your university, and select the image which best represents your feelings about the *overall ethical climate of your university or college.*" Five faces ranging from a broad smile to a very sad face were the alternative responses available. Data were coded so that the higher the score, the more positive the perception of the ethical climate. A similar faces scale has been used to measure the level of pain in pediatric patients (Keck, Gerkensmeyer, Joyce & Schade, 1996).

Standard demographic data was also collected including gender, age, year in school, major and GPA. Average age of students was 22.16 years, average GPA was 2.83, and sixty percent were male. Sixty-one percent were juniors, and thirty-eight percent were seniors. Thirty-five percent were majoring in management, nineteen percent in marketing, five percent in accounting, one percent in economics, five percent in management information systems, nine percent in finance and the remaining twenty-seven percent were enrolled in majors outside the college of business (organizational communications, computer information systems, and other).

RESULTS

The faculty unethical behavior scale was submitted to a principal components factor analysis with varimax rotation. This analysis produced three distinct factors which were interpreted as: (1) lowering course standards (to achieve higher student evaluations and/or be liked by students), (2) unethical classroom behavior, and (3) unethical socializing. The student satisfaction and retention items were also submitted to a principal components analysis with varimax rotation. The results supported the a priori two factors. Principal components analysis with varimax rotation of the perceptions of student cheating behavior scale resulted in all items loading cleanly on a single factor.

Means, standard deviations, reliability estimates and a correlation matrix appear in Table 1. As can be seen from this table, all coefficient alpha reliabilities are within acceptable ranges, ranging from .78 to .93. Student cheating is positively related to two dimensions of faculty unethical behavior, low course standards and unethical classroom behavior. Student cheating was not significantly related to unethical faculty social behavior. Student retention and student satisfaction were not significantly correlated to any of the three dimensions of unethical faculty behavior. Perceived stress was positively related to the faculty unethical behavior dimension low course standards. Finally, student age, GPA and gender were not related to any of the dimensions of unethical faculty behavior.

Results of the regression analysis of faculty unethical behavior on outcome variables appears in Table 2. First, student demographic variables were entered into the regression equation to control for the effects of student age, gender and GPA. Then the three dimensions of unethical faculty behavior were entered into the regression equation to assess the extent to which faculty unethical behavior contributions to explained variance in the outcome variables beyond the effects of the

demographic variables. After controlling for these variables, we found some types faculty unethical behavior did influence student cheating behavior.

Table 1: Means, Standard Deviations, Reliability Estimates, and a Correlation Matrix													
Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Low Course Standards	2.06	0.9	1	.59**	.55**	.30**	0	.15*	-0.12	0.09	-0.1	0.05	-.24**
2. Unethical Classroom Behavior	2.34	1		**0.83**	.68**	.31**	0	0.07	0	0.04	0	0.08	-.25**
3. Unethical Social Behavior	1.4	0.7			**0.93**	0.12	0	0.12	-0.12	0.11	0.02	0.09	-.14*
4. Student Cheating	3.04	1.3				**0.87**	0	0.11	-21*	-0.1	0.01	0.06	-.33**
5. Student Retention	4.68	0.6					**0.9**	-0.1	.43**	-.16*	0.12	0.03	0.11
6. Student Stress	2.16	1						**0.93**	0	0.06	0.03	0.11	-0.1
7. Student Satisfaction	4.01	0.7							**0.83**	.21**	-0.1	0.11	.30**
8. Student Age										na	0	0.1	0.06
9. Student Gender	na	na									**na**	0.07	0.03
10. Student GPA	2.83	0.5										**na**	0.11
11. Faces	4.16	0.7											**na**
N = 190 to 261 (missing data) Reliability estimates boldfaced on the diagonal. *p < .05 **p < .01 na=not applicable													

Table 2 Results of the Regression Analysis of Faculty Unethical Behavior on Student Cheating, Satisfaction with University, Stress, and Retention		
Student Cheating	R^2	Change R^2
Step 1: Age, Gender, GPA	0.012	
Step 2: Faculty Unethical Behavior	.129**	.117**
Student Retention		
Step 1: Age, Gender, GPA	.054*	
Step 2: Faculty Unethical Behavior	.085*	0.031
Student Satisfaction		
Step 1: Age, Gender, GPA	.054*	
Step 2: Faculty Unethical Behavior	.092*	0.038
Student Stress		
Step 1: Age, Gender, GPA	0.016	
Step 2: Faculty Unethical Behavior	0.053	0.037
*p < .05 **p < .01		

As Table 2 shows, faculty unethical behavior explained significant incremental variance beyond the student demographic variables on student cheating, providing support for Hypothesis H3. The student demographic variables were not significantly related to student cheating. Faculty unethical behavior did not explain significantly more variance beyond the student demographic variables on student retention and student satisfaction, although the amount of explained variance increased slightly in both cases. Neither Hypothesis H4 nor H5 was supported. Neither the student demographic variables nor the faculty unethical behavior variables were significantly related to student perceived stress. Thus, Hypothesis H2 was not supported.

To assess which dimensions of faculty unethical behavior contributed to explained variance in each of these outcome variables, beta coefficients, which appear in Table 3, were examined. Two dimensions of faculty unethical behavior, low course standards and unethical classroom behavior, significantly contributed to explained variance in student cheating, explaining a total of 13% of the variance. Student age and the faculty unethical behavior dimension of unethical socializing both contributed to explained variance in student retention (inverse relationships), explaining a total of approximately 9% of the variance. Only student age contributed to explained variance in student satisfaction with their university experience, explaining a total of 9% of the variance.

Table 3: Specific Variables Contributing to Explained Variance in Dependent Variables				
	Student Cheating	Retention	Satisfaction	Stress
Student Age	-.09	-.17*	.21**	0.02
Student Gender	.01	.13	-.09	.05
Student GPA	.06	.03	.11	.11
Unethical Socializing	-0.16	-.24*	-0.13	.08
Low Course Standards	.18*	.08	-.17	.18*
Unethical Classroom Behavior .	32**	0.16	0.14	-0.06
*p < .05 **p < .01 Data in table are standardized beta coefficients.				

To assess the influences on perceptions of the overall ethical climate of the university a stepwise "usefulness analysis" regression analysis was performed (Darlington, 1988). Student age, gender and GPA were entered on step one as control variables. Then the three faculty unethical behavior scales were entered on step two, followed by the student cheating measure on step three. This was followed by a similar analysis alternating the order of the faculty ethical behavior scales and the student cheating measure. The faculty unethical behavior scales explained significant increment variance beyond the control variables (model $R^2 = .11$, $p < .01$). The student cheating measure explained significant incremental variance (change in $R^2 = .08$, $p < .01$) beyond the faculty unethical behavior scales (model $R^2 = .19$, $p < .01$). Conversely, faculty unethical behavior did not

explain significant incremental variance (change in $R^2 = .03$, p = .08) beyond the student cheating measure. Thus, Hypothesis H1 is not supported.

DISCUSSION

This research provides evidence that faculty unethical behavior is significantly related to student cheating behavior. Specifically, unethical course-related behavior, but not unethical social behaviors, contributed to explained variance in student cheating, after controlling for student age, gender, and GPA. Apparently, faculty unethical course-related behaviors establish a climate or culture which may encourage or at least tolerate student unethical behavior in the form of cheating. Faculty may serve as models for students. As they observe faculty engaging in unethical course-related behaviors, it may facilitate similar behavior in students (Bandura, 1977; Manz & Sims, 1981). Models may have a "disinhibitory effect" on observers (Mantz & Sims, 1981). That is, students observe faculty engaging in unethical course-related behavior and not receiving a punishment, or perhaps even receiving some type of reward (e.g., better student evaluations for lowering course requirements). Students are then more likely to engage in unethical course-related behaviors such as cheating. Models may also have a "facilitation effect" (Mantz & Sims, 1981). In this case, the observed behavior of the model serves as a cue for observers to engage in similar types of behaviors. . It would appear that when students observe faculty engaging in unethical behaviors, they may be willing to overlook their own ethical beliefs and increase their risk taking by cheating. The message is that faculty are role modeling undesirable behavior when they exhibit unethical personal and classroom conduct. Their inapposite behavior encourages students to do likewise.

Unethical faculty socializing behavior was significantly and inversely related to student retention. It is interesting to note that unethical faculty classroom behavior was not significantly related to student retention, but unethical socializing such as dating students and attending student parties, did explain significant amounts of variance in student retention beyond the effects of student age, gender, and GPA. It is not clear why this difference was found. However, it does suggest that students' retention decisions are influence by faculty unethical social behavior, while students' cheating decisions are influenced by faculty unethical course-related behaviors.

The results suggest that faculty unethical behavior does not have a uniform effect on outcome variables. Certain types of faculty unethical behavior are related to student unethical behavior (i.e., cheating), while other types of faculty unethical behavior are related to student retention. One avenue for future research is to further examine which specific types of faculty unethical behavior are related to various outcome variables, such as overall ethical climate, student satisfaction, and retention.

This research has also provided some evidence that student perceptions of the prevalence of student cheating have a significantly stronger impact on perceptions of the ethical climate of the

university than do perceptions of faculty unethical behavior. This contradicts somewhat with previous research which has used faculty unethical behavior as a major component in measures of ethical climate. Future research should address the specific factors which impact perceptions of ethical climate and not just assume that faculty unethical behavior is a major determinant.

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THE IMPACT OF THE CHANGE IN THE CARNEGIE CLASSIFICATION SYSTEM ON EMPIRICAL RESEARCH IN HIGHER EDUCATION FINANCE

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ABSTRACT

This study is an extension of previous research in higher education finance for which the 1994 classification of institutions by the Carnegie Foundation for the Advancement of Teaching was a key independent variable. The Foundation changed its classification of institutions in 2000, and the authors investigated the resultant impact of the change on their prior empirical research in higher education finance. The results of this study suggest that the change in the Carnegie classification system is substantive. However, the findings of prior research were not so fundamentally altered as to corroborate critics of the system who claim that the revised classification destroys the comparability of institutions. Upon the occasion of its centennial year in 2005, the Carnegie Foundation can be expected to continue improvement of a system so influential in the conduct and the results of institutional research.

INTRODUCTION

The first author was the principal investigator on research in higher education finance for which the 1994 classification of institutions by the Carnegie Foundation for the Advancement of Teaching was a key independent variable. The Foundation changed its classification of institutions in 2000. The new system emphasizes teaching, specifically the number and type of degrees an institution awards, rather than the conduct and external funding of research. The former categories of Research and Doctoral institutions have been replaced by a new taxonomy of Doctoral – Extensive and Doctoral – Intensive institutions. The classifications of master's and baccalaureate institutions remained in place (Basinger, 2000). Most of the published scholarship on the 2000 classification has focused on community colleges, ignoring four-year institutions.

The instant study explores the extent to which the results of prior empirical research in higher education finance changed because of the new classification system. Past research in higher education finance conducted by the first author focused on managerial accounting practices in

colleges and universities, leading issues in higher education finance as perceived by college and university chief financial officers (CFOs), and outsourcing practices in higher education institutions.

MANAGERIAL ACCOUNTING PRACTICES

Approaches to planning and control in the accounting systems of organizations may be defined as "managerial accounting practices". These internal accounting practices include systems of budgeting, costing, pricing, and performance measurement, as well as initiatives in outsourcing and efforts to change organizational behavior through fiscal policy. Effective budgeting systems address outputs of institutions (DeHayes and Lovrinic, 1994), planning for cash (Schwartz, 1992), and planning for the acquisition of long-term assets (Mangan, 1993). Successful approaches to budgeting also provide the flexibility to deal with changes in the volume of operations (Reed, 1992) and to make adjustments to budgets during the fiscal year (Howell and Sakurai, 1992).

Costing is the accumulation and analysis of cost information for an organization and its constituent parts. Costing remains, for most higher education institutions, in a developmental stage. More institutions, however, are recognizing the need to assign indirect costs to academic and administrative units, in order to arrive at a full cost of operations for the unit (Dempsey, 1997). A few institutions have embraced the activity-based costing model.

Pricing practices in colleges and universities vary by the extent to which an institution can subsidize price through reserves of institutional wealth or appropriations from a state (Winston, 1997). Many institutions, particularly private colleges and universities, have raised tuition and buffered the effect on affordablility by offering discounts in the form of institutional financial aid (Lapovsky and Hubbell, 2003). Institutions are sensing the limits of this approach. While tuition at most private and public institutions has risen in recent years (Farrell, 2003), a few institutions have lowered tuition (Speck, 1996). Noting that in competitive markets prices fall toward costs, Winston and Zimmerman (2000) warn that colleges with large endowments could afford to break the tuition spiral, increase subsidies, and engage in price competition. While a nexus between price and the consumption of resources rarely has been evident in higher education, the first intimation of a trend toward differential pricing can be observed in the technology fees some institutions are placing as a surcharge on tuition.

Institutions of higher education have demonstrated greater interest in measuring performance and funding academic units on the basis of performance. Leading institutions (e.g., Indiana University and the University of Southern California) have adopted responsibility center management (RCM), under which a large measure of fiscal authority is shifted from the central administration to individual academic and administrative units (Stocum and Rooney, 1997, and Wilms, Teruya, and Walpole, 1997). This decentralized model of management places greater responsibility for cost control and self-sufficiency on organizational units. A central tenet of RCM is that organizational behavior is based on fiscal policy and is amenable to change.

LEADING ISSUES IN HIGHER EDUCATION FINANCE

Respondents to the survey in this study answered an open-ended question on the three most important issues in higher education finance. The respondent chief financial officers considered technology and the related issue of distance learning especially important. The respondents also identified the pricing of tuition and the discounting of tuition, considered above in the literature of managerial accounting practices, as leading issues in higher education finance.

Outsourcing

Outsourcing is common in institutions of higher education, but its adoption by colleges and universities has been documented less than its acceptance in business organizations. The experience of higher education institutions with outsourcing parallels that of businesses. Colleges and universities are outsourcing not only to achieve cost savings, but also to focus on core competencies. Dining operations and bookstore operations were generally the first functions outsourced by higher education institutions (Nicklin, 1997). The greatest challenge confronting colleges and universities that outsource activities is the impact on employee jobs and the concomitant effect on institutional collegiality (Bartem & Manning, 2001).

METHOD

The study population was comprised of CFOs in four-year colleges and universities. The Ohio University Office of Institutional Research selected from a population of 1,377 four-year institutions a random sample of 582 institutions, stratified by institutional control and the 1994 Carnegie classification.

Information collected for analysis in this study was obtained with a survey instrument developed by the author. The survey instrument included in the first section 14 questions concerning the six topic areas of budgeting, costing, pricing, performance measurement, organization behavior practices, and outsourcing. Four of the 14 questions have subordinate parts. All 14 items in the first section require respondents to choose the extent to which specific managerial accounting practices are observed at their institutions, ranking on a Likert-type scale from 7 points to 1 point.

A second section of the instrument inquires as to whether the institution of the respondent has adopted outsourcing in six functional areas, listed alphabetically: bookstore operations, computing services, custodial services, dining operations, grounds maintenance, and security services. Additional space is available for the respondent to report other outsourcing activities. The survey instrument also included an open-ended question on the most important issues in higher education finance. Finally, the instrument requested demographic information on the respondent.

Two mailings and other follow-up efforts generated a total response of 310 CFOs, 53.3% of the study population. There was at least one response from each state within the United States, representing a true national study.

A summary of the population, sample, and response, stratified by institutional control and the 1994 Carnegie classification, appears in Table 1. This table is recast according to the 2000 Carnegie classification in Table 2.

Table 1: Population of Four-Year Institutions, Number and Percent of Institutions in Sample, and Number and Percent of Respondent Institutions, by Institutional Control and 1994 Carnegie Classification			
Control and 1994 Carnegie Classification	Four-Year Institutions	Institutions in Sample	Respondent Institutions
Public Research	82	82 (100.0)	46 (56.1)
Public Doctoral	66	66 (100.0)	39 (59.1)
Public Master's	273	100 (36.6)	57 (57.0)
Public Baccalaureate	87	11 (12.6)	4 (36.4)
Private Research	40	40 (100.0)	21 (52.5)
Private Doctoral	43	43 (100.0)	17 (39.5)
Private Master's	249	79 (31.7)	45 (57.0)
Private Baccalaureate	537	161 (30.0)	81 (50.3)
All Institutions	1,377	582 (42.3)	310 (53.3)

Note. The percentage of four-year institutions in the sample appears parenthetically following the number of institutions in the sample. The percentage of institutions in the sample that responded appears parenthetically following the number of respondent institutions.

RESULTS

Managerial Accounting Practices

A multivariate analysis of variance (MANOVA) was performed on six dependent variables: Budgeting (Budget), Costing (Cost), Pricing (Price), Performance Measurement (PM), Organization Behavior (OB), and Outsourcing (Out). The independent variable was Carnegie classification. The 1994 Carnegie classification included the following four groups: Research, Doctoral, Master's, and Baccalaureate. There was a significant main effect for the 1994 Carnegie classification, $F(4,282) = 2.51$, $p < .001$, partial eta squared = .052.

Table 2: Number of Respondent Institutions by Institutional Control and 2000 Carnegie Classification Control and 2000 Respondent	
Carnegie Classification	Institutions
Public Doc. Ext.	55
Public Doc. Int.	36
Public Master's	50
Public Baccalaureate	4
Private Doc. Ext.	25
Private Doc. Int.	17
Private Master's	54
Private Baccalaureate	62
Total Institutions	303
Special and Other Institutions	7
All Institutions	310
Note. Doc. Ext. denotes Doctoral Extensive institutions. Doc. Int. denotes Doctoral Intensive institutions.	
Note. Of the seven institutions not identified as one of the four principal Carnegie classifications above four were classified as special institutions such as health, engineering, business, and teachers colleges. Two institutions were classified as other and one institution closed.	

Analyses of variances (ANOVA) on each dependent variable for 1994 Carnegie classification were conducted as follow-up tests to the MANOVA. Table 3 presents means and standard deviations of the managerial accounting practices by 1994 Carnegie classification.

Table 3. Means and standard deviations of the managerial accounting practices by 1994 Carnegie classification.							
	Research		Doctoral		Masters		Bachelors	
	M	SD	M	SD	M	SD	M	SD
Pricing	4.27	.28	4.39	.29	4.15	.21	3.91	.54
Outsourcing	5.06	.17	4.89	.17	4.71	.13	4.75	.34
Budgeting	4.70	.16	4.43	.16	4.07	.12	4.36	.31
Costing	3.86	.24	2.99	.24	2.87	.18	2.65	.46
Performance Measures	3.79	.21	3.69	.21	4.04	.15	3.47	.39
Org. Behavior	4.93	.17	4.67	.18	4.27	.13	4.17	.34

The ANOVA was significant for Budgeting, $F(3,302) = 3.17$, $p = .025$, partial $\eta^2 = .031$. Post-hoc tests using Least Significant Differences (LSD) indicate that Research institutions adopted budgeting practices significantly more than did Masters and Baccalaureate institutions. There were no significant differences between Research and Doctoral institutions.

The ANOVA likewise was significant for Costing, $F(3,302) = 4.08$, $p < .01$, partial $\eta^2 = .039$. Post-hoc tests based on LSD indicate that Research institutions adopted costing practices significantly more than did Doctoral and Masters institutions. There were no significant differences between Research and Baccalaureate institutions.

Finally, the ANOVA was significant for Organization Behavior, $F(3,302) = 3.49$, $p = .016$, partial $\eta^2 = .034$. Post-hoc tests using LSD indicate that Research institutions adopted Organization Behavior practices significantly more than did Masters or Baccalaureate institutions. There were no significant differences between Research and Doctoral institutions.

The 2000 Carnegie classification encompassed four groups: Doctoral – Extensive, Doctoral – Intensive, Master's, and Baccalaureate. The results of the MANOVA for 2000 Carnegie classification indicated a significant effect, $F(18,290) = 2.64$, $p < .001$, partial eta squared = .053. Analyses of variances (ANOVA) on each dependent variable were conducted as follow-up tests to the MANOVA. Table 4 presents the scores among the 2000 Carnegie classifications on the dependent variables.

Table 4. Means and standard deviations of the managerial accounting practices by 2000 Carnegie classification.

	Doc. Ext.		Doc. Int.		Masters		Bachelors	
	M	SD	M	SD	M	SD	M	SD
Pricing	4.26	.26	4.46	.31	4.15	.21	3.901	.55
Outsourcing	5.04	.16	4.85	.19	4.71	.13	4.14	.34
Budgeting	4.53	.15	4.57	.18	4.08	.12	3.84	.32
Costing	3.70	.22	3.03	.26	2.81	.17	3.18	.47
Performance Measures	3.66	.18	4.02	.23	3.92	.15	3.37	.39
Org. Behavior	4.92	.16	4.62	.19	4.20	.13	3.86	.34

The ANOVA was significant for Budgeting, $\underline{F}(3,303) = 3.267$, $\underline{p} = .022$, partial $\eta^2 = .032$. Post hoc tests based on LSD indicate that Doctoral-Intensive institutions adopted budgeting practices significantly more than did Masters or Baccalaureate institutions. There were no significant differences between Doctoral-Extensive and Doctoral-Intensive institutions.

The ANOVA also was significant for Costing, $\underline{F}(3,303) = 3.31$, $\underline{p} = .02$, partial $\eta^2 = .03$. Post-hoc tests using LSD indicate that Doctoral-Extensive adopted costing practices significantly more than masters. There were no significant differences among other classifications.

Finally, the ANOVA was significant for Organization Behavior, $\underline{F}(3,302) = 3.85$, $\underline{p} = .016$, partial $\eta^2 = .034$. Post-hoc tests based on LSD indicate that Doctoral-Extensive institutions adopted organization behavior practices significantly more than did Masters or Baccalaureate institutions. There were no significant differences between Doctoral-Extensive and Doctoral-Intensive institutions.

LEADING ISSUES IN HIGHER EDUCATION FINANCE

The results of the MANOVA indicated significant effects for both 1994 and 2000 Carnegie Classification on leading issues in higher education finance, $F(12, 799) = 4.61$, $p < .001$, partial eta squared $= .057$ and $F(12, 780) = 3.56$, $p < .001$, partial eta squared $= .085$, respectively. Follow-up ANOVAs for the 1994 classification indicated statistically significant differences between and among institutions for the issues of technology, discounting, and salaries and research support. CFOs in Research institutions were significantly less likely to cite technology as a leading issue than were CFOs in Doctoral or Master's institutions. CFOs in Baccalaureate institutions identified discounting as a leading issue significantly more than their counterparts in Research, Doctoral, and Master's institutions. CFOs in Research institutions were significantly more likely to name issues of salaries and research support than were CFOs in Doctoral, Master's, and Baccalaureate institutions. Table 5 presents the percentage of respondent institutions within the 1994 Carnegie classifications citing the leading issues below.

Table 5. Leading issues reported by percentage of respondent institutions under the 1994 Carnegie classifications.				
	Research	Doctoral	Masters	Bachelors
Technology	28%	58%	54%	4%
Discounting	6%	24%	25%	45%
Salaries and Research Support	24%	2%	12%	11%

Follow-up ANOVAs for the 2000 classification likewise indicated statistically significant differences between and among institutions on the issues of technology, discounting, and salaries and research support. In a close parallel of the analysis for the 1994 classification, CFOs in Doctoral Extensive institutions were significantly less likely to name technology as a leading issue than were

their peers in Doctoral Intensive or Masters institutions. CFOs in Baccalaureate institutions identified discounting significantly more than did CFOs in Doctoral Extensive institutions. Finally, CFOs in Doctoral Extensive institutions reported issues of salaries and research support significantly more than did CFOs in Doctoral Intensive institutions. Table 6 presents the percentage of respondent institutions within the 2000 Carnegie classifications citing the leading issues below.

Table 6. Leading issues reported by percentage of respondent institutions under the 2000 Carnegie classifications.				
	Doc. Ext	Doc. Int.	Masters	Bachelors
Technology	32%	62%	55%	37%
Discounting	10%	23%	31%	41%
Salaries and Research Support	19%	5%	14%	7%

OUTSOURCING

No statistically significant associations between the 1994 Carnegie classification and the various outsourcing activities were identified in a one-way ANOVA. One relationship approached significance: the observed significance level of the association between 1994 Carnegie classification and the outsourcing of bookstore operations, $F(3,306) = 2.39$, $p = .068$. Under the 2000 Carnegie classification, the relationship between classification and the outsourcing of bookstore operations is significant. The results of an one-way ANOVA indicated significant differences among the groups, $F(3,299) = 3.31$, $p = .021$.

CONCLUSION

Managerial Accounting Practices

Prior research found that the 1994 Carnegie classification has a significant effect on the dependent variables of Budgeting, Costing, and Organization behavior. CFOs in research institutions reported a stronger commitment to budgeting practices than did CFOs in master's and baccalaureate institutions, and CFOs in research institutions indicated a higher adoption of costing practices than did CFOs in doctoral and master's institutions. The research suggests that CFOs in research institutions also have the highest adoption of organization behavior practices.

The 2000 Carnegie classification likewise has a significant effect on Budgeting, Costing, and Organization Behavior. Institutions classified as and doctoral – intensive reported a higher commitment to budgeting practices than did master's and baccalaureate institutions. Doctoral –

extensive institutions indicated a higher adoption of costing practices than master's institutions and a higher observance of organization behavior practices than master's and baccalaureate institutions.

Leading Issues in Higher Education Finance

Both the 1994 and 2000 Carnegie classifications had a significant effect on leading issues in higher education finance. Under the 1994 classification CFOs in Research institutions reported technology as a concern less than did CFOs in doctoral and master's institutions. Similarly, under the 2000 classification, CFOs in doctoral – extensive institutions named technology as a leading issue less than did CFOs in doctoral – intensive and master's institutions. Using the 1994 classification for analysis, CFOs in research institutions cited the issue of salaries and research support more than did CFOs in doctoral, master's, and baccalaureate institutions. Under the 2000 classification CFOs in doctoral – extensive institutions reported salaries and research support as a concern more than their counterparts in doctoral – intensive institutions. Baccalaureate institutions, dominated by small private liberal arts colleges, were more likely to name discounting as a leading issue than were other institutions, a result consistent across Carnegie classification systems.

Outsourcing

No statistically significant associations between the 1994 Carnegie classification and the various outsourcing activities were identified in a $\chi 2$ analysis. One relationship approached significance. The observed significance level of the association between 1994 Carnegie classification and the outsourcing of bookstore operations was .064. Under the 2000 Carnegie classification, the relationship between classification and the outsourcing of bookstore operations is significant, $p < 01$. Although no clear pattern emerges, mid-size institutions tend to outsource bookstore operations most often.

Implications

The Carnegie classification system is utilized extensively in institutional research. When changes in the classification of institutions are made, as occurred between the 1994 and 2000 systems, one would anticipate that the results of research based on the Carnegie classification system would change. The foregoing study, comparing the results of empirical research in higher education finance under the 1994 and 2000 classification systems, reflects that premise.

The shuffling in the deck of institutions was observed most among institutions of the highest complexity, viz., institutions classified as research and doctoral institutions under the 1994 system and institutions classified as doctoral – extensive and doctoral – intensive in the 2000 system. The results of this study suggest that the change in the Carnegie classification system is substantive.

However, the findings of prior empirical research were not so fundamentally altered as to corroborate critics of the system who claim that the revised classification destroys the comparability of institutions. Upon the occasion of its centennial year in 2005, the Carnegie Foundation for the Advancement of Teaching can be expected to continue improvement of a system so influential in the conduct and the results of institutional research.

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PATTERNS OF INSTRUCTIONAL TECHNOLOGY USE BY FACULTY IN MARKETING: AN EXPLORATORY INVESTIGATION

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ABSTRACT

The present study was undertaken in order to gain a preliminary perspective on the use of technology in academic instruction in Marketing in the United States. The sampling frame consisted of professors and others interested in marketing. A questionnaire addressing usage of various types of classroom hardware, software, and distance education activity, was modified from a previous study of finance professors. A "call for participants" was posted on the American Marketing Association's e-mail list service (ELMAR) during the fall of 2003. Marketing faculty members were requested to respond to the questionnaire through an Internet homepage, which was accessible via a provided hotlink. Usable responses were received from 102 marketing faculty.

The results indicated that the process of adoption of technology for marketing instruction in the United States is well underway. With respect to hardware, it was found that more than 92% of the respondents employ front-orientation computer projection systems, and over half used the systems in over eighty percent of the class meetings. Very high usage rates were found for presentation and spreadsheet software. It was also discovered that roughly one out of three respondents have taught one or more courses by distance education.

Interesting variations were found among the respondents with respect to implementation of technology as a function of gender and years of teaching experience.

INTRODUCTION

Worldwide, colleges and universities are rapidly accelerating the development of technology-based infrastructures in order to facilitate the use of various forms of technology for instructional purposes. Indeed, a recent survey conducted on behalf of the Campus Computing Project (2003) indicated that U.S. universities are rapidly adopting a variety of technology – based options. As just one example, the results of this survey indicated that 77.2% of participating institutions reported the use of wireless LANS in 2003, as compared to 67.9 % in 2002 and 29.6 % in 2000.

Correspondingly, the literature in Higher Education is replete with reference to the adoption and use of various forms of technology for educational purposes. Nowhere is this trend more apparent than in Colleges of Business. At present, however, there appears to be some difference of opinion concerning the implementation of instructional technology in Higher Education in general and in business curricula in particular. Whereas some authors wholeheartedly embrace the use of technology for instructional purposes (e.g. Reeves, 1998), others voice concern, suggesting that the educational benefits to the student have yet to be adequately assessed and that faculty costs in time may outweigh the benefits of learning new technologies for pedagogical purposes (e.g. Smith, 2001).

Educators in the field of marketing have not remained outside of the debate taking place in higher education more broadly. Like their peers in other fields, marketing faculty are moving toward greater and greater reliance on "technology-enhanced" course instruction (Evans, 2001; Ferrell and Ferrell, 2002). As is true elsewhere in higher education, however, there is little empirical evidence assessing the potential benefits of instructional technology to teach marketing (Malhotra, 2002). Within the marketing education literature, it has been proposed that discussions concerning the merits of implementing instructional technology often suffer from a lack of consensus concerning just what is meant by the term, "Instructional Technology" (Peterson et al., 2002; Malhotra, 2002). Indeed, a variety of specific technology-based techniques have been employed and their relative efficacies discussed. A partial list of technologies employed in marketing instruction includes presentation software such as PowerPoint, faculty websites, e-mail, BlackBoard and WebCT, in classroom and out of classroom use of the Internet, etc. Until there is agreement concerning the meaning of the term "Instructional Technology," it will be difficult if not impossible to empirically assess the utility and effectiveness of various methods often subsumed under this umbrella. A definition proposed by Malhotra (2002) would appear to capture what may be an emerging consensus within the field of marketing education: "Instructional technology includes hardware and software, tools and techniques that are used directly or indirectly in facilitating, enhancing, and improving the effectiveness and efficiency of teaching, learning, and practicing marketing knowledge"(p.1).

Since a variety of technologies are being employed in an attempt to enhance marketing education and since the relative effectiveness of these techniques may be expected to vary, it would be useful to discover the extent to which these various technologies have penetrated the marketing academy. Although there have been a number of small scale studies assessing the extent of use of various technologies at specific universities (see, for example, the April 2001 issue of the *Journal of Marketing Education* that was devoted to technology and distance learning), there has been little effort directed toward assessing the extent of use by marketing faculty as a whole. A recent qualitative study by Peterson et al. (2002) is noteworthy. This study was based on the response of 61 marketing faculty members to six open-ended questions assessing the use of technology for marketing instruction. Among the findings were that approximately two-thirds of the respondents indicated use of some form of technology (self-defined) for instructional purposes. The present study

represented an effort to conduct a quantitatively based survey of the extent of usage of technology for marketing instruction.

METHODOLOGY

A technology questionnaire containing four sections that address usage of various types of classroom hardware, software usage, distance education activity, and respondent demographics, respectively, was closely patterned after one used in a study of finance faculty (see Cudd, Tanner, and Lipscomb, in press). A "call for participants" message was posted on the American Marketing Association's e-mail list service (ELMAR, which, at the time of the survey, consisted of 3,200 members). ELMAR subscribers consist of marketing faculty and others who are interested in the field of marketing. The list service was chosen due to its convenience and the lack of funding for conducting a mail survey. ELMAR also provided a means of reaching a current listing of members of the target population. Marketing faculty members were requested to respond to the questionnaire through an Internet homepage, which was accessible via a provided hotlink. Usable responses were received from 102 marketing faculty for a response rate of more than three percent.

RESULTS

Respondent Demographics

The demographic characteristics of the respondents are shown in Table 1. As can be seen from the table, almost three-fourths of the respondents taught at state-supported, public universities, with more than fifty-three percent teaching at schools with enrollments of fifteen thousand students or less; however, more than thirty-two percent were at schools of more than twenty thousand students. With respect to business students, more than fifty-two percent were at schools with two thousand or more students enrolled in the College of Business.

More than eighty percent of the respondents were at universities that are accredited by the AACSB. Forty-seven percent held the rank of assistant or associate professor, and thirty-two percent were full professors. Fifty-nine percent had ten years or less college teaching experience, and more than fifty-four percent were women.

Crosstabulations and chi-square analysis revealed that male respondents tended to be full professors while female respondents tended to be assistant professors, $\chi^2 = 55.68$, $p < .01$. Male professors also tended to have been teaching more than 10 years whereas female professors tended to have been teaching less than 10 years ($\chi^2 = 54.25$, $p < .01$).

Table 1: Sample Demographics		n	%
Type of University	State	73	73.0%
	Private	27	27.0%
University Enrollment	Less than 5000	13	12.9%
	5001 – 10000	25	24.7%
	10001 – 15000	16	15.8%
	15001 - 20000	14	13.9%
	More than 20000	33	32.7%
AACSB Accreditation	Accredited	79	80.6%
	Not accredited	19	19.4%
College of Business Enrollment	≤ 1000	14	14.4%
	1000-2000	32	33.0%
	Over 2000	51	52.6%
Academic Rank	Assistant professor	20	20.0%
	Associate professor	27	27.0%
	Full professor	32	32.0%
	Instructor/Lecturer	21	21.0%
Gender	Male	46	45.5%
	Female	55	54.5%
Years Teaching	1-5 years	36	36.0%
	5-10	23	23.0%
	10-15	13	13.0%
	15-20	8	8.0%
	Over 20 years	20	20.0%

Hardware Usage in Marketing Instruction

Table 2 shows the amount of usage of various types of hardware per class during a given semester or quarter by these marketing faculty members. Transparencies have long been used in many classrooms, and the inexpensive and non-technical nature of transparencies likely contributes to their significant usage. However, more than forty-two percent of the marketing faculty do not use these at all, and more than forty-four percent only use it twenty percent of their class time or less.

Types of Hardware Used During Class Time	Percentage of Respondents					
	None of the Time	1–20% of the Time	21–40% of the Time	41–60% of the Time	61-80% of the Time	81-100% of the Time
Overhead Transparencies	42.2	44.1	4.9	5.9	0.0	2.9
VCRs	17.6	75.5	6.9	0.0	0.0	0.0
Camcorders/Digital Cameras	76.2	18.8	3.0	1.0	1.0	0.0
Front-Orientation Computer Projection Systems (e.g., cart-mounted, ceiling-mounted, portable computer projectors, etc,)	7.9	4.0	10.9	10.9	10.9	52.4
Rear-Orientation Computer Projection Systems (e.g., SmartBoards, whiteboards, wall-mounted plasma displays, etc.) Note: These look like an oversized TV.	82.4	7.8	2.0	3.9	1.0	2.9
Wall-Mounted Plasma Display Panels Note: These look like a thin-line TV.	96.0	2.0	1.0	0.0	1.0	0.0
Digital Image Capture Systems (e.g., document camera "Elmo," scan converters, etc.)	61.8	30.4	2.9	2.9	1.0	1.0
Networked Computer Labs	40.6	27.7	14.8	2.0	5.0	9.9

Table 2 Hardware Usage Per Semester/Quarter

With respect to videocassette recorder (VCR) usage, more than eighty-two percent of the faculty used it forty percent of the time or less in their classes, while more than seventeen percent made no use of them at all. Even though a large part of class time was not used, the wide use of VCRs in marketing classes is not surprising, since many marketing classes focus on promotion, and a study of advertising in various media forms is almost mandatory.

The use of camcorders and digital cameras was less widespread, with more than seventy-six percent not using them at all. Only five percent used them more than twenty percent of their class time.

The extensive shift in marketing instruction to the use of computer image projection is evidenced by the extremely high percentage of marketing faculty employing some variation of this type of device (i.e., front-orientation, rear-orientation, or wall-mounted). Over ninety-two percent of the respondents employ front-orientation computer projection systems, and over half used the systems in over eighty percent of the class meetings.

Front-orientation computer projection systems are the less expensive method of providing computer image projection, and typically involve no more than a computer and projector mounted on a cart for a total cost of roughly $3,000-4,000. More expensive computer projection system alternatives include rear-orientation systems resembling free standing, over-sized television sets, and wall-mounted plasma display panels that resemble thin-line television sets. These devices often provide digital chalkboard capabilities that enable the instructor to write electronically directly on the image, as well as slightly better imagery. Their excessive costs, which fall in the $15,000-to-$25,000 range, contributes to their scarcity and the subsequent low rates of faculty usage indicated in the survey. Only slightly over seventeen percent of the responding faculty report any usage of rear-orientation computer projection systems, and less than four percent employ wall-mounted plasma display units.

Digital image capture systems (also known as document cameras or "Elmos") function as closed-circuit television cameras and bear a physical resemblance to an overhead transparency projector. Unlike overhead transparency projectors that simply project a visual image through a magnifying lens, digital image capture systems electronically scan the image, convert it to digital form, and then project it to a viewing screen. This process enables the instructor to simply place a newspaper or book under the camera to project an enlarged image electronically. A digital image document camera is typically included as an adjunct to an existing front-orientation projection cart. The relatively high cost of this item as an auxiliary device, roughly $1,000-2,500, contributes to its scarcity. The simplicity of use, however, makes it attractive to less technologically oriented faculty. Survey responses indicate that slightly more than thirty-eight percent of the respondents use digital image capture systems, and more than seven percent of the responding faculty use such systems in more than twenty percent of the class meetings. The greater availability of digital images that may be captured via the Internet today may also contribute the low usage of digital image capture systems by marketing faculty.

Networked computer labs permit the instructor to guide students through statistical analyses associated with marketing research and other activities for specific marketing course, as well as other coordinated in-class activities requiring computer access. Approximately half of the respondents provide some instruction in networked computer labs, but the bulk of the usage involves no more than 20% of the semester class meetings. Most computer labs are generic with standard spreadsheet software, rather than being specifically dedicated to use by marketing classes, which enhances their availability. Consequently, the use of computer labs for marketing instruction is largely driven by faculty need.

Software Usage in Marketing Instruction (other than distance education software)

Table 3 shows classroom usage percentages of the various types of software (other than distance education software) by the marketing faculty respondents. Ninety-five percent of

responding faculty employ computer presentation software (e.g., PowerPoint), which is consistent with the high usage of front-orientation computer presentation hardware noted earlier. Interestingly, sixty-four percent of the respondents use this type software more than sixty percent of the time in their classes. The use of presentation software is especially beneficial in marketing courses that require graphs tables, pictures, charts, and even slides of notes. Students typically come to class with advanced hard copies of the presentation slides, which permits student attention to be directed to the instructor's lecture, rather than focusing on copying down the projected images. Textbook publishers have also fueled the popularity of presentation software by supplying author-written presentation software for many textbooks.

Table 3: Software Usage Per Semester/Quarter						
Types of Software Used During Class Time	**Percentage of Respondents**					
	None of the Time	1–20% of the Time	21–40% of the Time	41–60% of the Time	61-80% of the Time	81-100% of the Time
Computer Presentation Software	5.0	4.0	8.0	19.0	17.0	47.0
Spreadsheet Software	30.3	56.6	8.1	3.0	0.0	2.0
Database Management Software	85.0	10.0	2.0	1.0	0.0	2.0

While some might argue that spreadsheet analysis is not the primary tool of the marketing manager, the use of spreadsheets is still important when doing statistical comparisons and analyses, such as the comparison of sales figures for different areas and/or making sales forecasts under different conditions. Thus, the relatively high percentage of more than seventy percent of responding faculty using spreadsheet software is expected. Publishers also commonly provide student disks with spreadsheet templates for cases and problems. Consequently, the most common usage rate, which was greater than fifty-six percent, occurs with the minimum of class meetings.

Database management software (e.g., Access) should be of some value in some marketing courses (such as advertising, research, and logistics); however, eighty-five percent of the responding marketing faculty did not use database software at all in their classes. Also, of the fifteen percent that use this type software ten percent use it the minimum of class time.

Distance Education Software and Activity in Marketing Instruction

Some universities are dedicated to course offerings delivered exclusively through distance education (e.g., University of Phoenix). Virtually all universities provide distance education delivery for selected courses, and the trend appears to be toward increasing the percentage of

curricula available online. A breakdown of the number of marketing courses delivered via distance education is displayed in Table 4. Roughly one out of every three marketing faculty members teaches any courses in a distance education environment. Almost seventeen percent of the respondents conduct marketing instruction via distance education for one class, and only around eleven percent conduct distance education for more than one class. The questionnaire, however, did not obtain fractional course information concerning distance education. For example, some courses are offered on a 50/50 basis (i.e., 50% online and 50% in a traditional classroom mode). Consequently, it is possible that some of the above participation percentages may reflect fractional online course activity.

Table 4: Number of Distance Education Courses Taught Per Semester/Quarter	
# Distance Education Courses Taught Per Term	Percentage of Respondents
0 Courses	71.6%
1 Course	16.8%
2 Courses	7.4%
3 Courses	0.0%
4 Courses	0.0%
More than 4 Courses	4.2%

In addition to traditional correspondence courses and course lectures offered via the Public Broadcasting System, there are three newer technology-based methods of distance education course delivery. First, many universities sponsor local sites for course offerings managed by intranet software (e.g., BlackBoard or WebCT). This provides an online environment for each student to submit questions, obtain responses (from the instructor or other students), obtain course documents (such as course syllabi, presentation software files, spreadsheet files, data management files, special readings documents, etc.), hold chat sessions with other students, obtain course assignments, submit completed assignments, and check grade status. The accompanying whiteboard software also provides the ability for students and faculty to simultaneously write on the same electronic document. This type of online visual aid supports virtual class meetings held online. Whiteboard software only offers practical support of spontaneous student written replies (i.e., a Socratic environment) if each student is equipped with an electronic writing tablet.

Second, textbook publishers provide similar homepages for each specific textbook offering. These Internet sites provide the same services and offerings as intranet pages, except the publisher provided homepages are national or international in scope, and students nationwide will not all be covering the same chapters at the same time.

A third method of offering courses via distance education is through video conferencing (i.e., compressed video). Compressed video conferencing software (e.g., PictureTel, PolyCom, Net Meeting, etc.) enables students to attend a local physical classroom and receive and interact with an instructor at a remote location through two-way video and audio hardware and software. One deterrent to this mode of distance education is the relatively high cost of offering courses in this manner, which include the usage cost of the communications lines, remote classrooms, and compressed video equipment at all classroom sites.

Table 5 shows the results for distance education activity in instruction. These results may reflect faculty who are offering part or all of their coursework online, as well as those who use the software as a supplement to traditional classroom delivery. Twenty-nine percent of the marketing faculty does not engage in distance education through their local intranet, and only thirty-two percent use this media for supporting more than 40% of the class meetings. Nineteen percent of the faculty who use this media for almost all of the class meetings likely reflects instruction of purely online courses.

Table 5: Distance Education Delivery						
Delivery Method	**Percentage of Respondents**					
	None of the Time	**1–20% of the Time**	**21–40% of the Time**	**41–60% of the Time**	**61-80% of the Time**	**81-100% of the Time**
Distance Education Software-Intranet	29.0	31.0	8.0	11.0	2.0	19.0
Distance Education Software-Internet	28.9	39.2	14.4	10.3	1.0	6.2
Distance Education Software-Video Conferencing	91.9	4.1	3.0	1.0	0.0	0.0

More than seventy-one percent of these marketing faculty members use Internet-based software for course instruction, with more than thirty-two percent using the Internet for twenty percent or less of their class meetings. The greater popularity of publisher-based textbook Internet sites may be attributed to several factors. The sites come already tailor-made for the specific textbook, when enhances the ease of their use. Such sites may also offer downloadable author-prepared computer presentation slides and online study quizzes, in addition to the types of materials available with more generic intranet-based homepages.

Video conferencing is rarely practiced in the delivery of finance courses, with only slightly more than eight percent of the faculty using this mode of course delivery, and only four percent using it for more than twenty percent of the class meetings. Again, the relatively high cost may

inhibit this method of course delivery. Lastly, although not included in Table 5, almost one-third of the respondents stated that they used e-mail as their only form of distance education software.

Comparison Tests of Usage

In addition to overall usage rates of various types of hardware, software, and distance education delivery method by marketing faculty, tests of significance were made to determine if usage differed by gender, academic rank, type of institution (i.e., whether the respondent taught at private or public universities), and years of teaching experience. Table 6 shows the results of significance tests of usage as a function of gender. Because certain usage categories had a limited number of respondents, the highest four usage categories were collapse into one "More than 20% of the time" category, so as to facilitate the use of chi-square independence of classification analysis. This will be the case for all subsequent analyses. The analysis revealed that significantly more of the female marketing faculty members reported using transparencies in their classes in the 1-20 percent category, and significantly more males using overheads in the more than 20 percent category ($x^2 = 6.287$, p = .043). No other significant differences in classroom usage frequency as a function of gender for hardware were found It is apparent, however, that, overall, both genders made relatively high use of VCRs and front-orientation computer projection systems, while little use was made of such hardware items as camcorders/ digital cameras, rear-orientation computer projection systems, wall-mounted plasma display panels, and digital image capture systems.

Both female and male marketing faculty make extensive use of computer presentation software and spreadsheet software. However, neither gender spent much time on database management software in their classes.

Females make significantly greater use of the intranet software in their distance education classes ($x^2 = 8.0$, p = .018). In fact, more than forty percent of the males did not use the intranet at all. Also, more than seventy-five percent of the females and sixty-five percent of the males made some use of the internet, while very little use of video conferencing software for distance education was made by either gender.

Table 6: Comparison of Technology based on Gender				
	Percent of Respondents		χ^2	**p-value**
	Females	**Males**		
Types of Hardware Used During Class Time				
Overhead Transparencies:				
0 percent of the time	43.6%	41.3%		
1 – 20% of the time	50.9%	37.0%		
More than 20% of the time	5.5%	21.7%	6.287	.043*

Table 6: Comparison of Technology based on Gender				
	Percent of Respondents		χ^2	p-value
	Females	**Males**		
VCRs:				
0 percent of the time	16.4%	19.6%		
1 – 20% of the time	78.2%	71.7%		
More than 20% of the time	5.5%	8.7%	0.662	.718
Camcorders/Digital Cameras:				
0 percent of the time	70.9%	82.2%		
1 – 20% of the time	21.8%	15.6%		
More than 20% of the time	7.3%	2.2%	2.190	.334
Front-Orientation Computer Projection Systems (e.g., cart-mounted, ceiling-mounted, portable computer projectors, etc,):				
0 percent of the time	9.1%	6.7%		
1 – 20% of the time	0.0%	8.9%		
More than 20% of the time	90.9%	84.4%	5.188	.075
Rear-Orientation Computer Projection Systems (e.g., SmartBoards, whiteboards, wall-mounted plasma displays, etc.; note: These look like an oversized TV.):				
0 percent of the time	80.0%	84.8%		
1 – 20% of the time	12.7%	2.2%		
More than 20% of the time	7.3%	13.0%	4.434	.109
Wall-Mounted Plasma Display Panels (Note: These look like a thin-line TV.):				
0 percent of the time	96.4%	95.7%		
1 – 20% of the time	1.8%	2.2%		
More than 20% of the time	1.8%	2.2%	0.033	.983
Digital Image Capture Systems (e.g., document camera "Elmo," scan converters, etc.):				
0 percent of the time	61.8%	60.9%		
1 – 20% of the time	30.9%	30.4%		
More than 20% of the time	7.3%	8.7%	0.070	.966
Networked Computer Labs:				
0 percent of the time	41.8%	37.8%		
1 – 20% of the time	23.6%	33.3%		
More than 20% of the time	34.6%	28.9%	1.180	.554

Table 6: Comparison of Technology based on Gender				
	Percent of Respondents		χ^2	**p-value**
	Females	**Males**		
Types of SOFTware Used During Class Time				
Computer Presentation Software:				
0 percent of the time	1.9%	8.9%		
1 – 20% of the time	1.9%	6.7%	4.194	.123
More than 20% of the time	96.2%	84.4%		
Spreadsheet Software:				
0 percent of the time	26.4%	35.6%		
1 – 20% of the time	60.4%	51.1%	1.037	.595
More than 20% of the time	13.2%	13.3%		
Database Management Software:				
0 percent of the time	85.2%	84.4%		
1 – 20% of the time	11.1%	8.9%	0.548	.760
More than 20% of the time	3.7%	6.7%		
Delivery Method (For Distance Education)				
Distance Education Software-Intranet:				
0 percent of the time	16.7%	42.2%		
1 – 20% of the time	35.2%	26.7%	8.000	.018*
More than 20% of the time	48.1%	31.1%		
Distance Education Software-Internet:				
0 percent of the time	24.5%	34.9%		
1 – 20% of the time	43.4%	37.8%	1.598	.450
More than 20% of the time	32.1%	32.6%		
Distance Education Software-Video Conferencing:				
0 percent of the time	94.3%	88.9%		
1 – 20% of the time	5.7%	2.2%	5.495	.064
More than 20% of the time	0.0%	8.9%		
*Significant at ά=.05				

Table 7 shows the results of significance tests for differences in usage by academic rank. The two groups were full professors and associate professors (the higher/senior ranking faculty)

versus assistant professors and instructors or lower (the lower/junior ranking faculty). With respect to hardware, the full professors and associate professors use rear orientation computer projection systems more than the assistant professor and lower-ranked faculty, ($x^2 = 7.068$, p = .029) although neither group makes what could be termed extensive use of such hardware. More than half of both groups make some use of overhead transparencies, and more than eighty percent of both groups make some use of VCRs and front-orientation projection systems in their classes, while neither group makes much use of wall-mounted plasma display panels or digital image capture systems.

       With respect to software usage, marketing faculty of upper and lower ranks make relatively extensive use of computer spreadsheet software and spreadsheet software with no significant difference between the two groups. Neither group made extensive use of database management software.

       With respect to delivery methods used for distance education, marketing faculty at both the higher and lower academic ranks were relatively evenly-distributed concerning the use of intranet and internet delivery systems while neither group made very much use of video conferencing.

Table 7: Comparison of Technology based on Rank				
	Percent of Respondents			
Types of Hardware Used During Class Time	**Full/Assoc. Professors**	**Assistant Professors or Lower**	**χ^2**	**p-value**
Overhead Transparencies:				
0 percent of the time	44.7%	41.5%		
1 – 20% of the time	36.2%	50.9%		
More than 20% of the time	19.1%	7.6%	3.873	.144
VCRs:				
0 percent of the time	17.0%	18.9%		
1 – 20% of the time	74.5%	75.5%		
More than 20% of the time	8.5%	5.6%	0.340	.844
Camcorders/Digital Cameras:				
0 percent of the time	72.3%	78.7%		
1 – 20% of the time	21.3%	17.3%		
More than 20% of the time	6.4%	3.8%	0.655	.821

Table 7: Comparison of Technology based on Rank				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	Full/Assoc. Professors	**Assistant Professors or Lower**		
Front-Orientation Computer Projection Systems (e.g., cart-mounted, ceiling-mounted, portable computer projectors, etc,):				
0 percent of the time	12.8%	1.9%		
1 – 20% of the time	6.4%	1.9%		
More than 20% of the time	80.8%	86.2%	5.970	.051
Rear-Orientation Computer Projection Systems (e.g., SmartBoards, whiteboards, wall-mounted plasma displays, etc.; note: These look like an oversized TV.):				
0 percent of the time	76.6%	88.7%		
1 – 20% of the time	6.4%	9.4%		
More than 20% of the time	17.0%	1.9%	7.068	.029*
Wall-Mounted Plasma Display Panels (Note: These look like a thin-line TV.):				
0 percent of the time	91.4%	100.0%		
1 – 20% of the time	4.3%	0.0%		
More than 20% of the time	4.3%	0.0%	4.699	.095
Digital Image Capture Systems (e.g., document camera "Elmo," scan converters, etc.):				
0 percent of the time	59.6%	62.3%		
1 – 20% of the time	27.7%	34.0%		
More than 20% of the time	12.7%	3.7%	2.867	.239
Networked Computer Labs:				
0 percent of the time	32.6%	47.2%		
1 – 20% of the time	30.4%	26.4%		
More than 20% of the time	37.0%	26.4%	2.307	.317
Types of SOFTware Used During Class Time				
Computer Presentation Software:				
0 percent of the time	8.7%	1.9%		
1 – 20% of the time	6.5%	1.9%		
More than 20% of the time	84.8%	96.2%	3.806	.149

Table 7: Comparison of Technology based on Rank				
	Percent of Respondents		χ^2	**p-value**
Types of Hardware Used During Class Time	**Full/Assoc. Professors**	**Assistant Professors or Lower**		
Spreadsheet Software:				
0 percent of the time	37.8%	23.1%	2.648	.266
1 – 20% of the time	48.9%	63.4%		
More than 20% of the time	13.3%	13.5%		
Database Management Software:				
0 percent of the time	80.4%	88.5%	2.418	.299
1 – 20% of the time	10.9%	9.6%		
More than 20% of the time	8.7%	1.9%		
DELIVERY METHOD (for distance education):				
Distance Education Software-Intranet:				
0 percent of the time	34.0%	23.5%	1.448	.485
1 – 20% of the time	27.7%	35.3%		
More than 20% of the time	38.3%	41.2%		
Distance Education Software-Internet:				
0 percent of the time	33.3%	26.0%	1.207	.547
1 – 20% of the time	33.4%	44.0%		
More than 20% of the time	33.3%	30.0%		
Distance Education Software-Video Conferencing:				
0 percent of the time	87.0%	96.0%	2.659	.265
1 – 20% of the time	6.5%	2.0%		
More than 20% of the time	6.5%	2.0%		
*Significant at á=.05				

Table 8 shows the results of significance tests for difference in usage as a function of teaching at public, state-supported universities or at private universities. Marketing faculty respondents at private universities make significantly more use of VCRs ($x^2 = 8.091$, p = .017) and camcorders/digital cameras ($x^2 = 7.422$, p = .024) than do their counterparts at the public, state-supported universities. Other than these two types of hardware there were no significant differences by type of hardware, software, or distance education software delivery used. Faculty at both public and private universities make relatively heavy use of front-orientation computer projection systems

and computer presentation software, and relatively light use of wall-mounted plasma display panels, digital image capture systems, spreadsheet and database management software, and videoconferencing as a means of delivering distance education.

Table 8: Comparison of Technology based on Type of University				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	Public	**Private**		
Overhead Transparencies:			1.849	.397
0 percent of the time	42.5%	44.5%		
1 – 20% of the time	47.8%	37.0%		
More than 20% of the time	9.7%	18.5%		
VCRs:			8.091	.017*
0 percent of the time	20.6%	11.1%		
1 – 20% of the time	76.7%	70.4%		
More than 20% of the time	2.7%	18.5%		
Camcorders/Digital Cameras:			7.422	.024*
0 percent of the time	79.2%	66.7%		
1 – 20% of the time	19.4%	18.5%		
More than 20% of the time	1.4%	14.8%		
Front-Orientation Computer Projection Systems (e.g., cart-mounted, ceiling-mounted, portable computer projectors, etc,):				
0 percent of the time	9.7%	3.7%	1.926	.382
1 – 20% of the time	2.8%	7.4%		
More than 20% of the time	87.5%	88.9%		
Rear-Orientation Computer Projection Systems (e.g., SmartBoards, whiteboards, wall-mounted plasma displays, etc.; note: These look like an oversized TV.):				
0 percent of the time	84.9%	74.1%	2.476	.290
1 – 20% of the time	5.5%	14.8%		
More than 20% of the time	9.6%	11.1%		
Wall-Mounted Plasma Display Panels (Note: These look like a thin-line TV.):				
0 percent of the time	97.2%	92.6%	1.118	.572
1 – 20% of the time	1.4%	3.7%		
More than 20% of the time	1.4%	3.7%		

Table 8: Comparison of Technology based on Type of University				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	Public	**Private**		
Digital Image Capture Systems (e.g., document camera "Elmo," scan converters, etc.):				
0 percent of the time	61.6%	59.3%		
1 – 20% of the time	31.5%	29.6%	0.488	.783
More than 20% of the time	6.9%	11.1%		
Networked Computer Labs:				
0 percent of the time	38.4%	46.2%		
1 – 20% of the time	24.7%	34.6%	2.855	.240
More than 20% of the time	37.0%	19.2%		
Types of Software Used During Class Time				
Computer Presentation Software:				
0 percent of the time	4.2%	7.4%		
1 – 20% of the time	2.8%	7.4%	1.528	.466
More than 20% of the time	93.0%	85.2%		
Spreadsheet Software:				
0 percent of the time	28.6%	37.0%		
1 – 20% of the time	58.6%	48.1%	0.887	.642
More than 20% of the time	12.9%	14.8%		
Database Management Software:				
0 percent of the time	87.3%	77.8%		
1 – 20% of the time	7.0%	18.5%	2.878	.237
More than 20% of the time	5.6%	3.7%		
DELIVERY METHOD (for distance education)				
Distance Education Software-Intranet:				
0 percent of the time	25.4%	33.3%		
1 – 20% of the time	33.8%	25.9%	0.836	.658
More than 20% of the time	40.8%	40.8%		
Distance Education Software-Internet:				
0 percent of the time	27.5%	30.8%		
1 – 20% of the time	40.6%	34.6%	0.285	.867
More than 20% of the time	31.9%	34.6%		

Table 8: Comparison of Technology based on Type of University				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	Public	**Private**		
Distance Education Software-Video Conferencing:				
0 percent of the time	91.4%	92.6%		
1 – 20% of the time	4.3%	3.7%		
More than 20% of the time	4.3%	3.7%	0.035	.983
***Significant at $\acute{\alpha}$=.05**				

Table 9 shows the results of significance tests on amount of usage of hardware, software, and distance education delivery software as a function of years of teaching experience by the marketing faculty respondents. Although both faculty with more than ten years teaching experience and those with ten years or less experience make relatively low use of classroom time using rear-orientation computer projection systems, those with relatively more experience use this type hardware significantly more than those with ten years experience or less (x^2 = 6.084, p = .048). Similarly, those faculty members with relatively more teaching experience make more frequent use of wall-mounted plasma displays (x^2 = 5.996, p = .05). With respect to all other types of hardware, software, and all types of distance education delivery software, no significant differences were found between the more experienced marketing faculty respondents and those with less experience.

Table 9: Comparison of Technology based on Years of Teaching Experience				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	10 Years or Less	**More than 10 Years**		
Overhead Transparencies:				
0 percent of the time	40.7%	46.4%		
1 – 20% of the time	47.4%	39.0%		
More than 20% of the time	11.9%	14.6%	0.714	.700
VCRs:				
0 percent of the time	18.6%	17.1%		
1 – 20% of the time	76.3%	73.2%		
More than 20% of the time	5.1%	9.7%	0.818	.664

Table 9: Comparison of Technology based on Years of Teaching Experience				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	10 Years or Less	**More than 10 Years**		
Camcorders/Digital Cameras:				
0 percent of the time	75.9%	75.6%		
1 – 20% of the time	20.7%	17.1%	0.876	.645
More than 20% of the time	3.4%	7.3%		
Front-Orientation Computer Projection Systems (e.g., cart-mounted, ceiling-mounted, portable computer projectors, etc,):				
0 percent of the time	3.4%	12.2%		
1 – 20% of the time	1.7%	7.3%		
More than 20% of the time	94.8%	80.5%	5.014	.081
Rear-Orientation Computer Projection Systems (e.g., SmartBoards, whiteboards, wall-mounted plasma displays, etc.; note: These look like an oversized TV.):				
0 percent of the time	86.4%	78.0%		
1 – 20% of the time	10.2%	4.9%		
More than 20% of the time	3.4%	17.1%	6.084	.048*
Wall-Mounted Plasma Display Panels (Note: These look like a thin-line TV.):				
0 percent of the time	100.0%	90.2%		
1 – 20% of the time	0.0%	4.9%		
More than 20% of the time	0.0%	4.9%	5.996	.050
Digital Image Capture Systems (e.g., document camera "Elmo," scan converters, etc.):				
0 percent of the time	62.7%	58.5%		
1 – 20% of the time	32.2%	29.3%		
More than 20% of the time	5.1%	12.2%	1.665	.435
Networked Computer Labs:				
0 percent of the time	45.8%	32.5%		
1 – 20% of the time	27.1%	30.0%		
More than 20% of the time	27.1%	37.5%	1.928	.381

Table 9: Comparison of Technology based on Years of Teaching Experience				
Types of Hardware Used During Class Time	**Percent of Respondents**		χ^2	**p-value**
	10 Years or Less	**More than 10 Years**		
Types of Software Used During Class Time				
Computer Presentation Software:				
0 percent of the time	1.7%	10.0%	5.628	.060
1 – 20% of the time	1.7%	7.5%		
More than 20% of the time	96.6%	82.5%		
Spreadsheet Software:				
0 percent of the time	22.4%	41.0%	3.998	.135
1 – 20% of the time	63.8%	46.2%		
More than 20% of the time	13.8%	12.8%		
Database Management Software:				
0 percent of the time	84.5%	85.0%	1.247	.536
1 – 20% of the time	12.1%	7.5%		
More than 20% of the time	3.4%	7.5%		
Delivery Method (for distance education):				
Distance Education Software-Intranet:				
0 percent of the time	21.1%	39.0%	3.775	.151
1 – 20% of the time	35.1%	26.8%		
More than 20% of the time	43.9%	34.1%		
Distance Education Software-Internet:				
0 percent of the time	25.5%	35.0%	1.047	.592
1 – 20% of the time	41.8%	35.0%		
More than 20% of the time	32.7%	30.0%		
Distance Education Software-Video Conferencing:				
0 percent of the time	91.2%	92.5%	0.566	.753
1 – 20% of the time	5.3%	2.5%		
More than 20% of the time	3.5%	5.0%		
***Significant at ά=.05**				

DISCUSSION

As expected, the results indicate that, in general, marketing faculty have begun to make considerable use of technological innovations to supplement their instructional efforts. Indeed, in some cases, the product adoption process appears to be well underway. For example, among those members of the AMA who responded, an extraordinarily high percentage (92.1%) makes some regular use of front-oriented computer projection devices in the classroom. Clearly, the nature of equipment provided by the university is a major factor in the adoption of the technology by faculty. Although beyond the scope of the present study, it would be interesting to explore the process of institutional adoption of technology at universities in order to discover how purchasing decisions are made. For example, how much impact do faculty have in equipping labs and classrooms? The current results indicate that relatively more expensive projection systems such as rear-oriented and wall-mounted systems are used by much smaller percentages of faculty members. Cost barriers are likely a major factor in this trend. Front-orientation computer projection systems are the less expensive method of providing computer image projection, and typically involve no more than a computer and projector mounted on a cart for a total cost of roughly $3,000-4,000. More expensive computer projection system alternatives include rear-orientation systems resembling free standing, over-sized television sets, and wall-mounted plasma display panels that resemble thin-line television sets. These devices often provide digital chalkboard capabilities that enable the instructor to write electronically directly on the image, as well as slightly better imagery. Their relatively high costs, which fall in the $15,000-to-$25,000 range, likely contributes to their scarcity and the subsequent low rates of faculty usage indicated in the survey.

The present results also indicate a low rate of usage for digital image capture systems (also known as document cameras or "Elmos"). Such systems function as closed-circuit television cameras and bear a physical resemblance to an overhead transparency projector. Unlike overhead transparency projectors that simply project a visual image through a magnifying lens, digital image capture systems electronically scan the image, convert it to digital form, and then project it to a viewing screen. This process enables the instructor to simply place a newspaper or book under the camera to project an enlarged image electronically. A digital image document camera is typically included as an adjunct to an existing front-orientation projection cart. The relatively high cost of this item as an auxiliary device, roughly $1,000-2,500, likely contributes to its scarcity as well. The simplicity of use, however, may make it relatively attractive to less technologically oriented faculty Approximately half of the respondents reported some degree of use of networked computer labs in their courses. The majority of these reported patterns of usage of less than 20% of the course. Networked computer labs permit the instructor to guide students through statistical analyses associated with marketing research and other activities for specific marketing courses, as well as other coordinated in-class activities requiring computer access. Most universities provide more

generically oriented lab facilities appropriate for use by multiple disciplines and not specific to the marketing profession.

With respect to software, 95% of those responding indicated the regular use of computer presentation software such as PowerPoint. Of these, 64% reported using such software more than 60% of the time in their courses. This suggests the utility of such a delivery method in teaching marketing concepts. Textbook publishers have also fueled the popularity of presentation software by supplying complimentary presentation software for many textbooks. Lindstrom (1998) notes that PowerPoint controls over 93% of the presentation software market in the world.

While some might argue that spreadsheet analysis is not the primary tool of the marketing manager, the use of spreadsheets is still important when doing statistical comparisons and analyses, such as the comparison of sales figures for different areas and/or making sales forecasts under different conditions. Publishers also commonly provide student disks with spreadsheet templates for cases and problems. Nearly 70% of respondents indicated some degree of usage of such software. By the same token, much lower percentages of use were reported for database management software (e.g. Access). Since availability is likely not an issue, this suggests that these programs are not as useful in the teaching of marketing. However, if more marketing programs integrate the growing topic of customer relationship management (CRM), with its emphasis on database mining, we may see an increased use of database management software in marketing classes. As this study was patterned after an earlier one (Cudd, Tanner, and Lipscomb, in press), the use of data mining was not explored in the present study. This is a topic that should be included in future investigations.

Some universities are dedicated to course offerings delivered exclusively through distance education (e.g., University of Phoenix). Virtually all universities provide distance education delivery for selected courses, and the trend appears to be toward increasing the percentage of curricula available online. Interestingly, nearly a third of the marketing faculty members responding indicated that they are involved or have been involved in using distance learning technology to teach at least one course while 71.6% have not done so. In addition to traditional correspondence courses and course lectures offered via the Public Broadcasting System, there are three newer technology-based methods of distance education course delivery. First, many universities sponsor local sites for course offerings managed by intranet software (e.g., BlackBoard or WebCT). This provides an online environment for each student to submit questions, obtain responses (from the instructor or other students), obtain course documents (such as course syllabi, presentation software files, spreadsheet files, data management files, special readings documents, etc.), hold chat sessions with other students, obtain course assignments, submit completed assignments, and check grade status. The accompanying whiteboard software also provides the ability for students and faculty to simultaneously write on the same electronic document. This type of online visual aid supports virtual class meetings held online. Whiteboard software only offers practical support of spontaneous student written replies (i.e., a Socratic environment) if each student is equipped with an electronic writing tablet.

Second, textbook publishers provide similar homepages for each specific textbook offering. These Internet sites provide the same services and offerings as intranet pages; except the publisher-provided homepages are national or international in scope, and students nationwide will not all be covering the same chapters at the same time. A third method of offering courses via distance education is through video conferencing (i.e., compressed video). Compressed video conferencing software (e.g., PictureTel, PolyCom, Net Meeting, etc.) enables students to attend a local physical classroom and receive and interact with an instructor at a remote location through two-way video and audio hardware and software. One deterrent to this mode of distance education is the relatively high cost of offering courses in this manner, which include the usage cost of the communications lines, remote classrooms, and compressed video equipment at all classroom sites.

A number of interesting patterns are apparent in the data as a function of demographic characteristics of the respondents. One of the most intriguing of these relates to gender differences in technology usage patterns. For example, female faculty members report making significantly greater use of computer presentation software as compared to their male counterparts. It is interesting that a previous investigation found the same pattern among Finance faculty members (Cudd, Tanner, and Lipscomb, in press). Women in the present sample also report significantly greater use of intranet software in teaching distance education classes. There were, however, no significant differences between male and female faculty members with respect to the various types of hardware employed. Although the specific reasons underlying gender-based differences in technology usage are unclear, it is noted that differences were also found as a function of both academic rank and years of teaching experience. In the present sample women tended to report fewer years total teaching experience and more junior academic rank as compared to men.

As mentioned, differences in technology usage patterns were also found as a function of academic rank. Specifically, it was found that junior faculty members (assistant professors and instructors) make significantly greater use of front oriented computer projection systems than do senior faculty member (professors and associate professors) whereas senior faculty make relatively greater use of rear-oriented projection equipment. In addition, senior faculty make relatively greater use of networked computer labs as compared to more junior faculty members with usage in neither case exceeding 40%.

Years of experience also found to be related to patterns of technology usage. Significant differences were found in comparing those with more than ten years of teaching experience with those with ten years or less experience. Those with relatively less experience reported both using front-oriented projection systems and computer presentation software more than did those with more experience. On the other hand, more experience faculty members reported using wall-mounted plasma projection and networked computer labs more than did less experienced faculty members but overall usage was rather low in both cases.

In order to better understand the present findings, the significant relationships among gender, rank, and years teaching, is worthy of discussion. Since women in the present sample tended to be

assistant professors and have spent less time in the college teaching profession, gender-based differences in technology utilization may be a function of more recent training. That is, more recent entrants into the "marketing academy" may have had greater exposure to and greater expertise with the use of technology for instructional purposes. The possibility that this is the case is worthy of further investigation in future studies.

Rogers' views on the diffusion of innovation apply here: "A technological innovation usually has at least some degree of benefit for its potential adopters, but this advantage is not always clear cut to those intended adopters. They are seldom certain that an innovation represents a superior alternative to the previous practice that it would replace, at least when they learn about it" (Rogers 2003, p. 14). As marketing professors become better acquainted with the new technological innovations and as more universities acquire and make these available to faculty it is likely that we will see diminished use of some "old friends" like transparencies, overhead projectors, VCRs, and camcorders in favor of these newer innovations. Many of the newer technologies incorporate features of some of the older ones. For instance, Smart Boards allow the projection of videotapes through connecting VCRs. Wireless technologies may soon make even more radical changes in our classroom. As was noted above, more than ¾ of participating institutions have already established wireless LANS (Campus Computing Project, 2003)

There are several limitations of this study. These include self-selection bias, sample size, and the lack of sampling error measurement from the use of a web-based survey. All of these suggest that caution is in order in generalizing the present findings to marketing faculty as a whole. One participant commented in an e-mail message to one of the authors that the wording of our opening question is problematic. It would have been better to ask professors to focus on a particular semester, rather than on semester class time in general. Answers might vary greatly from semester to semester, depending on several factors. Thus, the question wording should be considered another limitation of this study. Never the less, the present exploratory study may have considerable value in serving as a benchmark against which future research can gauge trends in technology adoption and use for the purposes of instruction in marketing.

Just as professors become more comfortable with collecting data over the Internet rather than via the telephone or mail, we also become more comfortable using the technological innovations that come into our classrooms. One key question, though, that has not been addressed, and probably should be, is this: with all the new technology, are marketing departments (and deans) prepared to provide the financial support and technical training that will be required (mandated?) by all these technological pedagogical enhancements? Time will tell.

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CREATING AN EFFECTIVE ONLINE LEARNING ENVIRONMENT: A SHIFT IN THE PEDAGOGICAL PARADIGM

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ABSTRACT

The emergence of the Internet and the World Wide Web has significantly changed every aspect of business. Education, too, has changed considerably as evidenced by the exponential increase in online courses. Online courses offer numerous advantages over traditional courses to administrators, instructors, and students. However, while the use of online courses is increasing, it remains unclear whether the pedagogical and learning approaches, that are required to make these courses effective, are keeping pace with the ability to deliver such courses.

The primary objective of this paper is to describe the growth and development of distance education, discuss the three dimensions of teaching online courses, examine some of the issues and concerns for faculty teaching online courses, and provide some implications for faculty either teaching or considering teaching online courses.

INTRODUCTION

Distance education has experienced exponential growth in the past decades. An increasing number of universities, both large and small, currently offer entire degree programs in a distance learning environment. More than half of the 2,215 four-year colleges and universities in the U.S. offer distance-learning courses (Gubernick and Ebeling 1997; Vasarhelyi and Graham 1997). In 1998 there were 710,000 students taking distance education classes and that number is expected to climb to 2.2 million in 2002 (Koury 2000). While total college enrollments are increasing at a rate of about 2% per year, distance education enrollments are increasing at a rate of approximately 30% per year (Bertagnoli 2001).

The most recent development in distance education is the use of online courses delivered through the Internet. Three major factors have spurred the growth of online courses. First, the cost of education has soared, and universities are seeking more economical methods of course delivery. Second, compression technologies, increased computing power and speed, reduced costs, and an increased comfort level with technology have increased the ease of learning online. Third, the

remarkable growth of part-time, non-residential, non-traditional students has further increased the demand for these courses since these students do not have the flexibility to enroll in traditional courses (Hubbard 1997; Green 1996; Schwartz 1995).

Growth in online courses and programs appears to be strongly supported by administrator's motivations of increased enrollments and perceived cost savings. In addition, recent research indicates that the quality of online education is as effective as the traditional classroom format (Borthick and Jones 2000; Schulman and Sims 1999). However, in spite of the continued strong growth in online courses and the advantages it offers, reaction from academic circles has been mixed at best. The American Federation of Teachers (AFI) has publicly voiced concerns about online courses and has asked its members to oppose such technology-based programs unless they are sure that quality standards are being met (Blumenstyk 1996). Faculty members have raised concerns about job security, lack of personal interaction with students, and decrease in the quality of education when online learning technology is used. Thus, although the use of online courses is increasing, it remains unclear whether the pedagogical and learning approaches that are required to make these courses effective, are keeping pace with the ability to deliver such courses.

The primary objective of this paper is to describe the growth and development of distance education, discuss the three dimensions of an effective online course, examine some of the issues and concerns for faculty teaching online courses, and provide some implications for faculty either teaching or considering teaching online courses.

GROWTH AND DEVELOPMENT OF DISTANCE EDUCATION

While it may appear that distance education is a relatively recent educational phenomenon, it can actually be traced back one hundred and fifty years. Distance education has developed in four generations (Bates 1995) [Exhibit 1]. The first generation models originated in the nineteenth century, used only one technology, and used the traditional model of education, which involved transferring knowledge from professor to student, and in which the student was viewed as an "empty vessel." These early models required little or no interaction between the instructor and the student, were delivered either in print, or via radio or television, and were normally broadcast once with the student having to "attend class" at the time it was broadcast.

The 1960s witnessed the development of the second generation and involved the use of multiple technologies, such as audio and video-cassettes. Again, communication was primarily one way with occasional interaction by phone, fax and mail.

The third generation, starting in 1985, began new delivery methods involving multiple technologies, including the computer, CDs, e-mail, chat rooms, bulletin boards, video conferencing, and audio conferencing. Many universities began to deliver courses to multiple sites, and two-way communication was possible, involving increased interaction between the instructor and the student.

Exhibit 1
Evolution of Distance Learning

Generation 1
- 1800 to 1960
- One way communication
- Single technology used (Print, radio or television)
- Knowledge "transferred" to student
- Student viewed as "empty vessel"
- Little interaction between instructor and student

Generation 2
- 1960 to 1985
- One way communication
- Multiple technologies used (Print, radio, television, and audio/video cassettes)
- Increased interaction between instructor and student by phone, fax, and mail

Generation 3
- 1985 – 1995
- Two way communication
- Multiple technologies used (Print, radio, television, and audio/video cassettes)
- Increased interaction between instructor and student by phone, fax, and mail
-

Generation 4
- 1995 – present
- Two way communication
- High bandwidth, multiple technologies used (Print, radio, television, and audio/video cassettes)
- Increased interaction between instructor and student by phone, fax, and mail

The fourth generation (1995 to current) is similar to the third generation except for the development of high-bandwidth computer technologies, and the ability to provide increased synchronous interactions. Due to the limited bandwidth available today, however, most delivery methods are still using third generation technology. It is expected, however, that these new models for distance education will expand dramatically in the near future (Dolence and Norris 1995).

THREE DIMENSIONS OF TEACHING AN ONLINE COURSE

Effective online courses have three important dimensions: information dissemination (of course material, course content, and additional sites), communication (by e-mail, discussion groups, and chat rooms) and class management (tracking attendance, recording progress, evaluating performance, and providing feedback) (McCormack and Jones 1998). [Exhibit 2]. Each of these dimensions is discussed in detail below.

Exhibit 2: Three dimensions of an effective online course

Information dissemination
Structured course syllabus
Appropriate course content
Relevant course assignments
Links to additional sites

3 dimensions of an effective online course

Course management
Tracking attendance
Recording progress
Evaluating performance
Providing feedback

Communication
Discussion board
Chat room
Email

Information Dissemination

An important aspect of disseminating information effectively is the selection of an appropriate text for the course. When selecting a text for an online course, it is critical for an instructor to evaluate the online resources available with the text. A text that includes supplemental material such as PowerPoint slides, online tutorials and quizzes, links to other related sites and resources, answers to alternate problems, and open-ended case discussion type questions, makes the course more informative and creates an intellectually stimulating environment that facilitates learning.

While traditional courses allow faculty the flexibility to modify course material and schedules during the semester, an online course has to be essentially fully completed prior to starting the semester. While designing and developing an online course, an instructor needs to be aware of factors such as course layout, ease of navigation, and strategies for promoting interactivity. Course content should be organized or broken down into small chunks for better manageability. In addition,

structure is even more important in online courses than traditional courses. The requirements and expectations of the course need to be outlined clearly in the syllabus. Assignments need to be specific with regard to submission deadlines and grading policy. Instructors should be mindful of the objectives of the course, the content and structure they use to achieve these objectives, and the audience (students) to whom they are delivering the course.

Some content is typically more appropriate than others in an online environment. Material that allows, in fact encourages, debate, discussion, and an exchange of ideas is very appropriate. The use of open-ended case discussions, where students were required to take a position and defend it, is particularly effective.

Online access to various sources allows a wide array of information to be accessible to students. This increases the likelihood that relevant information can be integrated in assignments involving problem solving. As opposed to traditional paper assignments in a classroom setting, performance is not limited by what a student remembers but by how effectively a student can access relevant sources and integrate the information and concepts in responding to a particular assignment.

Communication

In an ideal online environment, an instructor assumes the role of facilitator rather than a lecturer or a dispenser of information. Rather than presenting information, the instructor should ensure that relevant information is integrated into the assignment, that misdirection and misunderstanding of the nature of an assignment is attended to promptly, and that all discussions end with a summary of a group's progress on an assignment (Harasim et al. 1995).

In an online environment, students participate and contribute to class discussions without being inhibited or distracted by other students. The absence of social cues, such as gender, skin color, age, and accent, prompts greater focus on the assignment and creates an environment where the student is "judged solely on the basis of achievement" (Davie and Wells 1991).

The quality of online discussions tends to be of a high level, since students have the opportunity to reflect on and edit their comments before posting them for other students to see. Moreover, since all class discussions can be logged, note taking becomes unnecessary and students can devote their energies to participating constructively on class assignments and discussions rather than taking notes. It also permits students who may have been inactive for a certain period of time to catch up.

In order to encourage communication among students it is important to establish a clear protocol early in the semester. If an instructor is using teams, which is highly recommended, students should be told to discuss issues and questions among their team members first, using their group discussion boards. If this fails to resolve the issue, they should post their comments on the class discussion board and allow other students to comment. If this too fails, the instructor can be approached to mediate, discuss, and/or resolve the issue.

This approach has several advantages. It encourages students to discuss problems and concepts in an attempt to answer their questions rather than simply approaching the instructor for a quick-fix solution. This reinforces learning and fosters a collaborative learning atmosphere, which is more likely to be effective in preparing students for the current work environment than the traditional lecture format (Raelin 1997; Leidner and Fuller 1997; Macdonald 1995). Recent research indicates greater student participation in on-line courses than in traditional face-to-face courses (Borthick 2000; Hiltz and Wellman 1997).

In order to encourage student participation and provide them with an incentive to attempt to resolve other students' questions and concerns, it is imperative to assign some part of the student's grade to participation. Based on our experience teaching online courses, students will step up to resolve issues among themselves and the instructor gradually assumes the role of a facilitator as the semester progresses.

Information about the basics of "netiquette" should be communicated early in the semester and students should be reminded that without visual cues such as body language or smiles, their comments could sometimes be misunderstood. For instance, students should know that capital letters should only be used for emphasis; otherwise, it appears as if the author is yelling.

In order to initiate discussions on a particular topic, the instructor can either pose a question to which students respond, or ask students to respond to a particular assignment. Instructors should monitor the discussion forum, but do not need to respond to every discussion post. However, the instructor needs to let the student know that he is reading the discussion by occasionally commenting on student entries. The instructor should also look for "teaching opportunities" by posting thought-provoking comments and should attempt to keep the discussion going by prompting inactive students to participate in ongoing discussions. Once the discussion is over, the instructor should lock that particular discussion area. Students are unable to post any further discussions to a discussion area once it has been locked, but can review past assignments and discussions; thus, it serves as an invaluable reference tool, similar to a classroom library.

In order to duplicate as much of the traditional classroom experience as possible, the instructor can also provide a chat room for the class. The chat room offers an opportunity for students to communicate in "real time" with each other and helps in the development of a learning community. Individual private chat rooms can also be set up for students to interact with guest speakers.

The two most significant disadvantages of communication in an online environment are students' difficulty in following multiple conversations and occasional technical glitches resulting in loss of connectivity. Multiple conversations are unavoidable in an online environment. By the time a student composes a response or comment to a particular ongoing discussion, there may have been several comments posted in the interim or the discussion may have shifted to a different topic. This may cause the discussions to appear disjointed. Some ways to reduce this apparent problem and make discussions easier to follow is to prompt students to follow the practice of making explicit

references to antecedent discussions, particularly when some time had passed since the antecedent discussion. Also, a facilitator should point students toward discussions that have been insufficiently dealt with and help students reach closure of a discussion topic.

Occasional losses of connectivity also are inevitable. Short outages appear to have minimal effect on the students. Also, students seem appeased by being informed of the cause and steps taken to avoid a recurrence (Borthick and Jones 2000). If there are long lapses in connection, instructors are advised to be flexible regarding due dates for assignments.

Class Management

There are several components of class management: tracking attendance, recording progress, evaluating performance, and providing feedback. Instructors can track student participation either by the number of original or follow up posts to the discussion board, by the number of times a student visited a particular course site, or the length of time the student was logged on to a particular segment of the course. The last two features can provide some important cues to the instructor besides tracking student participation. If a particular segment is being accessed a lot more frequently than others or if students are spending an inordinate amount of time on a particular topic, it might indicate that students either find the material challenging, do not understand the assignment related to that segment, or have technical problems with that segment.

Instructors can also post grades for all assignments online, enabling students to track their progress at any given point in the semester. Students can also compare their individual grades for any particular assignment relative to other students since most online platforms report grade distributions, mean, and median scores.

ISSUES AND CONCERNS FOR INSTRUCTORS TEACHING ONLINE COURSES

Faculty who are either teaching or considering teaching online courses for the first time, need to be aware of certain issues and concerns. One of the greatest impediments to teaching online courses is the significant start-up time required to either develop a new course or transform an existing course to an online course. The increased time involvement is especially a concern for junior untenured faculty who are expected to publish and have an active research agenda. If administrators responsible for making tenure and promotion decisions do not recognize the increased time commitment necessary for teaching online courses and are resistant to providing release time, faculty proposing to teach these courses may not be favorably inclined to do so.

Another problem related to teaching online is that both students and instructors will almost certainly encounter technical problems. Occasionally, pages designed using one Internet browser, may not be displayed properly if students use another browser. Students may also have difficulty downloading additional information that instructors put on their online courses, such as audio or

video files, due to slower modem connections. Furthermore, networks will go down from time to time, hard drives will crash, and Internet Service Providers may occasionally fail to "provide".

Another issue of importance for faculty members is intellectual property rights. Although faculty have property rights to their own research, it is less clear who has property rights to course design and materials (Banas and Emory 1998), particularly if the University provided resources such as release time, equipment, and training to develop the course. Some institutions believe that instructional materials produced for a specific course belong to the institution. In fact, it has been suggested that in the future, institutions will require faculty to assign all copyrights on course material to the university as a condition of employment, similar to the policy on patents (Noble 1998). Unless issues about ownership and rewards are resolved mutually, this can be a serious impediment to the continued growth in online education.

Finally one of the greatest impediments of teaching online courses is for instructors to replace their traditional role as a "sage on the stage" in favor of a "guide on the side". While most traditional face-to-face courses are instructor-centered, online courses are student-centered. Faculty, who for decades have been conditioned to hold center-stage, are required to instead be good facilitators in order to be effective at teaching online courses. This may be the greatest hurdle that instructors may have to overcome to be effective online instructors. If instructors are able to make this shift, they may be rewarded with greater and richer student involvement in the course.

CONCLUSIONS AND IMPLICATIONS FOR FACULTY

In conclusion, despite the concerns about online learning, it does provide an opportunity for more diverse, larger numbers of people to participate in higher education. As universities grapple with increasing costs and decreasing enrollments, online education can extend the reach of the university. Online courses offer numerous advantages compared to traditional course offerings. Since online courses are independent of location and time, they are accessible to students that are unable to attend traditional courses at a specific location and at specific times. Students can access course materials, participate in class discussions, submit assignments, and view grades, anytime and from any location. This is perhaps the most significant advantage offered by online courses vis-à-vis traditional courses.

Online courses are designed to impart skills that are usually not apparent in traditional courses. Businesses today want to emphasize problem solving skills, team skills, interdisciplinary knowledge, information processing, and mastery of technology that is integral to learning. In the traditional classroom, however, instructor's present information (in the form of lecture) and students are responsible for demonstrating that they have acquired it. Online courses, on the other hand, provide access to greater source and assignment materials and encourage students to address problems and concepts, rather than to simply remember the information presented.

Recent research has documented an increase in student participation for online courses versus traditional face-to-face courses (Hiltz and Wellman 1997). Increased active participation by online students, involving discussing and doing, rather than passive participation, in the form of receiving lectures in a traditional course, is associated with increased learning. Recent research has also found that online courses are as effective as traditional courses (Borthick and Jones 2000; Schulman and Sims 1999) with respect to achieving learning objectives.

Contrary to Drucker's opinion, online learning will not replace the traditional classroom. We don't believe that online learning will replace the traditional classroom. Higher education has diverse learning goals that require a multifaceted array of educational strategies. Since the learning needs of students are also diverse, providing options for all of those students will be essential. The market for online education will continue to expand into the next century and business faculty who want to stay in the forefront of education would be wise to embrace the opportunities offered by this exciting new teaching and learning paradigm.

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HIGHER EDUCATION IN THE GLOBAL ECONOMY: A STUDY ABROAD COMPARISON

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ABSTRACT

Based on historical trends, recent shifts and emerging challenges, the study draws a multivariate contextual model to explain the competitive landscape of higher education in the global market with special attention to international exchange programs in the United States. U.S. educational exchange programs are analyzed from three perspectives: (a) enrollment trends of international students and their major contributions to the U.S. economy, (b) the growing demand for international experiences from American students and prospective employers, and (c) the importance of human capital development in a nation's long-term economic strength. Recent statistics indicate that the United States remains the most popular destination for international students, and international students contribute to the U.S. economy both in terms of their educational and living expenses in the host country and of their intelligence in research, technology advancement, and product innovation. Meanwhile, the world of higher education is increasingly competitive across borders. Multiple factors have led to a recent decline of international student enrollments in the United States. The study takes a comparative approach to address key variables and their interrelationships in the global context. Suggestions for future research and implications to the practical field are discussed.

RESEARCH BACKGROUND

Within the context of economic globalization and the growing need for human capital development around the world, the present study is focused on the role of higher education with special attention to international educational exchange programs in the United States. The competitive landscape of international educational programs is analyzed from three perspectives: (a) enrollment trends of international students and their contributions to the U.S. economy, (b) the growing demand for international experiences from American students and prospective employers, and (c) the importance of human capital development in a nation's long-term economic strength.

According to the most recent survey by the Institute of International Education (IIE 2004a), international students contribute approximately US$13 billion to the U.S. economy each year in terms of tuition, living expenses and family related costs. The U.S. Department of Commence described higher education as the country's fifth largest export in the service sector. Concurrent

with many international students choosing the United States as their favorite destination for higher education, the number of American students electing to study abroad has been increasing rapidly but the outbound number is significantly smaller than the inbound number.

From a career perspective, employers tend to agree that candidates with an international learning experience are likely to possess key skills to meet job requirements such as communication, flexibility, leadership, innovation, maturity, independence, and interpersonal relationship (AEO, BC, DAAD, USDOE & USSD, 2003). From a human capital development perspective, a nation's long-term economic strength will to a large extent depend on the nation's ability to produce, support, and sustain a qualified, flexible, innovative, and mobile workforce. Economic globalization denotes a growing demand for human capital development and global mobility of human resources. As an example, of the 500 U.S. firms surveyed by the Hewitt Associates (2004), 45% indicated that they are currently using a global sourcing model to obtain cost efficient human resources. The percentage of jobs being outsourced is averaged 13% for those surveyed firms and will roughly double in about three years. At the same time, the strength of the U.S. higher educational systems helps attract and develop human capital supplies to the Untied States. American universities host international students and visiting scholars from all over the world, and many of them do research while pursuing a degree or seek career opportunities with U.S. employers. Obviously, international educational exchange programs are beneficial to multiple stakeholders, including international students and their home countries, American students with enhanced international exposures, participating educational and research institutions, and prospective employers. It is increasingly recognized that internationalizing the campus and enhancing study abroad programs for American students are of the compelling national interest.

Recent statistics (IIE, 2004a) indicate that the United States remains the most popular destination for international students. International students continue to make significant contributions to the U.S. economy both in terms of their educational and living expenses in the host country and of their intelligence and productivity in research, technology advancement, and product innovation. Meanwhile, the world of higher education is getting more competitive in the global market. Multiple factors have led to a recent decline of international student enrollments in the United States for the first time since 1971. Among alternative countries competing for international students are Canada, the United Kingdom, Germany, Australia, and New Zealand. As well, educational and career opportunities in leading countries of international students' origin such as China and India have been increasing, where the economic growth rates have been most prominent in the world and human capital development must catch up.

Where, by tradition, firms are going overseas for proximity to natural resources and cheap labor, the contemporary paradigm has presented a new reality: organizational productivity and competitiveness have become increasingly dependent on human capital availability and mobility. The paradox of pursuing unskilled cheap labor for cost saving in the short term entails higher costs for employee training and development in the near future (Dowling & Welch, 2005). It is under

those circumstances that the present study explores the role of higher education in a nation's long-term economic strength. The primary purpose of the study is to identify key values of international educational exchange programs and to stress emerging challenges in the increasingly competitive global market. For the former, I incorporate some recent national and international data reports (e.g., IIE, 2004; Hewitt Associates, 2004; AEO, BC, DAAD, USDOE & USSD, 2003) to address key values of international educational exchange programs and recent shifts in the global market. For the latter, I draw a multivariate contextual model to explain the competitive landscape of higher education in the increasingly intertwined world. Important issues emerging from the research also include how culture influences educational systems and programs, historical trends and prospects in U.S. international educational exchange programs, and policy implications from global competition and recent shifts.

KEY VALUES OF INTERNATIONAL EDUCATIONAL PROGRAMS

The United States is by far the most popular destination for international students to pursue higher education. According to the most recent survey by the Institute of International Education (IIE, 2004b), the top ten leading places of international students' origin include India, China, South Korea, Japan, Canada, Taiwan, Mexico, Turkey, Thailand, and Indonesia, followed by Germany, the United Kingdom, and Brazil. In the 2003/04 academic year, the United States hosted over 572,000 international students, but among the twenty leading places of international students' origin, sixteen showed an enrollment decrease from the 2002/03 record (Table 1).

Among top major fields of study pursued by international students are business and management, engineering, mathematics and computer sciences, social sciences, and physical and life sciences (IIE, 2004c). Table 2 provides more detailed information about international students' major fields of study in the United States.

The role of international educational exchange programs in the U.S. economy and their significant contributions to the national interest at large can be shown in several major aspects.

National Wealth and Economic Strength

Higher education is an important service industry in the United States. According to the World Fact Book (2005) posted by the USCIA, service industries account for as high as 79.4% of the nation's GDP. The U.S. Department of Commence describes higher education as the fifth largest export in the service sector. In fact, most of the world industrial societies are predominantly service-oriented economies. In the United States, over 76% of all private sector jobs are now in service industries, followed by about 75% in Canada, 73% in Australia, 69% in U.K., 68% in Germany, and 65% in Japan.   With the greatest collection of faculty, facilities, and resources, American universities host nearly 650,000 international students and visiting scholars annually. International

students alone contribute approximately US$13 billion to the U.S. economy each year in terms of tuition, living expenses and family related costs. Nearly 78% of all international students' funding comes from sources outside of the United States (IIE, 2004a). Since international students pay steeply high out-of-state tuition, their enrollments make U.S. educational institutions less dependent on the state funding. As many international students pursue graduate degrees, which often involve research activities, they also help attract grants from the federal and corporate sources.

Rank	Place of Origin	2002/03	2003/04	% Change	% of U.S. Int'l Student Total
	TOTAL	586,323	572,509	-2.4	
1	India	74,603	79,736	6.9	13.9
2	China	64,757	61,765	-4.6	10.8
3	South Korea	51,519	52,484	1.9	9.2
4	Japan	45,960	40,835	-11.2	7.1
5	Canada	26,513	27,017	1.9	4.7
6	Taiwan	28,017	26,178	-6.6	4.6
7	Mexico	12,801	13,329	4.1	2.3
8	Turkey	11,601	11,398	-1.7	2.0
9	Thailand	9,982	8,937	-10.5	1.6
10	Indonesia	10,432	8,880	-14.9	1.6
11	Germany	9,302	8,745	-6.0	1.5
12	United Kingdom	8,326	8,439	1.4	1.5
13	Brazil	8,388	7,799	-7.0	1.4
14	Colombia	7,771	7,533	-3.1	1.3
15	Kenya	7,862	7,381	-6.1	1.3
16	Hong Kong	8,076	7,353	-9.0	1.3
17	Pakistan	8,123	7,325	-9.8	1.3
18	France	7,223	6,818	-5.6	1.2
19	Malaysia	6,595	6,483	-1.7	1.1
20	Nigeria	5,816	6,140	5.6	1.1

Table 1: International Students' Leading Places of Origin

Source: Adapted from Open Doors Report, IIE, 2004

	Table 2: International Students' Leading Fields of Study in the United States				
Rank	Field of Study	2002/03	2003/04	% of Total	% Change
	TOTAL	586,323	572,509	100.0	-2.4
1	Business & Management	114,777	109,187	19.1	-4.9
2	Engineering	96,545	95,183	16.6	-1.4
3	Math & Computer Sciences	71,926	67,736	11.8	-5.8
4	Social Sciences	45,978	54,083	9.4	17.6
5	Physical & Life Sciences	43,549	44,605	7.8	2.4
6	Fine & Applied Arts	31,018	31,817	5.6	2.6
7	Undeclared	36,395	29,265	5.1	-19.6
8	Health Professions	28,120	25,693	4.5	-8.6
9	Humanities	19,153	16,593	2.9	-13.4
10	Education	16,004	15,888	2.8	-0.7
11	Intensive English Language	17,620	14,971	2.6	-15.0
12	Agriculture	6,763	7,276	1.3	7.6
	Other	58,473	60,212	10.5	3.0
Source: Adapted from Open Doors Report, IIE, 2004					

Given the U.S. economy has been shifting from a traditional manufacturing-oriented economy to a service-oriented economy, the preeminence and appeal of U.S. higher educational systems is crucial to the national wealth and economic strength. Higher education plays an important role in generating export revenues to the state, in adding monetary resources and brainpower to educational and research institutions, and in developing human capital supplies to the corporate sector and the U.S. society at large.

Sciences, Technology, and Innovation

While most international students return home after graduation, many of the best pursue career futures in the United States and make important contributions to research, technology advancement, and product innovation. The corporate society as well as American universities and research institutions benefit from these priceless human capital supplies from all over the world. Almost 1/3 of the doctoral degrees in sciences and engineering go to international students. In engineering alone, close to 60% of full-time doctoral candidates are from overseas. On the one hand, native-born Americans are such technophobes that without foreigners, many universities and similarly situated high-tech companies would have to close their engineering and science departments (Boston Herald Editorial, 2005). On the other hand, despite the increased border entry

obstacles associated with the national security measures after the 9/11, the United States remains the favorite destination of aspiring Chinese, Indian, and many other foreign students in sciences and engineering. American universities are also highly appealing to international scholars. Each year, the United States hosts some 80,000 visiting scholars from all over the world. Their top fields of specialization include life and biological sciences, health sciences, physical sciences, engineering, business management, computer and information sciences, social sciences and history, agriculture, and mathematics (IIE, 2004d). Table 3 presents various fields of specialization that international scholars bring with them to the United States.

Cross-cultural Communication and Greater Understanding

International students observe and learn about the U.S. culture from firsthand experiences. Whether they go home or stay after graduation, international students make important contributions to the U.S. cultural diversity and help enhance cross-cultural communication with the rest of the world. As former Secretary of State Collin Powell put it, "I can think of no more valuable asset to our country than friendship of future world leaders who have been educated here." In China, for example, leaders with an overseas educational background account for over 50% of upper level managers in high-tech development districts, 50% of leading cadres at department or higher levels in government organizations of science and technology, 81% of Academicians of the Chinese Academy of Sciences, and 54% of Academicians of the Chinese Academy of Engineering (Jiao, 2005). International students and visiting scholars add to the U.S. culture to win the hearts and minds of others. As well, they bring global dimensions to classrooms and their diverse international experiences to American campus lives.

GROWING DEMAND FOR INTERNATIONAL EXPERIENCES

More than ever American students are recognizing the importance of international experiences in the increasingly interdependent world. According to the Open Doors press release (IIE, 2004e), the number of American students receiving higher educational credit from study abroad programs increased sharply by 8.5%, reaching a record high in the 2002/03 academic year. Since 1991, the number of American students studying abroad for credit has more than doubled, from 71,174 to 174,629. Among the twenty leading destinations, eleven gained double-digit increases in the 2002/03 academic year, and about 64% of the U.S. study abroad students went to places where English is not the primary language of the host country. Their top ten leading destinations are the United Kingdom, Italy, Spain, France, Australia, Mexico, Germany, Ireland, Costa Rica, and Japan, followed by Austria, China, and Greece. While the United Kingdom continues to be the favorite place and West Europe the most popular region for American students studying abroad, eleven of their twenty leading destinations are outside West Europe (Table 4).

	Table 3: Major Fields of Specialization of International Scholars in the United States				
Rank	Field of Specialization	Percentage of International Scholars			
		2000/01	2001/02	2002/03	2003/04
1	Life & Biological Sciences	14.7	14.6	17.5	23.2
2	Health Sciences	26.9	27.4	25.0	20.8
3	Physical Sciences	14.7	14.0	14.3	13.2
4	Engineering	12.6	11.4	11.8	10.7
5	Business Management	2.5	3.1	2.9	3.8
6	Computer & Information Sciences	2.7	3.3	3.2	3.7
7	Social Sciences & History	3.6	4.5	4.1	3.3
8	Agriculture	3.9	3.4	3.9	3.1
9	Mathematics	2.5	2.6	2.7	2.4
10	Other	2.8	2.4	1.9	2.2
11	Foreign Languages & Literature	1.9	2.0	2.5	1.9
12	Education	1.5	1.5	1.6	1.6
13	Area & Ethnic Studies	1.8	1.4	1.4	1.5
14	Letters	1.3	1.4	1.1	1.4
15	Public Affairs	0.6	0.6	0.5	1.2
16	Psychology	1.0	1.0	1.0	1.2
17	Visual & Performing Arts	1.2	1.3	1.1	1.1
18	Law & Legal Studies	1.2	1.0	1.0	0.9
19	Philosophy & Religion	0.6	0.9	0.6	0.8
20	Communications	0.5	0.6	0.6	0.7
21	Architecture & Environmental Design	0.7	0.8	0.7	0.7
22	Home Economics	0.4	0.5	0.5	0.4
23	Library Sciences	0.3	0.3	0.3	0.3
24	Marketing	0.1	0.1	0.1	0.1
	TOTAL	79,651	86,015	84,281	82,905
Source: Adapted from Open Doors Report, IIE, 2004					

There are also notable increases in the number of American students going to countries in East Europe, averaged surging by 9% in the 2003/04 academic year, including Russia, the Czech Republic, and Hungary. Australia, Japan, China and New Zealand remain the most popular destinations in the Asia-Pacific area. Tables 4 and 5 present more detailed information about the

U.S. study abroad students in these leading host countries and regions around the world. As illustrated in Table 4, except China, where the SARS epidemic shut down the spring and summer programs in 2003, all leading destinations gained significant increases in the number of American students studying abroad during the 2002/03 academic year.

	Table 4: Leading Destinations of the U.S. Study Abroad Students				
Rank	Locality	2001/02	2002/03	% Change	% of All Study Abroad
	TOTAL	160,920	174,629	8.5	
1	United Kingdom	30,143	31,706	5.2	18.2
2	Italy	17,169	18,936	10.3	10.8
3	Spain	17,176	18,865	9.8	10.8
4	France	12,274	13,080	6.6	7.5
5	Australia	9,456	10,691	13.1	6.1
6	Mexico	8,078	8,775	8.6	5.0
7	Germany	4,856	5,587	15.1	3.2
8	Ireland	4,375	4,892	11.8	2.8
9	Costa Rica	3,781	4,296	13.6	2.5
10	Japan	3,168	3,457	9.1	2.0
11	Austria	2,180	2,798	28.3	1.6
12	China	3,911	2,493	-36.3	1.4
13	Greece	1,856	2,011	8.4	1.2
14	Czech Republic	1,659	1,997	20.4	1.1
15	Chile	1,492	1,944	30.3	1.1
16	New Zealand	1,326	1,917	44.6	1.1
17	Netherlands	1,676	1,792	6.9	1.0
18	South Africa	1,456	1,594	9.5	0.9
19	Ecuador	1,425	1,567	10.0	0.9
20	Russia	1,269	1,521	19.9	0.9
Source: Adapted from Open Doors Report, IIE, 2004					

In comparison with international students pursuing higher education in the Unite States, American students studying abroad show several major differences. First of all, international students tend to study natural sciences and engineering in the United States, while American students going overseas are apt to study social sciences and languages. Table 6 presents fields of

American students studying abroad. Among the top five fields of study pursued by American students overseas are social sciences, business and management, humanities, fine or applied arts, and foreign languages, followed by physical sciences and others (IIE, 2004f). Second, American students tend to study abroad for a shorter period, with 48% electing a summer or January term and programs of 8 weeks or less, and another 40% studying for one semester only. Table 7 presents the duration of American students studying abroad in recent years. Third, the U.S. study abroad students are predominantly female, accounting for nearly 65% (Table 6).

Table 5: Host Regions of the U.S. Study Abroad Students				
Rank	Host Region	Percentage of U.S. Study Abroad Students		
		2000/01	2001/02	2002/03
1	Europe	63.1	62.6	62.9
2	Latin America	14.5	14.5	15.3
3	Oceania	6.0	6.8	7.3
4	Asia	6.0	6.8	5.6
5	Africa	2.9	2.9	2.8
6	North America	0.7	0.8	0.7
7	Middle East	1.1	0.8	0.4
	Multiple Regions	5.6	4.9	5.1
	Students Reported	154,168	160,920	174,629
Source: Adapted from Open Doors Report, IIE, 2004				

These data indicate that American students continue to reach out to the rest of the world, to learn about other cultures, and to get more engaged in international programs. To link international learning experiences with students' future career opportunities, an international consortium of country level exchange organizations conducted a cooperative research (i.e., Australian Education Office, British Council, German Academic Exchange Service, U.S. Department of Education & U.S. State Department, 2003). Results indicate that the primary reason for American students choosing to study abroad is to experience another culture or to see another part of the world. To American employers, the most important selection criteria are interpersonal skills, and these skills are considered likely to be strong in job candidates with an overseas educational experience. Through 100 interviews with HR directors and CEOs, about 80-98% of the surveyed American employers agree that job candidates with a study abroad experience are likely to possess a variety of important skills such as communication skills, , flexibility, autonomy, leadership skills, innovation, presentation skills, maturity, ambition, independence, cultural awareness, and cross-cultural

communication. These findings clearly demonstrate the value of international learning experiences for American students and the importance of such experiences to their prospective employers.

Table 6: Fields of Study of the U.S. Study Abroad Students						
		2001/02	2001/02	2002/03	2002/03	2002/03
Rank	Field of Study	N	%	N	%	% Change
1	Social Sciences	35,241	21.9	37,122	21.3	5.3
2	Business & Management	28,322	17.6	30,874	17.7	9.0
3	Humanities	22,207	13.8	23,155	13.3	4.3
4	Fine or Applied Arts	13,678	8.5	15,651	9.0	14.4
5	Foreign Languages	13,678	8.5	13,770	7.9	0.7
6	Physical Sciences	12,230	7.6	12,459	7.1	1.9
7	Other	8,368	5.2	11,163	6.4	33.4
8	Education	6,276	3.9	7,243	4.1	15.4
9	Undeclared	6,115	3.8	6,048	3.5	-1.1
10	Health Sciences	4,828	3.0	5,392	3.1	11.7
11	Engineering	4,667	2.9	5,050	2.9	8.2
12	Math & Computer Science	3,540	2.2	4,137	2.4	16.9
13	Agriculture	1,770	1.1	2,563	1.5	44.8
14	Total	160,920	100.0	174,629	100.0	8.5
Gender	Female	64.9		64.7		-.2
	Male	35.1		35.3		.2
Source: Adapted from Open Doors Report, IIE, 2004						

TRENDS AND PROSPECTS

The world of higher education continues to globalize and is getting more competitive. While the United States remains the most popular destination for international students to pursue college and advanced degrees, recent data have signaled signs of challenges, which should be a matter of national concern. Several important issues call serious attention.
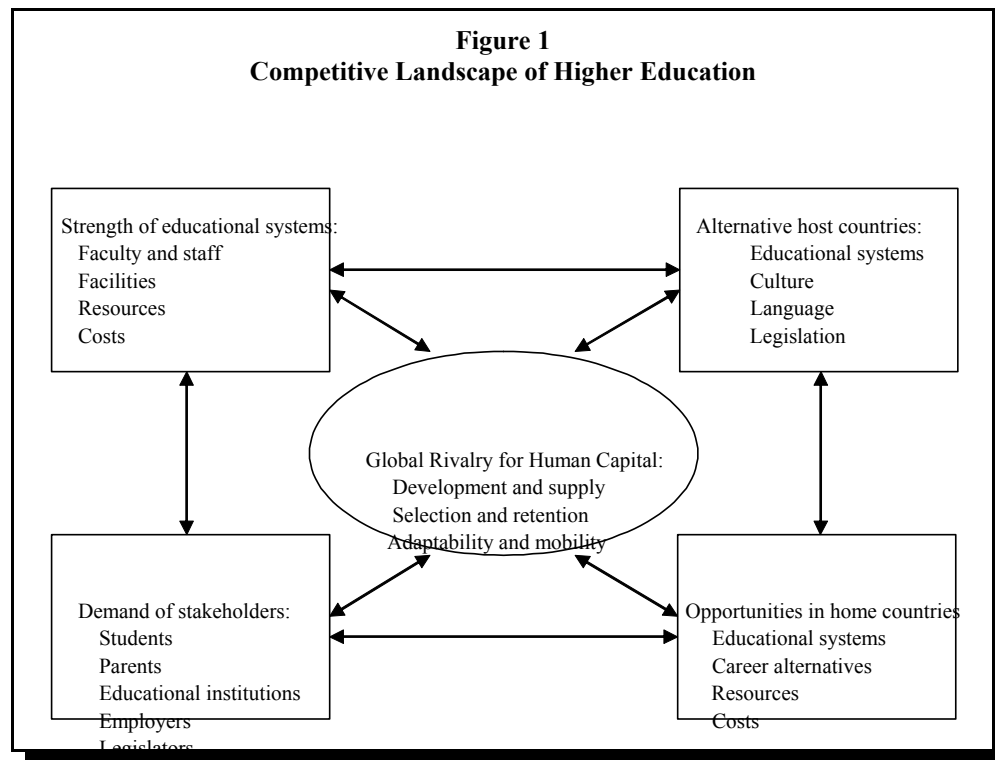
Table 7: Duration of the U.S. Study Abroad Programs			
Duration	Percentage of U.S. Study Abroad Students		
	2000/01	2001/02	2002/03
One Semester	38.5	39.0	40.3
Summer Term	33.7	34.4	32.7
Fewer Than 8 Weeks	7.4	7.3	9.4
Academic Year	7.3	7.8	6.7
January Term	7.0	6.0	5.6
One Quarter	4.1	3.9	3.8
Other	0.9	0.6	0.6
Calendar Year	0.6	0.5	0.5
Two Quarters	0.6	0.5	0.4
TOTAL	154,168	160,920	174,629
Source: Adapted from Open Doors Report, IIE, 2004			

First, international student enrollments dropped by 5% at the undergraduate level, which was offset by an increase of 2.5% at the graduate level (IIE, 2004g). Overall, international student enrollments dropped by 2.4% in the 2003/04 academic year, which was the first absolute decline in the number of international students since 1971. There was a sharp decline in undergraduate enrollments from each of the top 5 leading countries of international students' origin, including India (-9%), China (-20%), Japan (-14%), South Korea (-1%), and Canada (-3%). There were also substantial declines in the number of students from Europe (-5%) and the Middle East (-9%). Those declines coincide with other data showing that countries such as the United Kingdom, Germany, Australia and New Zealand are boosting their number of international students (Philadelphia Inquirer Editorial, 2004). Since undergraduate international students add to a future pool of graduate students, American universities and government policy makers should weigh the impact of the international enrollment drop in a longer-term scenario.

Second, a variety of factors may have caused the recent decline of international student enrollments in the United States, including increased global competition from alternative host countries, more educational and career opportunities in students' home countries, rising tuition costs in the United States, and more complex and tighter screening of visa applications since the 9/11.

Third, balancing national security against the political and economic benefits of international educational exchange programs has been always a pivotal concern of the United States. It is more of a challenging task in the post 9/11 world. The recent enrollment decline of international students suggests more efforts to achieve the critical balance.

Within the context of the global rivalry for human capital and integrating emerging factors influencing the global flow of human resources, a multivariate contextual model can be developed to describe the competitive landscape of higher education in the 21ˢᵗ century, particularly pertinent for international educational exchange programs (Figure 1).

Figure 1
Competitive Landscape of Higher Education

Strength of educational systems:
  Faculty and staff
  Facilities
  Resources
  Costs

Alternative host countries:
  Educational systems
  Culture
  Language
  Legislation

Global Rivalry for Human Capital:
  Development and supply
  Selection and retention
  Adaptability and mobility

Demand of stakeholders:
  Students
  Parents
  Educational institutions
  Employers
  Legislators

Opportunities in home countries
  Educational systems
  Career alternatives
  Resources
  Costs

The global rivalry for human capital includes tactics and resources for human capital development, attraction and sustention, selection and retention of the qualified, productive, flexible and innovative workforce, and adaptability and mobility of human resources across borders. Human capital development can be achieved through multiple ways, including formal education, workplace sponsored employee training and development programs, institutional collaboration, international assignments, field experience, and global rotation. Individual citizens, governments, educational institutions, industries and other interest parties are vested constituencies in this process. The strength of higher educational systems can be determined by several key factors, such as quality and availability of the faculty and staff, facilities for effective teaching, learning and research, physical and financial resources, and costs. These factors serve to meet the demand of various stakeholders of higher educational systems, such as students, parents, prospective employers, and legislators. High demands and satisfied needs of the stakeholders further promote and enhance higher education.

At the same time, contextual variables about alternative host countries, such as culture, language, location, competitive educational systems, and legislations governing the border entry and student lives, may present challenges from potential substitutes. Growing opportunities and funding for education and career futures in students home countries may increase freedom of choice, flexibility, and bargaining power of individual stakeholders of educational systems, and thus influence human capital development and supply in countries concerned. As shown in Figure 1, these multivariate factors jointly outline the competitive landscape of higher education in today world and influence the global flow of human resources in the long run.

CONCLUSION AND DISCUSSION

The present study explored the historical trends, recent shifts, and prospects of higher education in the increasingly intertwined world, with special attention to the U.S. international educational exchange programs. The study made several important contributions to the field of higher education.

First, from data analysis, the study distinguished several key aspects of acquiring international educational experiences pertaining to various stakeholders, such as individual students, parents, educational institutions, prospective employers, and state legislators.

Second, the study took a comparative approach to contrast differences between international students coming to the U.S. and American students going overseas. Either way, the study demonstrated that international educational programs play an important role in generating revenues to the host country, in adding resources and brainpower to universities and the corporate society, in facilitating cross-cultural communication and greater understanding, and in internationalizing campus lives. All these are crucial to human capital development and the workforce mobility pertaining to national wealth and economic strength in the long run.

Third, the study presented a multivariate contextual model to explain the competitive landscape of higher education in the global market. The model provides a primary framework for theory building and policy making. Various variables and their interrelationships have been addressed.

Finally, the study drew attention to emerging challenges in the increasingly competitive global market for human capital development and supply. In addition to the factors identified in the multivariate contextual model of higher education, the study calls for further exploration of effective tactics to balance the national security measures against the political, economic, and cultural benefits of enhancing international educational exchange programs. Practical implications include developing policies and assistance programs that are responsive to the demand and needs of various stakeholders both within and across borders. Such demands may include quality education, knowledge and skill transferability, information accessibility (e.g., regarding scholarships, cost of

living, economic and political conditions of the host country, cultural variations, etc.), integration or transfer of international credit toward degree requirements, and visa related issues.

For researchers as well as for policy makers, it is imperative to identify and evaluate key factors in the competitive landscape of today world of higher education in order to develop effective tactics and resources for human capital development, attraction, sustention, and global mobility. At the same time, shifts and emerging challenges, as reviewed and analyzed in this study, present both opportunities and potential uncertainty to various constituencies of higher education. It is essential for educational constituencies to learn about emerging shifts and prospects in order to adapt and respond effectively. A good understanding of key factors in the competitive landscape of higher education is most profound for individual stakeholders as they weigh educational alternatives and career advantages associated with international educational exchange programs.

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INSTRUCTOR AND STUDENT PERCEPTIONS OF THE ONLINE TEACHING/LEARNING ENVIRONMENT: A CROSS-CULTURAL STUDY

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ABSTRACT

This study compared instructors' and students' perceptions of online teaching/learning in the United States and South Korea and examined the impact of selected demographic variables on the participants' responses. Results showed that there was an agreement among the four sample groups for all statements regarding strengths and weaknesses of the online teaching/learning environment. However, pairwise comparisons revealed significant differences in means among instructor and student groups with respect to the degree of agreement or disagreement with each statement. American instructors and students showed stronger agreement or disagreement with the statements than their Korean counterparts. Similarly, the instructor groups showed stronger agreements or disagreements than the student groups. The demographic variables that were examined in the study had a little impact on participants' responses. While the preferred learning mode (face-to-face, online, and hybrid) had the strongest impact on American students' perceptions, previous experience with online environment and students' classification had the strongest impact on Korean students' perceptions. Teaching mode had the strongest impact on American instructors' perceptions, teaching mode and self-reported knowledge about computers had the strongest impact on Korean instructors' perceptions. Instructors' and students' major concerns about online teaching/learning were reported, and suggestions for administrators were also provided.

INTRODUCTION

The online teaching/learning environment has become an attractive option for delivering instruction. Projections for the year 2007 indicate that nearly 50 percent of all higher education learners will take some classes via the Internet (Tesone et al., 2003). Distance learning can potentially benefit both traditional and non-traditional students; particularly, non-traditional students. By taking online classes, they could increase their knowledge and skills without giving up

jobs, leaving home, or losing income (Tesone and Ricci, 2003). Karelis (1999) noted that online courses hold great opportunity for postsecondary education with lower average per-student costs, while delivering pedagogically sound and even individually-tailored instruction. One of the major benefits of online courses is the opportunity to reach students by removing time and space barriers. It is not uncommon for a student in one country to take an online course taught by an instructor in another country. With the increased number of student and faculty exchange programs among universities around the globe, it is important to understand perceptions of students and instructors toward online course from other parts of the world. In addition, very little is known about cultural effect on student and instructor perceptions of online education.

This situation calls for a better understanding of the beliefs and perceptions of both instructors and students toward online courses. Understanding student and instructor perceptions may help educational institutions devise mechanisms to efficiently utilize this emerging environment for delivering instruction. Even though there have been some attempts to determine attitudes and concerns toward online courses (Wilson, 2001, Gerlich and Wilson, 2004), we still do not know whether these attitudes are universal and held across different cultures. With the increased number of student and faculty interchange programs among universities around the globe, it is important to have a better understanding of the role of culture in adopting the online environment. In order to make distance learning truly "distant," it is important to know perceptions of instructors from other parts of the world. In addition, very little is known about the variables that may influence instructors' perceptions about online education.

It is necessary to determine whether instructors and students' perceptions about online classes are the same across different cultures. This point is critical if colleges and universities desire to expand their horizons toward a truly 'distance' education. Reaching students not only from close proximities but also from far away locations is a challenge that educational institutions will face in the short run. Therefore, comprehending the factors that motivate students from different countries and cultures to take online classes is an important step toward fully using this online environment. The purpose of this study was to explore and compare perceptions of online teaching/learning environment among college instructors and students from the United States and South Korea. These two countries were selected because they share some similarities in terms of technology innovations (Internet Usage World Stats, 2004; Kim, 2004), and, at the same time, they differ in terms of culture characteristics (Hofstede, 1997). Additionally, the study examined selected variables such as gender, discipline/academic major, rank/student classification, teaching/learning style, prior experience of online teaching/learning, teaching/learning mode, self-reported knowledge about the online teaching/learning environment, and self-reported knowledge about computers that might influence instructors' and students' responses. More specifically, the following research questions were formulated:

RQ1a:	Are there significant differences in perceptions of online teaching between American and Korean instructors?
RQ1b:	Are there significant differences in perceptions of online learning between American and Korean students?
RQ2a:	Are there significant differences in perceptions of online teaching/learning between American instructors and students?
RQ2b:	Are there significant differences in perceptions of online teaching/learning between Korean instructors and students?
RQ3a:	Are there impacts of selected demographic variables on instructors' responses?
RQ3b:	Are there impacts of selected demographic variables on students' responses?

BACKGROUND PERSPECTIVES

As popularity of online courses increases, so does the research that focuses on these courses. Some relevant research topics include methodological issues (e.g., Adams and Seagren, 2004; Kinney and Robertson, 2003; Downes, 1999; Compora, 2003), comparison between online and 'face-to-face' instruction (e.g., Ury, 2004; Cooper, 2001), usage (e.g., Garrett et. al., 2000; Lundgren and Garret, 2002-2003), and students' attitudes and motivations to take online classes (e.g. Lundgren and Nantz, 2003; Brooks, 2003). A relatively small number of studies have attempted to understand instructors' perceptions of online courses (Crumpacker, 2001; Willis, 2001).

Instructors and students in the online environment encounter a number of issues. Some of the most-frequently cited issues for instructors include understanding the characteristics and needs of online students, adapting teaching styles to consider the needs of the students, administrative overhead in collecting and returning work, increased workloads, inconvenience of communication without the benefit of face-to-face interaction, and lack of support mechanisms to help online students overcome challenges with technology (Kleinman and Entin, 2002; Willis, 2001). Similarly, students must cope with difficulty in adjusting leaning styles, inconvenience of communication without the benefit of face-to-face interaction, and lack of support mechanisms (Gallini & Barron, 2001-2002; Haseman & Nuipolatoglu, 2002; Bolliger & Martindale, 2004; Chizmar & David, 2001; Perterson & Bond, 2004). These issues seem to be common in South Korea. Despite the popularity of online courses and high Internet adoption rate (Chung and Lim, 2002), the number of online courses available in Korea is still lower than expected. The adoption of online courses by instructors is mostly voluntary with very little support and training opportunities (Chung and Lim, 2002).

Individual differences have been known to influence perceptions and behaviors in various contexts (Brown, 1998; Childress, 2001; Munro & Rice-Munro, 2004). Although the effect of individual differences on perceptions toward online courses may be examined in some studies

(Wilson, 2001; Gerlich and Wilson, 2004), more investigation is still needed, especially in a cross-cultural context. The following paragraphs discuss some of individual differences (variables) that could influence instructor and student perceptions.

Although researchers demonstrated mixed results, gender seems to be a factor that influences perceptions toward online courses. For example, while female students showed more favorable attitudes toward online courses than male students (Lundgren and Nantz, 2003), male instructors, compared to female instructors, were more likely to teach online courses (Gerlich and Wilson, 2004). The lack of studies on gender differences necessitates inclusion of this variable in the current study.

Discipline/academic major appears to have effects on the adoption of online courses. Various disciplines may require different pedagogical methodology, which may affect the adoption of online courses (Chen, et al., 2003). For example, business and social sciences disciplines in Korea showed higher rates of adoption of online classes (Chung and Lim, 2002). Thus, effect of discipline/academic major on the participants' perceptions was investigated in this study. The discipline/academic major was classified into three groups: business, hard sciences, and social sciences.

Those who adopted online course may be motivated by different factors such as efficiency and/or effectiveness of online courses, monetary reward, or promotion (Roger, 1995). The strength of these factors may be different depending on the academic rank (Wilson, 2001). Instructor rank is a variable that has not been thoroughly studied. An exception is a study by Garret et al. (2000) which reported that academic rank did not influence the intention to adopt a web site for the class. However, they also found that computer knowledge was a significant factor that affected the adoption of web site by instructors. A number of studies have focused on the relationship between computer experience and attitude toward computers. The results, however, have been mixed (Woodrow, 1994; Levine and Donitsa-Schmidt, 1998). We also believe that a person may know how to use a computer for specific software applications but may not have knowledge about using the Internet and related technologies. For students, the attitude toward the technology can be improved by improving computer experience and computer knowledge. (Rovai & Childress, 2002-2003). Therefore, the impacts of academic rank/student classification and self-reported knowledge about computers and self-reported knowledge about the online environment were examined.

Teaching/learning style may affect the way in which instructors design their web-based courses and the way in which students respond to the instructions on the online courses. Online technology changes to more student-directed pedagogical approaches, where students are allowed to suggest alternatives to meet course objectives (Williams, 2001). Online courses must be learner-centered, and students must be active participants in order to take advantage of the benefits of online courses (Munro & Rice-Munro, 2004). According to Miller (2000), learning styles can be classified into four styles: visual/verbal (You learn best when information is presented visually and in a written language format.), visual/nonverbal (You learn best when information is presented visually and in

a picture or design format.), tactil/kinesthetic (You learn best when physically engaged in a "hands on" activity.), and auditory/verval (You learn best when information is presented auditory in an oral language format.). On the other hand, Grasha (1996) defined four clusters that group different teaching styles. Formal authority is defined as a cluster in which the instructor presents information and students receive knowledge. Demonstrator refers to a teaching style in which instructors encourage students to observe processes as well as content. It emphasizes modeling and demonstration. In the facilitator cluster, instructors design activities, social interactions, or problem solving situations that allow students to practice the process of applying course content. Finally, the delegator cluster places much of the learning burden on the students. In this cluster, instructors provide complex tasks that require student initiative. Based on these teaching/learning clusters, we studied whether self-reported measure of teaching/learning style makes a difference in instructors and students' perceptions of online teaching/learning environment. The definitions of teaching/learning styles were provided in the survey for instructors and students.

Many instructors are still reluctant to use the Internet for delivering course materials and are even resistive to efforts to increase the use of online courses (Lundgren and Garret, 2002-2003). Even with the training related to the use and integration of information technology into courses, very few instructors intended to implement the technology soon (Garrett et al., 2000). This may be because they still have to cope with various issues. To investigate this issue, the impact of prior experience of online environment was examined. Prior experience with online environment influence students' perceptions and adoptions of online courses (Grandon etal., 2005). Once students take online courses, they tend to understand strengths and weakness of online environment more clearly. Thus, the prior experience with online teaching/learning (taught/completed online classes) was investigated.

A complementary relationship between online and face-to-face courses has been suggested by some researchers. Many institutions are expanding their online programs, while keeping face-to-face counterpart, rather than replacing one with the other (Holden and Mitchell, 1993; Christensen, 2002). Although students perceived that they learned more through face-to-face instruction and were more satisfied with this method than with online courses (National Center for Educational Statistics, 2003), empirical studies do not show significant differences between online and face-to-face course performance (Thirunarayanan and Perez-Parado, 2001-2002; Peterson and Bond, 2004). In this study, the effects of instructors' and students' preferred method of teaching/learning (face-to-face, online, and hybrid) were examined.

As mentioned previously, the two main reasons for selecting USA and South Korea were the similarity of their leadership role in technology innovation and usage and the differences in their culture characteristics. A study by Internet World Stats (2004) shows that 67 percent of the American population were Internet users by February 2004 with an Internet use growth of 103 percent from 2000 to 2004. These high rates of Internet adoption are also shown in South Korea.

By 2004, Internet users in Korea account for 65.5 percent of the total population (Kim, 2004). These numbers represent the highest Internet usage rates in the world.

With respect to their cultural differences, Hofstede's (1997, 2001) research on cultural dimensions provides a theoretical underpinning that could help in explaining differences in instructors and students' perceptions of online teaching/learning in the two countries. In his study, Hofstede surveyed 50 different countries, including the USA and South Korea. He identified four dimensions that can be used to distinguish among different cultures: power distance, individualism, masculinity, and uncertainty avoidance.

Power distance (PDI), defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede, 1997, p. 28) is larger for Korea than for the USA (60 vs. 40). In a teaching/learning environment, larger values of power distance mean considerable dependence of students on teachers; students are unlikely to approach and contradict their teachers directly. On other hand, in a culture with low value of power distance, instructors and students challenge new ideas (e.g., utilizing the online environment). Individualism (IDV), defined as "the interest of the individual prevails over the interest of the group" (Hofstede, 1997, p. 50) is significantly higher for the USA than Korea (91 vs. 18). Larger values of IDV mean more individualistic countries/societies. The USA culture is characterized by being individualistic, which may influence student perceptions toward online classes. An individualist culture does not put much attention on social relations and interactions, which may not be present in an online class setting. On the other hand, Korea is characterized by being a collectivistic culture. Koreans emphasize the co-dependency between individuals and groups where the groups extend beyond the immediate family. Taking online classes may be considered an individualistic venture for Korean students. In addition, as risk avoiders, Korean students may be more hesitant to take online classes.

Masculinity (MAS), defined as "pertains to societies in which social gender roles are clearly distinct" (Hofstede, 1997, p. 82) is higher for the USA than Korea (62 vs. 40). Larger values of MAS mean more distinct social roles between men and women with dominant societal values such as assertiveness, acquisition of money, and focus on material success. Finally, uncertainty avoidance (UAI), which is defined as "the extent to which the members of a culture feel threatened by uncertain or unknown situations," (Hofstede, 1997, p. 113) is stronger for Korea than for USA (94 vs. 46). Larger values of UAI mean more avoidance to uncertainty. In other words, the American instructors and students, compared to their Korean counterparts, would be greater risk takers, and thus, willing to explore new methods of teaching/learning. Figure 1 graphically shows the cultural differences between the two countries on the four dimensions.

Figure 1: Hofstede's Cultural Dimensions and Indexes by Country
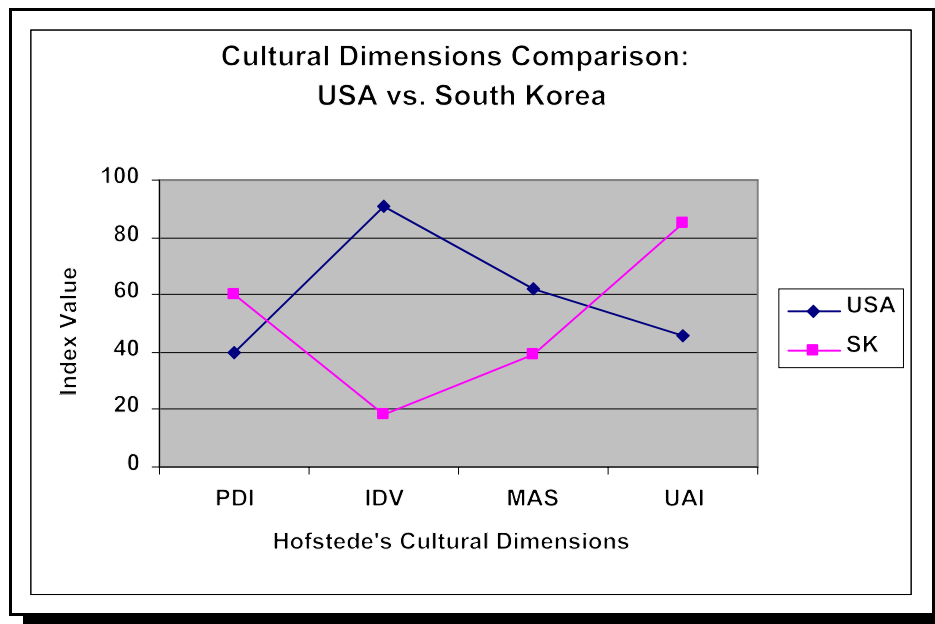
Even though USA and Korea share certain characteristics, such as leadership in technology innovation, we believed that differences in Hofstede's cultural dimensions between them influence, to certain extent, instructor and student perceptions of the online teaching/learning environment.

RESEARCH METHODS

Survey Questionnaire

The survey questionnaire consisted of three sections. The first section requested various types of demographic information, including gender, discipline/major, rank/student classification, tenure status, and teaching/learning style. The second section asked feedback from the participants regarding reasons related to teaching/taking online classes and their concerns about the online teaching/learning environment. The third section included seven statements that focused on measurement of instructor and student perceptions toward online teaching/learning. These statements were adapted and modified from previous studies by Lundgren and Nantz (2003), Gerlich and Wilson (2004), and Garret et al. (2000). The survey instrument was developed, reviewed for content as well as readability, and modified accordingly. Back translation procedure (Brislin, 1986) was used to ensure that the meaning of the questions was not lost during the translation process. As a result, minor changes were made to the Korean version of the instrument. Instructors responded

to those statements on a five-point Likert scale, which ranged from strongly disagree (1) to strongly agree (5).

Samples, Data Collection, and Statistical Techniques

More than 200 copies of the survey questionnaire were administered to convenience samples of college instructors in the United States and South Korea during Summer and Fall 2004. Approximately, 400 copies of the student survey questionnaire were distributed to convenience samples of college students in the United States and South Korea. For the American samples, the survey was distributed to instructors and students who represented various disciplines at a Midwestern university. In Korea, one of the authors distributed the survey to instructors and students from different disciplines at two universities. Ninety-two American instructors, 144 American students, 41 Korean instructors, and 226 Korean students completed the survey. SPSS statistical software was used to compute frequencies, means, and percentages. In addition, T-test and ANOVA analyses were used to test for significant differences among the samples.

DATA ANALYSIS

Tables 1 and 2 summarized profiles of the samples. Fifty six percent of the American instructors were males, compared to 83 percent of the Korean sample. Twenty percent and 24 percent of American instructors, compared to 56 percent and 20 percent of the Korean sample, were teaching in business and hard-science disciplines, respectively. Fifty-six percent of American instructors, compared to 24 percent of the Korean sample, were teaching in social sciences. Seventeen percent and 31 percent of the American instructors, compared to 22 percent and 36 percent of the Koreans, were instructors and assistant professors. Thirty-two percent and 18 percent of the American sample, compared to 14 percent and 26 percent of the Korean sample, were associate and full-professors. The majority of the American instructors indicated that they follow the "facilitator" style as a method of teaching; the Korean instructors indicated that they follow the "formal authority" as a method of teaching. While forty-nine percent of American instructors indicated that they preferred face-to-face as teaching mode, 61 percent of the Korean instructors reported that they preferred the hybrid mode. Forty-three percent of American instructors, compared to 15 percent of Korean instructors, reported that they had taught online classes. Approximately, one-half of the instructors in both countries who did not teach online classes had a web site for their classes. For those instructors who did not have a web site, the reasons for not having a web site vary among the two samples. While American instructors indicated that the lack of time and knowledge as the main reasons, Korean instructors reported the lack of support and incentives were the main reasons for not having a web site.

Table 1: Frequency Distributions of Key Variables by Country for Instructors Samples				
Variable	USA (n1=92)		Korea (n2=41)	
	No. of Responses	(%)	No. of Responses	(%)
Gender:				
Male	51	55.6	34	82.9
Female	41	44.4	7	17.1
Discipline:				
Business	18	19.6	23	56.1
Hard sciences	22	23.9	8	19.5
Social Sciences	52	56.5	10	24.4
Rank:				
Instructor	16	17.4	9	22
Assistant	29	31.5	15	36.6
Associate	30	32.6	6	14.6
Professor	17	18.5	11	26.8
Teaching style:				
Formal Authority	13	14.1	15	36.6
Demonstrator	9	9.8	10	24.4
Facilitator	62	67.4	12	29.3
Delegator	8	8.7	4	9.7
Taught online courses:				
Yes	40	43.47	6	14.6
No	52	56.53	35	85.4
Preferred teaching mode:				
Face-to-Face	45	48.9	14	34.1
Online	7	7.6	2	4.9
Hybrid	40	43.5	25	61.0
Computer knowledge:				
Good to Excellent	81	88.0	24	58.54
Poor to Fair	11	12.0	17	41.46
Have a website for class[a]:				
Yes	27	51.92	17	48.57
No	25	48.08	18	51.43
Reasons not having website[b]:				
Time	8	32.00	1	5.55
Lack of Support	1	4.00	6	33.33
Lack of Knowledge	8	32.00	3	16.67
Lack of Incentives	4	16.00	4	22.22
Other	4	16.00	4	22.22
Online environment knowledge:				
Good to Excellent	57	61.96	20	48.78
Poor to Fair	35	38.04	21	51.22

a. These percentage values were based on the total number of instructors who did not teach online courses (52 in the USA case and 35 in the Korean case).
b These percentage values were based on the total number of instructors who did not have a website (25 in the USA case and 18 in the Korean case).

Table 2: Frequency Distributions of Key Variables by Country for Students Samples				
Variable	USA (n1=144)		Korea (n2=226)	
	No. of Responses	(%)	No. of Responses	(%)
Gender: Male Female	89 55	61.8 38.2	50 176	22.1 77.9
Age	Avg. 21.18		Avg. 21.73	
Academic major: Business Hard sciences Social Sciences	126 3 15	87.3 2.2 10.5	18 55 153	8.0 24.3 67.7
Classification: Freshman Sophomore Junior Senior	45 34 45 20	31.3 23.6 31.3 13.9	71 72 64 19	31.4 31.9 28.3 8.4
Learning style: Visual/verbal Visual/nonverbal Tactil/kinesthetic Auditory/verbal	69 15 51 9	47.92 10.41 35.42 6.25	11 48 136 31	4.90 21.21 60.17 13.72
Access to Internet from: Home School Work Friend Computer Shops	107 144 38 66 6	74.3 100.0 26.4 45.8 4.2	178 226 7 13 52	78.8 100.0 3.1 5.7 23.0
Completed online course: Yes No	40 104	27.8 72.2	136 90	60.2 39.8
Number of online courses completed: 1 2 3 or more	28 10 2	70.0 25.0 5.0	24 8 104	17.6 5.9 76.5
Preferred learning method: Face-to-face Online Hybrid	103 5 36	71.5 3.5 25.0	75 27 124	33.2 11.9 54.9
Computer knowledge: Good to Excellent Poor to Fair	116 28	80.56 19.44	69 157	30.53 69.47
Average No. hours using computers/day	3.20		2.74	
Online environment knowledge: Good to Excellent Poor to Fair	127 17	88.2 11.8	84 142	37.2 62.8
Average of No. hours using Internet/day	2.37		2.69	

Sixty two percent of the American students were male, compared to 22 percent of the Korean sample. The majority (88 percent) of the American students was in business, whereas the majority (68 percent) of the Korean students was in social sciences. The American students consisted of 31 percent freshmen, 23 percent sophomore, 31 percent junior, and 14 percent senior, compared to 31 percent freshman, 32 percent sophomore, 28 percent junior, and 8 percent senior of Korean students. Approximately, three-quarters of students reported that they had access to the Internet from home. The majority of students indicated that the cost of the Internet was fair to expensive. While only 28 percent of American students completed online classes, 60 percent of Korean students completed online classes. The average number of hours per day using computers and the Internet was 3.2 and 2.37, respectively for American students and 2.74 and 2.69 for the Korean students. The majority of American students reported that they preferred the "face-to-face" learning method. On the other hand, Korean students preferred the hybrid method.

RESULTS OF THE STUDY

Results of the study are presented in three sections. The initial section provides the answers for the research questions (RQ1a-RQ2b). In order to answer these research questions, t-test was performed. The second section includes the answers for the research questions (RQ3a and RQ3b). These research questions were answered by using the ANOVA procedure that analyzed whether some variables such as gender, discipline/academic major, rank/student classification, and teaching/learning style influenced instructor and student responses. Other variables that were examined involved prior online teaching/learning experience, teaching/learning mode, self-reported knowledge about the online environment, and self-reported knowledge about computers. The third section reported feedback from the participants on reasons for or for not teaching/taking online classes and their main concerns about the online environment.

A Comparison of the Perceptions

There was agreement between American and Korean instructors on all statements included in the survey, as shown in Table 3a. However, the two groups significantly differed on their extent of agreement or disagreement with such statements. American and Korean instructors alike disagreed with the following statements—"The online class environment is more effective;" "Whatever I deliver in a face-to-face class, I would deliver it in an online class;" and "Online setting is the most appropriate method of teaching in today's environment." However, American instructors, compared to Korean instructors, had a stronger disagreement with such statements.

Table 3a: T-test Results for American and Korean Instructor Responses						
Statement	American Instructors (n1=92)		Korean Instructors (n2=41)		t-test	
	Mean	Std. Deviation	Mean	Std. Deviation	T	Sig. (2-tailed)
1. The online class environment is more effective	2.19	.982	2.68	.648	-3.376	0.001
2. An online class would require more of my effort than a face-to-face class	3.87	1.008	3.83	.758	0.259	0.796
3. Whatever I deliver in a face-to-face class, I would deliver it in an online class	2.19	1.150	2.56	.781	-2.151	0.034
4. I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class	4.37	.722	4.09	.684	2.152	0.034
5. Online setting is the most appropriate method of teaching in today's environment	1.95	.835	2.49	.754	-3.685	0.000
6. For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment	3.24	.964	3.35	.863	-0.643	0.522
7. It would be easy to cheat and plagiarize in an online course	3.58	1.012	3.94	.497	-2.742	0.007

Nevertheless, both American and Korean instructors were more likely to agree with the following statements – "I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class," and "It would be easy to cheat and plagiarize in an online course." While American instructors strongly believed in the former statement, Korean instructors had a stronger support for the latter statement. Finally, American and Korean instructors alike supported the following statements—"An online class would require more of my effort than a face-to-face class," and "For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment."

Except for one statement ("For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment."), there was agreement between student groups on all statements. While American students did support the statement, Korean students were neutral. However, the two groups significantly differed on their extent of agreement or disagreement with a few statements. American and Korean students alike disagreed with the following statements—"The online class environment is more effective;" "Whatever I learn in a face-to-face class, I would learn it in an online class;" and "Online setting is the most

appropriate method of learning in today's environment." However, American students, compared to Korean students, had a stronger disagreement with such statements. Nevertheless, both American and Korean students were more likely to agree with the following statements – "I am aware that I may lose some of the advantages of face-to-face classes if I take an online class," and "It would be easy to cheat and plagiarize in an online course." While American students strongly believed in the former statement, Korean students had a stronger support for the latter statement. Finally, American and Korean students alike supported the following statement—"An online class would require more of my effort than a face-to-face class."

Table 3b: T-test Results for American and Korean Student Responses						
Statement	American Students (n1=144)		Korean Students (n2-226)		t-test	
	Mean	Std. Deviation	Mean	Std. Deviation	T	Sig. (2-tailed)
1. The online class environment is more effective	2.20	0.905	2.75	.787	5.967	0.000
2. An online class would require more of my effort than a face-to-face class	3.15	1.124	3.19	.842	0.318	0.751
3. Whatever I learn in a face-to-face class, I would learn it in an online class	2.44	1.009	2.65	.893	1.951	0.050
4. I am aware that I may lose some of the advantages of face-to-face classes if I take an online class	3.94	0.914	3.44	.808	-5.355	0.000
5. Online setting is the most appropriate method of learning in today's environment	2.56	1.089	2.66	.754	1.026	0.306
6. For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment	3.30	1.018	2.96	.800	-3.379	0.001
7. It would be easy to cheat and plagiarize in an online course	3.08	1.119	3.56	2.770	2.227	0.023

As shown in Table 4a-b, same observations were found when comparing instructor and student responses for each country. However, in both countries, instructors, compared to students, showed stronger agreements or disagreements with the statements. For example, instructors in both countries, compared to students, had a stronger support to the following statements—"An online class would require more of my effort than a face-to-face class," and "I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class."

Table 4a: T-test Results for American Instructor and Student Responses						
Statement	Instructors (n1=92)		Students (n2=144)		t-test	
	Mean	Std. Deviation	Mean	Std. Deviation	T	Sig. (2-tailed)
1. The online class environment is more effective	2.19	.982	2.20	0.905	0.098	0.922
2. An online class would require more of my effort than a face-to-face class	3.87	1.008	3.15	1.124	-5.092	0.000
3. Whatever I deliver/learn in a face-to-face class, I would deliver/learn it in an online class	2.19	1.150	2.44	1.009	1.732	0.085
4. I am aware that I may lose some of the advantages of face-to-face classes if I teach/take an online class	4.37	.722	3.94	0.914	-3.969	0.000
5. Online setting is the most appropriate method of teaching/learning in today's environment	1.95	.835	2.56	1.089	4.843	0.000
6. For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment	3.24	.964	3.30	1.018	0.409	0.683
7. It would be easy to cheat and plagiarize in an online course	3.58	1.012	3.08	1.119	-3.534	0.001

Variables Affecting Instructor and Student Responses

This section provided answers for the research questions "Are there impacts of selected demographic variables on instructor responses?" and "Are there impacts of selected demographic variables on student responses?" A number of variables including gender, discipline/major, rank/student classification, and teaching/learning style were examined. Additional variables that were tested included prior experience of teaching/learning online, teaching/learning mode, self-reported knowledge about online environment, and self-reported knowledge about computers. ANOVA was used as the basis for determination of statistically significant differences. A summary of findings is presented in Tables 5a-b.

Perceptions of Korean instructors were affected only by instructors' preferred teaching modes (face-to-face, online, or hybrid) and self-declared knowledge about computers. On the other hand, perceptions of American instructors seemed to be influenced by all of variables, except discipline and rank. Perceptions of Korean students were affected by academic major, classification (freshman, sophomore, junior, or senior), and prior experience of online learning. Perceptions of

American students were influenced by gender, learning style, preferred learning mode, and knowledge of the online environment.

Table 4b: T-test Results for Korean Instructors and Students' Responses						
Statement	Instructors (n1=41)		Students (n2=226)		t-test	
	Mean	Std. Deviation	Mean	Std. Deviation	T	Sig. (2-tailed)
1. The online class environment is more effective	2.68	.648	2.75	.787	0.162	0.872
2. An online class would require more of my effort than a face-to-face class	3.83	.758	3.19	.842	-3.740	0.000
3. Whatever I deliver/learn in a face-to-face class, I would deliver/learn it in an online class	2.56	.781	2.65	.893	0.147	0.883
4. I am aware that I may lose some of the advantages of face-to-face classes if I teach/take an online class	4.09	.684	3.44	.808	-3.507	0.001
5. Online setting is the most appropriate method of teaching/learning in today's environment	2.49	.754	2.66	.754	0.770	0.444
6. For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment	3.35	.863	2.96	.800	-2.276	0.027
7. It would be easy to cheat and plagiarize in an online course	3.94	.497	3.56	2.770	-1.197	0.232

Gender did not have any significant effect on Korean instructor and student responses. Korean male and female of instructors and students had similar perceptions about online teaching/learning. Male American instructors and students, however, were more likely to support the statement—"I am aware that I may lose some of the advantages of face-to-face classes if I teach/take an online class" than their female counterparts. While male American students agreed with the statement—"It would be easy to cheat and plagiarize in an online course," female American students disagreed.

Discipline was a variable that did not influence instructor responses, but it did impact Korean students. Korean students with business majors agreed with the statement—"Whatever I learn in a face-to-face class, I would learn it in an online class." On the other hand, Korean students with social or hard sciences did not agree with the statement.

The rank of the instructors and classifications of students did not have any significant effect on instructors' or students' responses with the exception of Korean students. Korean senior and junior students were more likely than their freshmen and sophomore counterparts to disagree with the statement—"Online setting is the most appropriate method of learning in today's environment," and they were more likely to agree with the statement—"For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment."

Regardless of teaching style, instructors from Korea and the USA supported the statement—"I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class." However, there were significant differences in means for American instructors, depending on their teaching style. For instance, pairwise comparisons indicated that there were significant statistical differences between formal authoritative and facilitator styles (p=0.028) and between formal authoritative and delegator styles (p=0.05). In addition, American instructors disagreed with the statement—"Online setting is the most appropriate method of teaching in today's environment." Yet, there were significant differences in means between instructors with formal authoritative and delegator styles (p=0.044), between instructors with demonstration and facilitator styles (p=0.027), and between demonstration and delegator styles (p=0.008). With respect to student responses, learning style influenced only American student responses. Visual/verbal and auditory/verbal, compared to visual/nonverbal and tactil/kinesthetic, were more likely to disagree with the following statements—"The online class environment is more effective," and "An online class would require more of my effort than a face-to-face class."

Previous experience teaching online courses did not seem to influence perceptions of online classes among Korean instructors. In contrast, American instructors who taught online courses, compared to those who did not, were more likely to disagree with statement—"The online class environment is more effective" (p= 0.001) and the statement—"Online setting is the most appropriate method of teaching in today's environment" (p = 0.002). However, they were more likely to support the statement "I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class" (p=0.037). On the other hand, prior experience of taking online courses impacted Korean student perceptions, but not those of American students. Korean students who took online courses, compared to those who did not, were more likely to disagree with statement—"The online class environment is more effective." However, they were more likely to support the statement "I am aware that I may lose some of the advantages of face-to-face classes if I take an online class"

The preferred teaching/learning mode (face-to-face, online, and hybrid) significantly impacted American instructors, Korean instructors, and American student perceptions. Korean instructors who selected face-to-face as their preferred teaching mode, compared to those who preferred the hybrid mode, were more likely to disagree with the statement "The online class environment is more effective" (p = 0.026). Similarly, significant differences in means were found for American instructor perceptions. Pairwise comparisons showed significant differences among

American instructors who preferred the face-to-face mode of teaching and those who preferred the hybrid environment (p = 0.00) and between those who preferred online mode and those who preferred the hybrid mode (p=0.005). American instructors who preferred face-to-face environment were more likely to disagree with the statement—"The online class environment is more effective." In the same way, there were significant differences in means for perceptions of American instructors between those who preferred face-to-face environment and those who preferred the hybrid mode (p=0.031) with respect to the following statement—"Whatever I deliver in a face-to-face class; I would deliver it in an online class." Additionally, the pairwise comparison indicated that there were significant differences between means for instructor perceptions between those who preferred face-to-face and hybrid modes (p=0.00) for the following statement —"Online setting is the most appropriate method of teaching in today's environment." Instructors who preferred the face-to-face environment were more likely to disagree with the previous statement. American instructors who preferred online environments, compared to those who preferred the hybrid mode, were more likely to support the statement—"I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class" (p=0.042). All instructors, regardless of their preference of teaching mode, supported the statement—"It would be easy to cheat and plagiarize in an online course."

American students who preferred the face-to-face or hybrid environment, compared to those who preferred the online environment, were more likely to disagree with the statements—"The online class environment is more effective," "Whatever I learn in a face-to-face class, I would learn it in an online class," and "Online setting is the most appropriate method of learning in today's environment." However, they were more likely to support the statement—"For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment."

Self-reported measure of knowledge of the online environment was a variable that influenced only the American respondents. American instructors who indicated that their knowledge of the online environment was poor to fair were more likely to disagree with the statement—"The online class environment is more effective" (p=0.021). American students who indicated that their knowledge of the online environment was poor to fair were more likely to disagree with the statement—"Whatever I learn in a face-to-face class, I would learn it in an online class." On the other hand, students who reported that their knowledge of the online environment was good to excellent were more likely to agree with the statement—"It would be easy to cheat and plagiarize in an online course."

In both countries, self-reported measure of knowledge about computers influenced only instructor responses. American instructors who indicated that their knowledge about computers was poor to fair were more likely to disagree with the statement—"The online class environment is more effective" (p=0.002). Korean instructors who rated their knowledge as "good-to-excellent" were more likely to support the statement that "It would be easy to cheat and plagiarize in an online course." (p=0.05).

To summarize the impact of the demographic variables, one can observe that while teaching mode had the strongest impact on the American instructor perceptions, teaching mode and self-reported knowledge about computers had the strongest impacts on the Korean instructors. On the other hand, learning mode had the strongest impact on the American student perceptions, student classification and prior experience with the online learning environment had the strongest impacts on the Korean student perceptions.

Table 5a: A Summary of ANOVA Results for American and Korean Instructors [a]																
	1. Gender		2. Discipline		3. Rank		4. Teaching Style		5. Prior Experience of Online Teaching		6. Teaching Mode		7. Knowledge of Online Environment		8. Knowledge of Computers	
Statement	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea
1. The online class environment is more effective	NS	NS	NS	NS	NS	NS	NS	NS	0.001[b]	NS	0.000[b]	0.026[b]	0.021[b]	NS	0.002[b]	NS
2. An online class would require more of my effort than a face-to-face class	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3. Whatever I deliver in a face-to-face class, I would deliver it in an online class	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.030[b]	NS	NS	NS	NS	NS
4. I am aware that I may lose some of the advantages of face-to-face classes if I teach an online class	0.007[b]	NS	NS	NS	NS	NS	0.019[b]	NS	0.037[b]	NS	0036[b]	NS	NS	NS	NS	NS
5. Online setting is the most appropriate method of teaching in today's environment	NS	NS	NS	NS	NS	NS	0.002[b]	NS	0.002[b]	NS	0.00[b]	NS	NS	NS	NS	NS
6. For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7. It would be easy to cheat and plagiarize in an online course	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.05[b]
a. NS: Not Significant (0.05 significance level was used as a cutting point). b. P- value according to ANOVA procedure.																

Table 5b: A summary of ANOVA Results for American and Korean Students [a]																
	1. Gender		2. Academic Major		3. Classification		4. Learning Style		5. Prior Experience of Online Learning		6. Learning Mode		7. Knowledge of Online Environment		8. Knowledge of Computers	
Statement	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea	USA	Korea
1. The online class environment is more effective	NS	NS	NS	NS	NS	NS	0.018[b]	NS	NS	0.048[b]	0.005[b]	NS	NS	NS	NS	NS
2. An online class would require more of my effort than a face-to-face class	NS	NS	NS	NS	NS	NS	0.003[b]	NS	NS	NS	NS	NS	NS	NS	NS	NS
3. Whatever I learn in a face-to-face class, I would learn it in an online class	NS	NS	NS	0.046[b]	NS	NS	NS	NS	NS	NS	0.010[b]	NS	0.016[b]	NS	NS	NS
4. I am aware that I may lose some of the advantages of face-to-face classes if I take an online class	0.014[b]	NS	NS	NS	NS	NS	NS	NS	NS	0.023[b]	NS	0.072	NS	NS	NS	NS
5. Online setting is the most appropriate method of learning in today's environment	NS	NS	NS	NS	NS	0.033[b]	NS	NS	NS	NS	0.013[b]	NS	NS	NS	NS	NS
6. For students who are taking a class online, it would be more difficult than taking the class in a traditional face-to-face environment	NS	NS	NS	NS	NS	0.019[b]	NS	NS	NS	NS	0.045[b]	NS	NS	NS	NS	NS
7. It would be easy to cheat and plagiarize in an online course	0.007[b]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.002[b]	NS	NS	NS

a. NS: Not Significant (0.05 significance level was used as a cutting point).
b. P- value according to ANOVA procedure.

Instructor and Student Feedback on the Online Teaching/Learning Environment

As shown in Table 6, when participants were asked for the reasons of why they taught/took online classes, American instructors indicated career development and administration pressure as the major incentives. Also, instructors in both countries indicated that attracting more students to their programs and enjoying teaching online were among the reasons for teaching online classes. Students in both countries reported that the main reason for taking online classes was the flexibility with class schedules. Other reasons were mentioned were "better for work schedule" and "reducing commuting time."

Table 6: A Summary of Instructor-Student Feedback on the Online Teaching/Learning Environment	
Instructor Samples	
American	Korean
Reasons for Teaching Online Classes	
Career development	Career development
Administration pressure	Monetary Incentives
Monetary Incentives	Attracting more students
It is Mandatory	Enjoying teaching online
Attracting more students	
Enjoying teaching online	
Reasons for Not Teaching Online Classes	
Lack of time	Lack of support
Lack of knowledge	Lack of knowledge
Lack of compatibility with discipline	Lack of monetary incentives
Lack of demand for online classes	Lack of time
Lack of incentives	Lack of compatibility with discipline
Lack of support	Lack of demand for online classes
Major Concerns of Online Classes	
Lack of face-to-face interaction	Lack of face-to-face interaction
Assessment issues (integrity, reliability, cheating)	Assessment issues (integrity, reliability, cheating)
Difficulty of integrating field trips and lab experiments	Difficulty of integrating field trips and lab experiments
Technology issues	Technology issues
Student Samples	
American	Korean
Reasons for Taking Online Classes	
Flexibility with class schedule	Reducing commuting time
Better for work schedule	Flexibility with class schedule
Reasons for Not Taking Online Classes	
No need	No need
Major Concerns of Online Classes	
Lack of face-to-face interaction	Lack of face-to-face interaction
Technology issues	Technology issues
Lack of clear expectations	Challenge of self-discipline
	Quality of instruction

While American instructors indicated that the lack of time and knowledge about the online teaching environment were the major reasons for not teaching online classes, Korean instructors reported that lack of university support, lack of knowledge about the online environment, and lack of monetary incentives as the major reasons for not teaching online classes. Other reasons for not teaching online classes that were identified by the instructors in both countries included the lack of compatibility of some disciplines with online teaching environment and the lack of demand for such classes. Even though extra support such as training, technical staffs, and monetary incentives might help in developing positive perceptions toward online courses, some instructors still believed that online teaching environment did not fit well with the methodology of their disciplines. On the other hand, students in both countries indicated that "no need" was the primarily reason for not taking online classes.

American and Korean instructors alike indicated that the lack of face-to-face interaction and assessment issues were their main concerns about online teaching environment. Other concerns were the difficulty of integrating field trips and lab experiments into online classes and technology-related issues. Similarly, students in both countries reported that the lack of face-to-face interaction and technology issues were their main concerns. Other concerns included lack of clear expectations and the quality of instruction.

DISCUSSION AND CONCLUSIONS

This study examined perceptions of American and Korean instructors and students on a number of statements related to online teaching/learning environment. Even though both countries differ in terms of cultural characteristics (Hofstede, 1997), instructors and students in both countries had similar perceptions of online teaching/learning environment. However, the four groups significantly differed on their extent of agreement or disagreement with the statements. For example, American instructors had stronger significant agreements or disagreements with four statements (statements 1, 3, 4, and 5), compared to one statement where Korean instructors had a stronger significant agreement (statement 7). The same pattern was noticed when comparing American students with Korean student perceptions. American students had stronger significant agreement or disagreement with four statements (statements 1, 3, 4, and 6), compared to one statement where Korean students had a stronger significant agreement (statement 7).

While American culture may be more prone to risk taking and willingness to assume change, but at the same time they challenge new ideas, Korea, on the other hand, exhibited a culture that is less prone to risk taking and, in general terms, may avoid change. Therefore, one can expect American respondents to be in favor of the online teaching/learning environment, compared to Korean participants. However, the results showed that Korean instructors and students appeared to have more favorable perceptions of online teaching. This was shown by the extent of agreement or disagreement with positive and negative statements toward online classes. One can say that

American instructors and students were more aware of the strength and weakness of the online teaching/learning environment than Korean instructors and students. Therefore, their reactions to the statements, compared to those of Koreans, were primarily based on actual experiences than perceptions. Moreover, the cultural dimensions could have mixed effects on American respondents. For example, American instructors and students would more likely challenge the idea of using the online environment.

With respect to the impact of selected demographic variables on participant perceptions, results showed that there was little impact. While discipline and rank did not influence American instructor perceptions, gender, discipline, rank, teaching style, prior experience of online teaching, and self-reported knowledge about online teaching environment did not impact Korean instructors' perceptions. Even though academic major, student classification, prior experience of online learning, and self-reported knowledge about computers did not affect American students' perceptions, gender, learning style, learning mode, self-reported knowledge about online learning environment, self-reported knowledge about computers did not influence perceptions of Korean students. When a demographic variable influenced participant perceptions, it influenced few numbers of statements (one or two). Therefore, it is a valid argument that any differences in perceptions of online teaching/learning environment among the four samples would be due to their status as instructors versus students and due to the difference in the nationality (USA versus South Korean). Thus, it seemed that the national cultural diversity was the primary reason for the differences among the participants in the degree of agreement or disagreement with the statements considered in this study. However, other factors (e.g., individual differences) might have contributed to such disparity.

Instructors and students in both countries may admit the weaknesses for the online teaching/learning environment; yet, once they experienced such environment, they tended to increase their knowledge of the online environment and, in turn, understand the merits of online teaching/learning. For example, the findings of this study revealed that instructors and students who taught/took online courses were more likely to develop stronger perceptions about the online format. For example, those instructors and students who taught/took online courses had stronger disagreements with statements such as "The online class environment is more effective," and "Online setting is the most appropriate method of teaching in today's environment."

Educational institutions may want to critically assess the feedback from instructors and students that were reported in this study in order to efficiently utilize the emerging online teaching/learning environment. It is important to recognize individual differences among instructors and students and plan accordingly. In order to recognize differences in teaching/learning styles and disciplines, institutions must provide training on various features that promote interaction between students and instructors so that instructors can utilize their teaching styles, accommodate student learning styles, and overcome shortcomings of the online environment. Since the online teaching/learning environment was introduced as a component of the educational system and was not meant to replace the traditional face-to-face environment, policy makers in the educational

institutions may want to redefine the number physical hours that instructors and students meet and use the hybrid mode. Since there was a moderate culture effect on instructors and student perceptions, educational institutions should utilize the online environment to promote "virtual" exchange programs with proper training.

Limitations and Future Research

Although this study had several insights for policy makers in the higher education institutions, instructors, and students, it is not without limitations that need to be acknowledged. For example, the use of small sample sizes and the use of self-reported information were primary limitations. The findings of this study provide some opportunities for future research. Exploring other factors that may influence instructor and student perceptions of the online teaching/learning environment may assist in devising mechanisms to facilitate and promote the online environment. Also, this study could be repeated in the future to see whether the perceptions about online teaching/learning have changed.

<div align="center">REFERENCES</div>

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A CROSS-CULTURAL COMPARISON OF VALUES AND GENDER AMONG UNIVERSITY STUDENTS

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ABSTRACT

The values of Navajo and Anglo university students were compared using the List of Values (LOV) scale and the Marketing Lens Model. The results showed that significant cultural differences existed between Navajo and Anglos with respect to four of the eight LOV items. On a cross-gender basis, the results revealed significant differences between Anglo men and women with respect to six of the eight LOV items. In contrast, no significant differences were found between Navajo men and women. The findings offer strategies for university administrators and educators regarding educational offerings, promotion of the university, and the retention of students.

INTRODUCTION

A few years ago, a group of enterprising university officials dreamed of creating an academic program designed to meet the educational and career needs of Navajo Indian students. The dream became a reality – property was purchased, instructional personnel were hired, new buildings were erected, and equipment and supplies were acquired – and the new school was opened. Unfortunately, despite the preparations and planning of the school officials, one important element was missing: virtually no Navajo students were enrolled at the school.

After extensive research, the reason for the lack of Navajo students at the school became apparent – an element of the Navajo culture called a "skinwalker." In the traditional Navajo culture, a skinwalker is a small demon that burrows beneath a tribal member's skin and bedevils that person. Tribal members prior to occupying a new home – or school -- the tribal holy man must bless the building and drive out the skinwalkers. Violation of this traditional cultural belief results in the Navajo's belief that the demons will inhabit the dwelling and torment anyone who enters that building. In short, because an important cultural difference between the Navajo students and students from other cultural backgrounds had been overlooked, a multimillion dollar educational product was virtually unused by the targeted students.

The skinwalker is just one of many major differences that exist between the value systems of the American Indian and Anglo cultures. Specifically, the Anglo culture has traditionally been

more male-oriented, patriarchal than the egalitarian-oriented American Indian culture (Johnston, 1999; Lujan, 1995; Seggerman, 1986). For example, the Anglo culture has historically valued the role of males within the family, and land or other inheritance was passed from fathers to sons. In contrast, the Navajo American Indian culture passes property down through the mother to the daughter (Seggerman, 1986).

Such cultural differences are reflected in the changing makeup of the student population on university campuses across the United States. Statistics compiled by the U.S. Department of Education (2002) show that the percentage of minority college students (Black, Hispanic, Asian/Pacific Islander or American Indian) has increased from approximately 15% in 1976 to 28% in 2000. Government documents also reveal that university student enrollment in the United States is predicted to increase to some 16 million by the year 2015 and that minority students will make up some 80% of that increase. Further, the American Council of Education (2003) reported that during the twenty year period between 1981 and 2001, the number of American Indian college students increased by 80%.

Realizing that such cultural differences exist, educators need to be sensitive to cultural diversity and strive for a more thorough understanding of the unique values and beliefs held by increasingly diverse student populations. Only through a better understanding of students can educators and administrators provide a student-oriented, quality education and a better learning environment. One way in which university officials can gain such understanding is through the implementation of the marketing concept. This concept is based upon the fundamental belief that a customer orientation is key to the mutual satisfaction of institutional and student needs (e.g., Drucker 1954; Webster 1988; Perreault and McCarthy 2002). The marketing concept and a customer orientation have been successfully applied in higher education in recent years (e.g., Bristow 1998; Amyx and Bristow 1999; Bristow and Schneider 2002) and have been used as nomological net in the current study. An important element in those previous studies and the current work is that while students are viewed as customers of the university, the needs of students must be balanced with the need for the university to provide a quality, rigorous educational product.

The objectives of this study were two-fold. First, we explored cross-cultural differences in values between students from an American Indian culture, the Navajo, and students from the Anglo culture. Second, we examined value differences between men and women within each culture. Understanding the values of one's core customers may yield many benefits, such as identifying strategies for educators to administer educational offerings, promote the university, and retain students.

In general, understanding customers' values is important because they serve as guiding principles in everyday life (Kahle, 1983). Values are enduring, desirable end-states that when realized in a particular cultural context, provide a basis for specific attitudes and behaviors (Kahle, Rose, & Shoham, 1999). The List of Values (LOV) scale, developed by Kahle (1983), was used in the current study to measure cultural values. The LOV scale focuses on eight values: (1) security,

(2) sense of belonging, (3) being well respected, (4) self-respect, (5) warm relationships with others, (6) sense of accomplishment, (7) self-fulfillment, and (8) fun and enjoyment in life/excitement. Researchers have employed the LOV in numerous cultural contexts to explain the most important social values across the globe (e.g., Kahle, et al., 1999; Kahle, Beatty, & Mager 1994). Kahle (1996) provides a comprehensive review of the theoretical foundations and empirical use of LOV.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

While the U.S. has been referred to as "American's melting pot," suggesting that all cultures within this country become blended into one prevailing culture, perhaps a better description would be "America's Rainbow," or "ethnic mosaic." As suggested by Panko and Smith (1997) and Shim and Gehrt (1996), such labels better illustrate how cultural groups in the U.S., including the Navajo, seek to preserve their cultural traditions and values. Along with increased diversity comes diversity in consumer values and needs which often manifest themselves in consumer behavior. For example, Bristow and Amyx (1998) and Amyx and Bristow (1999) found evidence that students from various cultures expressed significantly different preferences with regard to the type of educational services they received. Specifically, Anglo and Asian students differed in the importance they placed on five educational elements (i.e., adjunct faculty, audio/visual, computer labs, library resources, and classrooms). Thus, as members of a culture seek to maintain their cultural values and identity, they are more likely to possess a uniquely different perspective of the world relative to other cultures' perceptions.

The concept that culture may influence our perception is nothing new. Brunswik (1952) recognized that such factors as values and experiences influence how one perceives the environment. Brunswik used the analogy that individuals view the world through a set of "cognitive lenses" that are individually crafted and shaped by one's unique background. Similar to Brunswik's lens, the Marketing Lens Model (MLM) posits that unique life experiences help to create and shape a set of lens through which the environment is perceived and interpreted (Bristow 1988). The MLM is an extension of Brunswik's earlier work and has been used as the theoretical foundation for predicting different perspectives between cultural groups in a variety of circumstances (Bristow, Mowen, and Krieger, 1994; Licatta, Mowen, & Chakraborty, 1995; Amyx & Bristow, 1999; Bristow and Asquith, 1999; Bristow and Amyx 1998). Thus, the MLM is useful for conceptualizing the existence of different perspectives between cultures based on the diversity of cultural values (LOV). Accordingly, individuals from separate cultures may emphasize different elements of their environment due to their divergent experiences, values, norms, and or traditions.

In our study, we employed the MLM to explain cross-cultural and gender value differences. As shown in Figure 1, the MLM consists of three distinct components. The left side of the model is comprised of quantifiable, measurable elements of the consumer's environment. In the current study, this left side of the model consisted of the eight LOV elements. The second part of the MLM

consists of the consumer's perceptual lens – that is, his/her view of the environmental elements as shaped by his/her experiences, expectations, cultural values and beliefs, and so on. One's cultural background has been shown to significantly impact his/her perceptual lens (e.g., Bristow and Asquith, 1999; Amyx and Bristow 1999; Bristow and Amyx 1998). Finally, the right side of the model facilitates the empirical comparison, via psychometric analyses, of one or more groups' perceptions of a shared environment.

Figure 1: The Marketing Lens Model
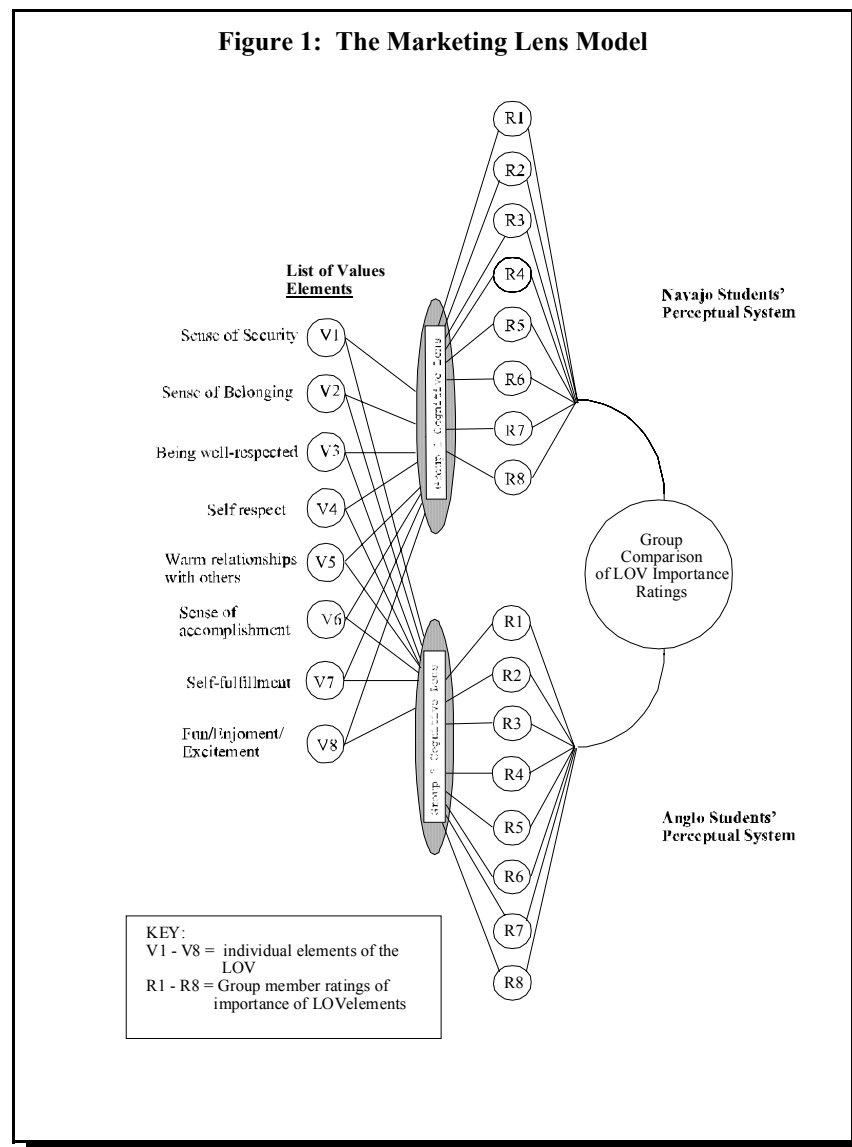
As noted above, in this study the eight LOV items served as the environmental elements to be compared across the Navajo and Anglo cultures. The authors first sought to examine whether significant differences existed between aggregate cultural values of Navajo and Anglo students. Because of the different perspectives or lenses possessed by the more egalitarian Navajo culture and the more patriarchal Anglo culture, the following hypothesis was developed:

> H1: Anglo and Navajo students differ in the importance placed on the LOV items.

In addition to cultural differences, individuals within a culture are also likely to possess differences in values (i.e., between men and women in the same culture). While John Gray (1992) voiced that men are from Mars and women are from Venus, the MLM suggests that men and women are likely to view the world from different lenses as a result of having different experiences, expectations, and perhaps values.

Researchers have examined the differences between men and women for many years (Brenner & Greenhaus, 1979; Calvert & Ramsey, 1992; Fagenson, 1990; Freedman & Phillips, 1988; Kanter, 1977; Riger & Galligan, 1980; Adler 2000; Catalyst Census of Women 2001). Women have been identified as more intuitive, more extroverted, more feeling, and more perceptive than men (Duchatelet, 1998; Miller, 1976; Myers, 1991). Women have also been described as more likely to use a participatory and collaborative style of leading (Richardson, 1999), more sensitive to verbal nuances, and more empathetic (Schrage, 1999). While overall gender differences among Anglos in the U.S. have been well documented, it remains unclear whether Navajo men and women have the same gender based differences as Anglo men and women.

Significantly, while women in the Anglo culture have struggled for equality for many years, American Indian cultures have long accepted that women are equal to their male counterparts (Johnston, 1999; Lujan, 1995; Seggerman, 1986). In light of evidence that the Anglo culture is patriarchal and the Navajo culture tends towards egalitarianism, it stands to reason that gender differences should be much more pronounced in the Anglo society. Thus, with respect to values, we expect greater differences to exist between Anglo men and women than between Navajo men and women.

> H2: Greater differences in values exist between Anglo men and women than between Navajo men and women.

METHOD AND DESCRIPTIVE STATISTICS

The eight items of the LOV scale (security, sense of belonging, being well respected, self-respect, warm relationships with others, sense of accomplishment, self-fulfillment, and fun and enjoyment in life/excitement) were used to measure values. The LOV items were measured using 9-point Likert scales with response categories ranging from "Very Unimportant" (1) to "Very Important" (9).

The survey instrument was administered to students during regularly scheduled class times. To avoid self selection bias within the sample, the data were collected on varying days of the week and at various times of the day over a period of three days. Additionally, the student sample was drawn from a variety of academic disciplines.

Table 1. Demographic Profile of Participants						
Ethnicity	Navajo 152*			Anglo 245*		
Gender	Male	Female	Total	Male	Female	Total
Age						
18-22	28	37	65	98	98	196
23-27	9	23	32	24	7	31
28-32	5	10	15	5	3	8
33-37	5	9	14	2	0	2
over 38	8	16	24	1	0	1
Total	55	96	151	133	112	245
Marital Status						
Single	38	62	100	119	98	217
Married	13	23	36	12	12	24
Divorced	4	9	13	2	2	4
Widowed	0	1	1	0	0	0
Total	55	95	150	133	112	245
Class Standing						
Freshman	26	39	65	4	5	9
Sophomore	21	41	62	1	5	6
Junior	4	8	12	82	80	162
Senior	2	6	8	43	21	64
Grad Student	3	1	4	1	0	1
Total	56	95	151	131	111	242
*Note: Due to non-response on some items, totals may differ.						

A total of 397 students (152 Navajo and 245 Anglos) from two universities, one located in the upper Midwest (Anglo) and the other in the Southwest region (Navajo) of the United States, participated in the study. Table 1 below presents a demographic profile of the subjects. The

majority of the students in this study were underclassmen (i.e., freshmen or sophomores) and single. While the median age among Navajo was 23-27 years compared to 18-22 years among Anglos, the mode for each group was 18-22 years. The Navajo student group included 96 women (63.6%) and 55 men (36.4%). Those percentages closely mirror the gender makeup of American Indian students (female = 77%; male = 23%) across the U.S. (Brownstein, 2000).

The Anglo student group in the study included 112 females (46%) and 133 males (54%). Brownstein (2000) reported that nationwide, women make up some 51% of the Anglo university student population. Among all U.S. students attending four-year colleges and universities, women are in the majority with a 55% to 45% split (Brownstein 2000).

List of Values	Source	SS	Df	MS	F	p<
Table 2. Level of Importance Attached to List of Values Elements: ANOVA Results: Anglo and Navajo						
Self-fulfillment	Between	0.352	1	0.352	0.238	0.626
	Within	580.357	393	1.477		
	Total	580.709	394			
Belonging	Between	0.538	1	0.538	0.189	0.664
	Within	1120.785	394	2.845		
	Total	1121.323	395			
Warm relationships*	Between	8.097	1	8.097	4.299	0.039
	Within	744.004	395	1.884		
	Total	752.101	396			
Well respected	Between	1.039	1	1.039	0.540	0.463
	Within	760.316	395	1.925		
	Total	761.355	396			
Security**	Between	8.523	1	8.523	4.691	0.031
	Within	717.568	395	1.817		
	Total	726.091	396			
Self respect**	Between	8.386	1	8.386	6.648	0.010
	Within	496.968	394	1.261		
	Total	505.354	395			
Fun and enjoyment	Between	0.526	1	0.526	0.247	0.620
	Within	841.017	394	2.135		
	Total	841.543	395			
Accomplishment**	Between	8.521	1	8.521	7.314	0.007
	Within	460.179	395	1.165		
	Total	468.700	396			

Key: * = Greater importance among Anglo students.
        ** = Greater importance among Navajo students.

RESULTS AND DISCUSSION

Analysis of variance was employed to test both hypotheses. Results for H1 are summarized below and in Table 2 while results for H2 are provided in Tables 3 and 4.

Table 3. Level of Importance Attached to List of Values Elements: ANOVA Results: Anglo men and Anglo women						
List of Values	Source	SS	Df	MS	F	p<
Self-fulfillment*	Between Within Total	5.045 332.938 337.984	1 243 244	5.045 1.370	3.682	0.056
Belonging*	Between Within Total	9.335 547.805 557.160	1 242 243	9.335 2.264	4.133	0.043
Warm relationships*	Between Within Total	20.379 350.421 370.800	1 243 244	20.379 1.442	14.132	0.000
Well respected*	Between Within Total	10.280 405.720 416.000	1 243 244	10.280 1.670	6.157	0.014
Security*	Between Within Total	14.106 383.363 397.469	1 243 244	14.106 1.578	8.941	0.003
Self respect*	Between Within Total	5.655 312.769 318.424	1 243 244	5.655 1.287	4.394	0.037
Fun and enjoyment	Between Within Total	1.950 410.968 412.918	1 242 243	1.950 1.698	1.148	0.285
Accomplishment	Between Within Total	3.658 277.468 281.127	1 243 244	3.658 1.142	3.204	0.075
Key: * = Greater importance among Anglo women.						

H1:   Anglo and Navajo students differ in the importance placed on the LOV items.

Hypothesis H1 was based upon the predicted impact of patriarchal versus egalitarian societies on the values of their members. Although the two cultures studied consisted of U.S.

households. Married-couple households in the U.S. have dropped from almost 80% in the 1950s to just 50.7% in 2003 (Conlin, 2003). It may well be that Navajo students rely on relationships with members of their extended family while Anglo students are forced to seek social relationships outside the family circle. Perhaps because of the additional relationships many Anglos are forced to build, they have placed more importance on warm relationships.

The Navajo emphasized security ($\bar{x}$=8.14) more so than Anglos ($\bar{x}$=7.84). Additionally, the Navajo also placed significantly more importance on both self respect ($\bar{x}$=8.59) and sense of accomplishment ($\bar{x}$=8.58) than did their Anglo counterparts ($\bar{x}$=8.29 and $\bar{x}$=8.28 respectively). These findings may be explained in part by the lifestyle differences between Navajos and Anglos. In comparison to Anglos, the Navajo have been a minority in America for many years and like other American Indian tribes, have been victims of some of the most blatant forms of discrimination. As recently as 1974, Navajo lands were taken away and the Navajo people were relocated because it was discovered that the land they were "given" back in 1882 was rich with mineral deposits. The previously classified "worthless" land was "repositioned" to allow U.S. mining endeavors to proceed and the Navajo were "devastated psychologically as well as financially" (Seggerman, 1986: pg. 9). Thus, it might be expected that security, accomplishment and self respect were more heavily valued by the Navajo participants, many of whom were first-generation college students.

H2:	Greater differences in values exist between Anglo men and women than between Navajo men and women.

Hypothesis H2 was based upon the predicted impact of cultural gender experiences on the LOV values. Anglo men and women differed significantly on the level of importance they attached to six of the eight LOV elements (i.e., all values except fun and enjoyment, and sense of accomplishment). In contrast, Navajo men and women did not differ significantly on any of the eight LOV elements. Thus H2 was strongly supported.

Among the six values in which Anglo men and women varied significantly, Anglo women placed greater importance on each of those values than did Anglo men. Anglo women placed greater importance on the values of self fulfillment ($\bar{x}$=8.35 vs. $\bar{x}$=8.06), sense of belonging ($\bar{x}$=7.51 vs. $\bar{x}$=7.12), warm relationships with others ($\bar{x}$=8.29 vs. $\bar{x}$=7.71), being well respected by others ($\bar{x}$=8.22 vs. $\bar{x}$=7.81), security ($\bar{x}$=8.10 vs. $\bar{x}$=7.62), self respect ($\bar{x}$=8.46 vs. $\bar{x}$=8.15), and accomplishment ($\bar{x}$=8.41 vs. $\bar{x}$=8.17) than did Anglo males.

These results could be indicative of the patriarchal nature of Anglo society. That is, these needs may be more important to Anglo women than Anglo men because they are not being met in society to as high a degree as they are for Anglo males. For example, historically there has been a disparity in the number of women executives compared to men. Catalyst Census of Women (2001) predicted that gender parity on Fortune 500 boards would not happen until 2064. Also, Anglo women may be more connected with their feelings than Anglo men (Duchatelet, 1998; Miller, 1976;

Myers, 1991) and thus rate these needs as much more important than do Anglo men. As predicted, based upon the earlier work of Johnston (1999), Lujan (1995), and Seggerman (1986), the results showed no significant differences in the importance placed on the eight LOV items by Navajo men and women.

IMPLICATIONS FOR EDUCATORS

The results of this research provide important insights for educators as they develop strategies related to the administration of educational offerings, promotion of the university, and the retention of students. Within the Navajo culture, educators may want to develop courses and provide services that emphasize the values of security, sense of accomplishment, and self respect. Educators cannot offer or emphasize all things to all students and therefore must identify those key elements (e.g., security, accomplishment, self respect) valued by the core customers and make subsequent strategic decisions.

For example, if seeking to make strategic decisions based upon the importance students place upon security, university administrators and marketers must first understand that security is a deficit value (Kahle 1996). That is, individuals who are secure and feel safe do not normally endorse this value. For example, as noted by Kahle in 1999, Israelis endorsed security as an important value and products that offered a sense of security were well received in that country. Kahle and his colleagues cautioned that care must be taken when promoting or offering programs based on deficit values, noting that respondents may react negatively to messages that come on too strong or lack subtlety (1999).

The Navajo also valued a sense of accomplishment more so than Anglos. Accomplishment is generally thought to be an internal value, which suggests an internal or personal sense of control. In addition to being an internal value, accomplishment is also an excess value, meaning that those who have accomplished a great amount are more likely to advocate accomplishment as an important value (Kahle, et al., 1999). In this regard, university promotional materials could emphasize the intrinsic and extrinsic reward to be obtained with a college degree or the accomplishments that can be achieved after graduation. Also, emphasizing student accomplishments while they are enrolled would be particularly valued and could positively impact student retention. For example, acknowledging the achievements of students through award ceremonies or other tangible recognition programs would likely be well received and highly valued.

Self respect, another important value among Navajo participants, is similar to achievement in that it is an internalized value relating to how one feels about him/herself. Thus, promotional material relating to the educational institution should incorporate a sense of self respect in addition to a sense of accomplishment. For example, institutions could emphasize something to the effect that as "you study hard and strive for the best, you also deserve the best education."

Among Anglos, warm relationships with others were particularly important. Here, educational institutions and their course offerings could be positioned within a social context, emphasizing the social aspects of college life and the close, family-like connections that may be formed while attending college.

With regard to the Navajo, no significant differences were found in the level of importance men and women attached to the eight LOV items. That finding suggests that promotional materials targeting Navajo students may have a more universal appeal and require less modification when based on values. Given the fact that women currently represent a significant majority of college bound American Indians (77%), universities may want to create promotional materials and course offerings designed specifically to recruit male Navajo students. While the sample of Navajo men and women students in this study appeared to share many of the same values, the values of Navajo men who chose not to pursue a higher education were not measured. Accordingly, it is not possible to compare the values of those individuals with the values of respondents in our sample. Reaching that untapped majority of non-college bound Navajo men might require different promotional and other marketing strategies.

Among Anglos, the gender differences in the importance of specific LOV items were in striking contrast to the Navajo students. The LOV items of self-fulfillment, sense of belonging, warm relationships with others, being well respected, security, and self respect were more highly valued by female Anglo students. Such gender differences in the importance of specific values provide university officials with intriguing insights. For example, such values as self-fulfillment and self respect are consistent with what is already understood about women's motivation to attend college. Research has shown that women in general tend to indicate educational reasons for attending college, such as "to gain a general education and appreciation of ideas" (Reisberg, 2000, p. A51). In contrast, many men reported being motivated to attend college due to the opportunity to gain greater wealth and to upgrade their credentials for career advancement. Ironically, money is often the reason many men have foregone an education and entered the workforce immediately after high school (Reynolds & Pemberton, 2001). Thus, when promoting higher education to Anglo women, educators should consider stressing the self edification that comes from life-long learning, and that higher education facilitates not just the learning of information, but also advances an understanding of how to learn.

The results of this study also showed that women value a sense of belonging and warm relationships with others. This finding, which is consistent with earlier research suggesting that women tend to be more in touch with their feelings (Duchatelet, 1998) and more empathetic (Schrage, 1999) than men, holds significant implications for university administrators. That is, the benefits of social interaction might be emphasized in both promotional campaigns and as an integral part the collegiate experience. Research has also shown that social interaction in the form of networking and mentoring is an important element in a woman's career success (CareerWomen.com, 2003; Oaki, 2001; Keating, 2002). That same research has shown that while such mentoring is

important, significant numbers of women executives have difficulty finding workplace and career mentors. Given those findings, mentoring with other students and faculty might be emphasized as a part of the educational experience and an avenue by which women could effectively fulfill the need to connect with others and to satisfy their need for job security.

LIMITATIONS AND FUTURE RESEARCH

A limitation of this research includes possible geographic effects of the sample. The sample consisted of students from two different geographic locations (i.e., the mid-west and the southwest) and value differences may have been influenced in part by the Navajo and Anglo students being located in different parts of the country.

Also, the sample was comprised of a disproportionate number of Navajo women (63.6%) compared to Navajo men (36.4%). However, education statistics suggest that our sample may actually be over-representative of male American Indian students. The largest gender gap of U.S. students attending college is found among American Indians, where the number of women exceeds that of men by 77% to 23% (Brownstein, 2000).

Future research could also include other American Indian cultures. The values of the Navajo may not necessarily be generalizable to other American Indian cultures. Thus, the inclusion of other American Indian cultures would offer a more comprehensive assessment of cultural values.

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GENDER EQUITY REGULATION AND PROFITABILITY IN COLLEGE ATHLETICS

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ABSTRACT

Title IX has become a central figure in the profit structure of college athletics. The empirical results from this study provide evidence supporting the prevailing notion that men's college football on the Division 1-A level is the dominant source of profits for collegiate athletic programs. Women's programs are shown to earn significantly less than all men's and gender neutral programs. On the other hand, standard regression analysis reveals a positive relationship between overall profits for a college and the profitability of women's programs, holding constant factors that include football profits, total school enrollment, percent of student athletic aid allocated to women, and conference affiliation. The results provide support to the notion that Title IX regulation is having a positive impact on the financial growth of women's athletic programs.

INTRODUCTION

In 1972 Title IX was established into law as a portion of the Education Amendments. Title IX states "*No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving federal financial assistance*" *(Curtis & Grant, 2000)*. Title IX has been the greatest contributing factor that has put forth gender equality in athletics but at the possible cost of many non-profit-generating male athletic programs such as swimming, baseball, and wrestling. Recently the controversy about the efficacy of Title IX and the impact it has on the profitability of collegiate sports has been debated in the media by the National Wrestling Coaches Association, Title IX supporters, and by elite college football programs.

The purpose of this research is to determine the factors that influence the profitability of college athletics and apply the results to the Title IX gender equity versus profit controversy. This paper is divided into six sections. First, background on Title IX and its contributions toward gender equality in sports is discussed. The next section offers a discussion on the role of Division I-A football in collegiate athletics. The third section applies a nonparametric technique in order to compare the profitability of college athletic programs by classification. This is followed by an empirical evaluation of the determinants of profits for 116 college athletic programs with Division

I-A football programs. The fifth section evaluates Title IX versus profit proposals. The final section offers concluding remarks.

HISTORY OF TITLE IX

Title IX was initiated by the 1965 Presidential Executive Order 11246, that prohibits contractors from discrimination in employment on the basis of race, color, religion or national origin. President Johnson later amended this in 1968 to include discrimination based on gender. In 1970, Rep. Edith Green drafted legislation prohibiting gender discrimination in education. The original bill was an amendment to Title VII, but was later changed to become Title IX (Katz, 2003). On June 23, 1972, Congress enacted Title IX as part of the Educational Amendments. President Richard Nixon signed this portion of the Educational Amendment into law, which prohibits any type of gender discrimination in any educational programs or activities, within an institution receiving federal financial assistance (Curtis & Grant, 2000). The act applies to both public and private schools, from kindergarten through graduate school, and covers admission, recruitment, educational programs and activities, course offerings and access, counseling, financial aid, employment assistance, facilities and housing, health and insurance benefits and services, scholarships, and athletics (Valentin, 2003). From 1972-1973, the first women's championships in badminton, basketball, golf, gymnastics, swimming, track and field, and volleyball were held. The Association for Intercollegiate Athletics for Women, the first national governing body for women's competitive sports in college, conducted these events (Suggs, 2002). On May 20, 1974, Republican Senator Tower of Texas put forth the Tower Amendment, which excluded any profit-producing sports such as Division I-A football from being tabulated when determining Title IX compliance. This amendment was rejected. On July 1974, Javit's Amendment was enacted and included in the Education Amendments. This amendment instructed the Department of Health, Education, and Welfare (DHEW) to issue Title IX regulation with respect to intercollegiate athletic activities, reasonable provisions considering the nature of particular sports. Because of the differences that exist among the athletic programs, such as football and volleyball, Title IX would comply with this difference and would not count as discriminatory. In 1975 & 1977, two bills attempted to alter Title IX coverage, but both died in committee before reaching House or Senate floors. On July 21, 1975, President Gerald Ford signed into law the final Title IX regulation, 34 C.F.R. Part 106. This regulation included provisions prohibiting gender discrimination in athletics and establishes a three-year window for educational institutions to comply. Senator Helms gave opposition to this; on July 21, 1975, he introduced S. 2146 in an attempt to prohibit the application of Title IX regulations to athletic programs where participation in those athletic activities are not a required part of the educational institution's curriculum.

In 1978, DHEW issued proposal policy "Title IX and Intercollegiate Athletics" for notice and comments. This policy had presumed compliance based on substantially equal average per

capita expenditures for men and women athletes and future expansion of opportunity and participation for women. On December 11, 1979, rather than relying exclusively on the presumed compliance standard a general compliance policy was proposed. The final policy focuses on an institution's obligation to provide equal opportunity detailing the factors to be considered in assessing actual compliance (currently referred to as the 3-Prong-Test). Proportionality, program expansion, or accommodating the interest and abilities of the student body are the three standard ways that compliance can be achieved. First, proportionality means that the percentage of women who participate in sports at a university should approximate the percentage of female undergraduates enrolled at the school. Second, is to show program expansion. This is achieved when a college demonstrates that it has increased, and continues to increase, opportunities for women. Finally, colleges may show that they have fully accommodated the desire to participate in athletics. The proportionality standard has generated the most controversy. In 1980, the Department of Education was given oversight of Title IX through the Office for Civil Rights (OCR). In 1984, the Grove City vs. Bell decision removed the applicability of Title IX in athletic programs by stating that only those programs or activities that receive direct federal financial assistance should be held under the umbrella of Title IX. On March 22, 1988, the Civil Rights Restoration Act became law after overriding a Presidential veto by President Ronald Reagan. It overrode the Grove City vs. Bell decision and mandated that all educational institutions, which receive any type of federal financial assistance, whether it is direct or indirect, be bound by Title IX legislation. On February 2, 1992, Franklin versus Gwinnett County Public School was decided as the Supreme Court ruled unanimously that plaintiffs who file Title IX lawsuits are entitled to receive punitive damages when intentional action to avoid Title IX compliance is established. Shortly after this Supreme Court decision, the NCAA completed and published a landmark Gender Equity study.

In 1994, Equity in Athletics Disclosure Act (EADA) was passed. It states that any coeducational institution of higher education that participates in any federal student financial aid program and has an intercollegiate athletics program must annually disclose certain information concerning that intercollegiate athletics program. All institutions must have compliance information available to all who inquire about specific information on their intercollegiate athletics department as required by the Equity in Athletics Disclosure Act. In February 2002, the National Wrestling Coaches Association (NWCA) filed a lawsuit against the Department of Education challenging the proportionality prong of Title IX. The lawsuit blames the 1996 rule, which clarifies the federal statute, with prompting colleges and universities to discriminate against men's teams. Also at issue is part of the 1996 clarification that said actual student-athletes would be counted rather than simply the number of spots allotted to teams. The suit against the Education Department contends that these federal regulations, and the subsequent court decisions interpreting them, have led some universities to cut men's sports rather than add women's sports in an effort to seek gender equity. The College Gymnastics Association and the United States Track Coaches Association later joined the lawsuit (Hawes, 2002). The Bush administration challenged the lawsuit on technical grounds, saying the

wrestling coaches did not have standing to file a claim because the court cannot address the loss of athletic programs. The administration also said the coaches should target the eliminated programs or institutions and not the Department of Education with the suit.

Title IX has provided many great benefits to women. It has been the most important measure ever undertaken to promote gender equality in sports (Leeds & Von Allen, 2002). Title IX is arguably the most significant benefit to American women since they won the right to vote in 1920 (Dodd, 2003). The passage of this piece of legislation has opened many doors and created opportunities for women that otherwise were not available. Title IX has created an infrastructure for women to pursue their passion in sports, get a college education, and to prepare themselves for a better life in the real world (Garber, 2002). "I can't imagine what my life would have been like if I hadn't played sports," said Emily Bauer, now North Central College's head women's basketball coach (Katz, 2003). Twenty years ago there were 1,855 female college soccer players. By 2001 that number increased to 18,548. From 1971-2002 the number of women in college sports increased fivefold (White, 2003). There are now more women's teams than men's: 9,479 to 9,149. If nothing else, it has given female athletes the confidence, backed by federal law that they can succeed. Mia Hamm and Sheryl Swoopes are two prominent female athletes that continued successful collegiate careers in professional sports leagues. Women's professional soccer and basketball would probably not exist today without the legal support afforded female collegiate athletes via Title IX legislation. Title IX is the great gender equalizer, which has given women like Emily Bauer, Mia Hamm, and countless others the opportunity to succeed in professional sports and professional careers outside the sports arena. On the other hand, Title IX and gender equity are continuously criticized for putting college athletics in the red and hurting the viability of male participation in non-profit-generating sports like wrestling, soccer, and swimming. It has been noted that the long-run competitiveness of the U.S. Olympic team may suffer in some male sports because of lower participation on the collegiate level.

THE ROLE OF FOOTBALL IN DIVISION I-A COLLEGIATE ATHLETICS

Any discussion of Division I-A college athletics requires a special discussion on football. College football is big business. During the 2001-2002 academic year Division I-A college football earned a combined profit of over $225 million. Fans provide financial funding to football programs by attending games, purchasing licensed merchandise, watching television, and contributing to the alumni association. Division I-A football is considered to be a revenue sport. A revenue sport is actually a misnomer, as the term does not mean that they generate revenue, but that they generate revenue in excess of their costs (Leeds & Von Allen 2002). With the profit, football is able to subsidize other non-revenue sports such as swimming, gymnastics, and wrestling. Paul "Bear" Bryant, former football coach at the University of Alabama, justified the prominence of his program by claiming it was unlikely that 50,000 people would show up to watch an English professor give

a final exam (Zimbalist, 1999). Robert Brown (1993) conducted a study showing that a player with the potential to play in the NFL brings a college football team between $539,000 and $646,000 per year, more than $2 million over a four year career. Football carries the financial load in Division I-A athletics. The average annual profit is close to $5 million for football, while the average profit for the entire Division I-A athletic program is below $2 million. Football profits spill over and helps other sports. Football profits mean better basketball facilities, higher-profile coaches, and more TV exposure, all of which help attract the best talent (Fitzpatrick, 2002). This creates a domino effect where all athletic programs benefit from football profits.

At any given time in a football game a team is only allowed eleven players on the playing field. The majority of Division I-A football programs are compromised of one hundred football players not including the coaching staff and trainers. Football programs offer as many as eighty-five scholarships to players during an academic year. This vast number of football scholarships counts toward Title IX compliance requirements and is one of the primary reasons that non-profit-generating men's programs are often eliminated. There is no comparable women's program to balance the athletic scholarship numbers. This is where the primary problem starts for men's athletic programs other than football. Athletic administrators argue that they have been slow to respond to Title IX requirements because either non-profit-generating men's programs will have to suffer or profits will have to come out of men's programs that generate profits, primarily football. Some argue diverting money from football could weaken the ability of the football program to continue to prosper and subsidize other sports, making all of the athletic programs at any college worse off. The solution has been to cut non-profit-generating men's programs. The University of Kansas athletic department cut men's swimming and tennis in 2001 to stay in the black, saving about $600,000 per year and reducing participation by 50 male athletes. Among the reasons cited for the cuts were increasing scholarship costs, increases in team travel costs for other sports, increases in coaches' salaries, and to meet gender equity requirements. Title IX defenders put forth the argument that non-revenue-generating men's sports are not being eliminated because of gender equity but because a disproportionate amount of athletic resources are distributed to football programs. The extension of this argument is that instead of eliminating men's wrestling, swimming, and tennis programs many universities could reduce the resource base of football instead of blaming gender equity.

COMPARISON OF THE PROFITABILITY OF COLLEGIATE ATHLETIC PROGRAMS

Is there a difference in the profitability of college athletic programs by classification? The general belief about college athletics is that football and men's basketball programs earn large profits that subsidize other men's programs and women's athletics. In this section we compare the profitability of collegiate athletic programs in four different categories during the 2001-2002

academic year. The sample is drawn from 116 athletic programs with Division I-A football. The data source is the Office of Postsecondary Education Equity in Athletics Disclosure Website (2003), a division of the United States Department of Education. The four program classifications are men's football, men's basketball, women's programs, and other programs. Other programs include men's athletic programs outside of the football and basketball area and gender-neutral athletic programs such as track & field. The statistical methodology incorporates a nonparametric approach to comparing the profitability of athletic programs. The Kruskal-Wallis test is employed because it offers the most powerful test statistic in a completely randomized design without assuming a normal distribution. The Kruskal-Wallis test is designed to be sensitive against differences among means in the *k* populations and is extremely useful when the alternative hypothesis is that the *k* populations do not have identical means. The Kruskal-Wallis test is used in this study to test the null hypothesis that the *k* profitability of athletic programs is derived from an identical distribution function. For a complete description of the Kruskal-Wallis test see Conover (1980). The specific equations used in the calculations are as follows:

(1) $N = \sum_i n_i$ with i = 1 to k

(2) $R_i = \sum_j R(X_{ij})$ with j = 1 to n_i

(3) $R_j = \sum_i O_{ij} R_i$ with i = 1 to c

(4) $S^2 = [1/(N-1)] [\sum_i t_i R_i^2 - N(N+1)^2/4]$ with i = 1 to c

(5) $T = (1/S^2) [\sum_i (R_i^2/n_i) - N(N+1)^2/4]$ with i = 1 to k

(6) $| (R_i/n_i) - (R_j/n_j) | > t_{1-a/2} [S^2(N-1-T)/(N-k)]^{1/2} [(1/n_i) + (1/n_j)]^{1/2}$

where *R* is defined as the variable rank and *N* is the total number of observations. The first three equations are used to find average ranks. Equation (4) is used to calculate the sample variance, while equation (5) represents the test statistic. If, and only if, the null hypothesis is rejected, equation (6) is employed to determine multiple comparisons of profitability across the various athletic programs.

The empirical approach yields a T-value of 34.36 (p-value = .0001), indicating a significant difference in profitability across the four program classifications. Table 1 presents a summary of the average profitability of athletic programs listed by conference classification for illustrative purposes. Assuming an alpha level of .05, the empirical results from equation 6 indicate that men's football is significantly more profitable than the other three program classifications. In addition, men's basketball is significantly more profitable than the remaining two program classifications.

Finally, women's athletics earns profits that are significantly lower than other programs at an alpha level of five percent. It should be noted that women's basketball programs are profit generators for some colleges and would not be lower than the other programs classification if isolated from other women's sports as part of the multiple comparison test.

The results provide evidence supporting the notion that the profits from men's football and, to a lesser extent, men's basketball subsidize women's and other college athletic programs. The combined average profitability of men's football and men's basketball is just under seven million dollars for the 2001-2002 academic year while the combined average profitability of women's athletic and other programs is approximately negative five million dollars. Table 1 provides a picture of program profitability. Football is clearly the dominant program in 8 of the 12 conference classifications, highlighted by an astonishing average profit of more than $18 million per university in the SEC conference. Women's programs have the smallest profits or biggest losses in 10 of the 12 conference classifications. One interesting pattern derived from the Table 1 summary is the observation that conferences that are not part of the Bowl Championship Series (BCS) for college football do not usually earn very large profits from the football programs and are often more successful in men's basketball or other programs. The conferences that received an automatic bid into the BCS are ACC, Big East, Big Ten, Big Twelve, Pac Ten, and SEC. With the exception of the Big East, five of the six most profitable conferences are BCS conferences.

Table 1: Average Profitability of Collegiate Division I Athletic Programs (by Conference)					
Conference	Total	Football	M Basketball	Women	Other
ACC	2,291,000	4,442,667	5,100,000	-3,498,889	-3,752,778
Big East	-2,122,750	2,797,250	779,700	-3,881,800	-1,817,900
Big Ten	5,811,364	12,211,640	5,219,455	-5,844,000	-5,775,727
Big Twelve	5,978,417	9,553,667	2,033,250	-3,652,750	-1,955,750
Conf. USA	-1,304,500	-538,100	1,627,800	-2,414,200	20,000
MAC	-1,195,462	-1,198,308	-304,154	-1,518,154	1,825,154
Mount. West	1,014,000	-70,500	1,391,875	-2,318,750	2,011,375
Pac Ten	1,994,000	6,841,800	2,479,000	-4,368,200	-2,958,600
SEC	8,914,750	18,435,830	2,973,417	-4,102,583	-8,391,917
Sun Belt	-784,000	-749,000	-255,429	-1,048,714	1,269,143
WAC	-1,402,500	-410,300	510,700	-2,334,600	831,700
Independent	1,397,417	3,032,667	-191,500	-1,632,750	189,000
ALL	1,965,931	5,071,629	1,913,733	-3,198,138	-1,821,293

DETERMINANTS OF COLLEGIATE ATHLETIC PROFITS

Division I-A college athletic programs generated over $400 million dollars in profit for the 2001-2002 academic year. There is little disagreement that collegiate athletics on the highest level is big business. In this section standard regression analysis is employed to investigate the determinants of collegiate athletic profit. Once again, the sample is drawn from 116 athletic programs with Division I-A football and the data source is the Office of Postsecondary Education Equity in Athletics Disclosure Website (2003).

The empirical model for this study is specified below as:

(7) $PROFIT_i = B_0 + B_1 PROGRAM_{ij} + B_2 ENROLLMENT_i + B_3 WENROLLMENT_i + B_4 WFINAID_i + B_5 CONF_i + u_i$

where PROGRAM is a categorical variable representing program classification, ENROLLMENT is the total student enrollment at the university, WENROLLMENT is the percent of total student enrollment that is female, WFINAID is the percent of the athletic related student aid spent on female athletes, and CONF is a categorical variable separating conferences with an automatic bid to the Bowl Championship Series. Consistent with the previous section, the four program classifications are men's football, men's basketball, women's programs, and other programs.

The estimated empirical relationship between the explanatory variables and collegiate athletic profits is presented in Table 2. Two model specifications are presented, the first estimates profits leaving men's basketball out of the model in order to maintain full rank and insure an estimable equation. The second model specification is estimated without men's football. The first model explains eighty-nine percent of the variance in college athletic profits, while the second model explains thirty-four percent. The substantial difference in the adjusted coefficient of determinnation combined with the substantially higher F-value reiterates the significant role football plays on college athletic profitability. None of the independent variables have a correlation higher than 0.35, suggesting that excessive multicollinearity is not a problem in the analysis. Five of the seven variables in the first model and six of seven variables in the second model are statistically significant.

The four program classifications are positive and significant in both empirical specificatioins. It is not surprising to see a positive and significant coefficient for football and men's basketball considering the results from the previous section. Football and men's basketball profits are the primary drivers of collegiate athletic profits. The observation that women's programs and other programs are positive and significant in both model specifications can be explained by the fact that overall profits are highly influenced by the profitability of each individual program classification. For example, a university with a profitable women's athletic program is more incline to have larger overall profits. Financial viability in women's and other programs clearly create an advantage for overall programs, holding constant the normal profitability associated with football and men's basketball programs. One possible implication derived from the result is that colleges should

consider increasing their promotion of female sports programs in an attempt to develop a fan following and maximize profits (minimize losses). The growing popularity of women's basketball is an example of a possible model to follow.

Table 2: Estimation of Equation (7)		
Variable	Coefficient (t-statistic)	Coefficient (t-statistic)
Intercept	252.8 (0.16)	2654.9 (0.70)
MFOOTBALL	0.968 (26.06)**	
MBASKETBALL		0.788 (3.18)**
WPROGRAMS	1.075 (10.80)**	0.742 (2.89)**
OPROGRAMS	0.880 (17.96)**	0.245 (2.28)**
ENROLLMENT	0.029 (1.27)	0.115 (2.01)**
WENROLLMENT	-5863.6 (-1.48)	-18518.7 (-1.82)*
WFINAID	80.960 (1.89)*	133.33 (1.20)
CONF	1743.8 (3.14)**	3857.8 (2.66)**
Adj. R-square F-value	0.8952 141.4**	0.3443 8.10**
Notes: **p<.05, *p<.10, and n = 116.		

Enrollment, female enrollment, and financial aid to female athletes offer mixed results across the two model specifications. Total university enrollment has a positive impact on the profitability of college athletics and is statistically significant in the second model specification. The result implies that larger schools with high enrollments have a bigger audience for athletics and profit from this larger student base. The WENROLLMENT variable is included in the model because it relates directly to the proportionality test applied to Title IX. The empirical results show an increase in the percent of the student enrollment that is female has a negative impact on athletic profit. There are two possible explanations for the negative impact female enrollment has on collegiate athletic profits. The most obvious explanation is that men have a greater propensity to be sports fans and are more likely to attend sporting events. Therefore, an institution with a high female enrollment may suffer at the athletic ticket counter if women do not attend as many sporting events. The second explanation revolves around the idea that institutions with relatively high female enrollment have greater difficulty complying with Title IX and are encouraged to redistribute resources toward women's athletics instead of the traditionally higher profit football and men's basketball programs. The WFINAID variable is positive in both empirical models. University athletic programs that are able to allocate a higher percentage of their student athlete financial aid to women are shown to have higher profits, although the result is somewhat tempered by the observation that the variable is statistically significant at the ten percent level in only one of the model specifications. One possible interpretation is that programs that allocate a greater percentage of their student athlete financial aid to women are more likely to be in Title IX compliance, and free to allocate resources efficiently towards the most profitable outlets.

The last variable included in the analysis controls for conference (CONF). Being in one of the large Bowl Championship Series conferences clearly has a positive and significant impact on profitability. Football dominates the collegiate athletic profit landscape but there is a big difference across the various conferences. This issue has recently been in the headlines in the form of a couple of top football schools from the Big East conference (University of Miami and Virginia Tech) leaving for the potential of a bigger payday from an augmented ACC conference that would be comparable to the SEC, Big Ten, Pac Ten, and Big Twelve. The current trend in college athletics is to create super conferences of twelve to sixteen large universities that compete on an elite level for big money. Current NCAA regulations allow conferences with twelve or more teams to hold a conference championship game at the end of the season. Super conferences like the SEC and Big Twelve are able to generate additional football revenues at the ticket counter, concession stands, and via the sale of television broadcasting rights from a conference championship game.

CONCLUSION

Title IX regulation has become a central figure in the profit structure of college athletics. There is little doubt that women have benefited greatly since the implementation of Title IX.

Collegiate compliance with Title IX has allowed many more women the opportunity to participate in sports. The empirical results from this study provide evidence supporting the prevailing notion that men's college football on the Division I-A level is the dominant source of profits for collegiate athletic programs and that women's programs earn significantly less than all men's and gender neutral programs. On the other hand, standard regression analysis reveals a positive relationship between overall profits for a college and the profitability of women's programs, holding constant factors that include football, men's basketball, total enrollment, and conference affiliation. Despite the mixed empirical results there is clear anecdotal evidence that the impact of Title IX on women's athletics has been immensely positive. The number of women participating in intercollegiate athletics has gone from approximately 30,000 to more than 150,000 since 1972. In the last 20 years alone the number women's college teams has nearly doubled. Future research endeavors should include Division I-AA and Division II colleges in order to determine if the dominance of college football extends beyond the elite programs in major Division I-A conferences.

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