STUDENT VIEWS OF MANAGEMENT SKILLS AND THEIR FUTURE CAREERS AFTER USING BUSINESS SIMULATIONS

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ABSTRACT

Simulations have enhanced experiential learning in various disciplines. Little research currently exists to provide evidence that business students' views of management skills change after using a simulation. The purpose of this quantitative quasi-experimental research study was to examine the degree of change, if any, in students' views of management skills towards future careers. A pre- and post-survey was distributed to 25 college students, freshmen and juniors, whose average age was 19. Results indicated there was no significant change in students' view towards their future career. However, students did not advocate the removal or limitation of using simulations in the classroom.

INTRODUCTION

A business simulation is an apparatus presenting a circumstance allowing students to experience a fictitious business in a safe learning environment (Oxford University Press, 2005). Students using a business simulation make choices and gain understanding of operations and management decision making. Decision parameters may range from a few variables to many variables. Verdicts in a simulation correspond to conditions faced by managers and leaders in a business setting.

Institutions of higher learning find themselves involved in a competitive environment influenced by demands from both students and business. Globalization and technological change create a need for students who can transition quickly from an educational setting to the business environment using learned skills, which ensure a life-long lucrative career. Employees who attended school to gain skills desired both theoretical business understanding and practical knowledge needed for a successful career (Malik & Morse, 2000).

Grey (2004) presented a case for modifying management education to reflect practical management decision making. Medical, law, and engineering schools using realistic experiences introduced students to changing environments and complex decision making bringing students closer to realities in the workplace (Grey, 2004). Chang (2003) suggested students improved their understanding of business complexity by using simulations. Although learning occurred from simulations, some students craved practical preparation for a career (Teach & Schwartz, 2004).

Simulations allow individuals to use management skills such as planning, leading, organizing, and controlling in a safe environment resulting in awareness of possible consequences of a decision without damage to an existing business. Students who observe consequences of decision making without understanding the effect of a simulation may hold different views of management skills after using a simulation. Insufficient evidence in current research exists regarding effects of simulations on students' views of management skills, specifically related to future careers. The next section reviews historical and current literature in experiential and problem-based learning, business simulations, and management skills.

LITERATURE REVIEW

The literature review covers four major areas: (a) experiential learning, (b) problem-based learning (PBL), (c) business simulations, and (d) management skills. Learning from simulations involves students in the educational process and discussed in the experiential learning section. PBL further enhances the discussion of experiential learning, by using simulations to solve problems and integrating the complexity of business. In the business simulations section, a review of effectiveness provides understanding of simulations in prior research. The management skills section provides a review of companies and leaders in industry surveyed to gather data on important business skills. Experiential learning provides a basis for students to gain knowledge about management skills without significant consequences and within a safe environment.

EXPERIENTIAL LEARNING

The opportunity for students to apply knowledge from individual classes to a business environment is important. The difference between solving problems from a textbook and applying a solution created an opportunity. Experiential learning created an opportunity to assess, analyze, and apply data in solving complex problems (Sauaia, 2006).

Solving complex business problems required factual knowledge and application of the knowledge to real-life business situations. Problems arise when students learn factual knowledge with no practical context for applying information. Students must have dynamic knowledge (that is management-related experience and changing situations) to solve business problems. One method of creating

dynamic knowledge is through experiential learning. A basis for learning comes from Bloom's (1956) educational taxonomy. However, the model does not highlight the ability to solve unique or undefined problems (Cannon & Feinstein, 2005).

Bloom's (1956) educational taxonomy was useful towards understanding how learning took place in instructional environments and how students used analytical skills (Cannon & Feinstein, 2005). Bloom's taxonomy while popular lacked a foundation to describe a person's competency and multifaceted capabilities. Bloom's taxonomy reflected two parts, lower level skills related to knowledge or content, and higher order skills related to cognition. Bloom's Taxonomy lacked a component for solving creative or never-before-seen problems. A revised taxonomy included two new dimensions of learning, cognitive dimensions (that is remembering, understanding, applying, analyzing, and evaluating), and a knowledge factor (that is factual content as well as theoretical, procedural, and metacognitive knowledge). The improved taxonomy incorporated prevailing conditions between cognitive and knowledge dimensions (Cannon & Feinstein, 2005).

Knowledge application addressed the point at which a student or learner created new strategies to achieve competitive advantage. The drive for competitive advantage by students required development and integration of skills. Thus, learning in a simulation provided more interactive learning and covered a wider range of skills. Simulations belonged in the metacognitive area, by forcing students to use all intellectual processes. A student must use analytical thinking in a simulated business environment to solve serial or distinct problems (Cannon & Feinstein, 2005).

PROBLEM-BASED LEARNING

Problem-based learning (PBL) and experiential learning complement each other by using knowledge to make decisions and solve problems. PBL required the teacher assigned a suitable problem, helped participants identify missing information, and then applied knowledge to solve the problem. The problem must engage students and required development of course axioms that linked to a simulation (Anderson & Lawton, 2004).

A business simulation fits conditions engaging students and developing course axioms because the problem in a simulation has (a) unclear dimensions, (b) incomplete information, (c) multiple recommendations, and (d) no single answer. The simulation provided multiple alternatives to solve the problem with no correct solutions. Therefore, students must apply business ideas to solve the problem in a business environment (Anderson & Lawton, 2004).

While simulations provided a premise for PBL and integrating classroom material, most business schools presented material compartmentalized by specialization. "Whilst theoretical knowledge of business discipline is important, content without experience is of little help to business organizations" (Payne & Whittaker, 2005, p. 246). The current business curriculum must get students actively involved in the course and engaged in application of classroom material. Business schools needed an approach to studying business by participating in experiential learning activities and developing, and practicing higher order intellectual skills (Payne & Whittaker, 2005).

To accomplish the task, students needed teachers with an integrated understanding of business and not specialized knowledge (Payne & Whittaker, 2005). Harris and Schwann (1991, as cited in Payne & Whittaker, 2005) suggested three ways to view learning depending on emphasis. Three ways included (a) emphasis on results, (b) practice with outcome, and (c) emphasis on behavioral change in learning. If the student engaged actively in learning and acquired knowledge and experience, the student learned to balance various business practices.

Simulations provided an effective way of teaching a business curriculum. By using simulations, the curriculum became authentic in providing a vicarious experiential learning environment. The environment enabled a student to apply theoretical knowledge and reflect on the experience. An important dimension of PBL is using simulations to solve unique problems (Payne & Whittaker, 2005).

BUSINESS GAMES AND SIMULATIONS

Simulations existed for many years throughout history. Over the last 30 years, researchers assessed team arrangement, player performance, and effectiveness with positive and some negative outcomes for using simulations as an exploratory tool. Game-related assignments improved performance, smaller teams outperformed larger teams, and conflict did not hamper performance. By 1978, students' past academic achievement produced positive performance and performance correlated with team cohesion. In the late 1980s, researchers found company earnings performance correlated with individual player grade point average (GPA) (Faria, 2000).

Further studies found formal planning had a correlation to company performance (Faria, 2000). A significant study with students ($N = 401$) in 1998 by Gosen and Washburn (as cited in Faria, 2000) highlighted a relationship among participant characteristics such as performance, academic ability, and participant motivation. Team cohesion and degree of team organization related to performance. The following items helped performance (a) team goal setting, (b) degree of team competitiveness, (c) perceptions of a particular simulation, and (d) perceptions of simulations as learning tools.

Gosen and Washburn (1988, as cited in Faria, 2000) discussed effectiveness in simulations. Game-centered sections of courses outperformed lecture-centered courses when comparing midterm and final exams. From 1975 to 1977, seven out of nine studies determined students scored higher on common exams or felt they learned more over traditional lecture and case classrooms. In 1997, Wolfe (as cited in Faria, 2000) found evidence computer-based general management games were effective for teaching strategic management.

Although real-life experiences were good for students, research using simulations and games was important for identifying research effectiveness. McGrath (1982, as cited in Keys & Wolfe, 1990) identified three parts of good research (a) generalizability of a population from a sample, (b) control, and precision to evaluate behaviors, and (c) realism of the setting. One distinct advantage of games was the closed nature of the system. Lant (1989, as cited in Keys & Wolfe, 1990) reported gaming provided interest, involvement, and enthusiasm through competition and similarity to real life. The simulation increased excitement because time was collapsed and behavior was observable and measurable (Keys & Wolfe, 1990).

Chang (2003) surveyed faculty members ($N = 632$) at local universities and polytechnics in Hong Kong about the effectiveness and using business simulations. Respondents indicated using simulations in the classroom was important 25% of the time. Participants implied simulations achieved course objectives when they understood (a) functional links, (b) problem identification and analytical skills, (c) development of decision-making skills, and (d) improvement in verbal and written skills (Chang, 2003).

Using simulations in the classroom was important. When asked about the effectiveness of computer simulations, respondents on average thought simulations contributed to classroom learning. Other results arose from the study indicating a favorable response to maintaining student interest and linking course material to reality. Students failed to value how important understanding task connections were to course objectives (Chang, 2003).

Kentworthy and Wong (2005), reviewed game participants ($N = 49$), simulation users ($N = 27$), and case members ($N = 24$) in a strategic management program with senior and first level managers. Using ANOVA $F (3, 97) = 12.07$, $p = .00$ (Power = .99) a significant difference existed between the learning attained in games and simulations versus case study group. Using T-tests, the learning gained ($p = .00$) from simulations and games was greater than case studies. Simulation participants found more enjoyment than case study students did (Kentworthy & Wong, 2005).

In a related study, Cook and Swift (2006) investigated using simulations in a sales management course. Students ($N = 151$) responded to a survey that compared a simulation to a textbook as well as learning objectives. Participants rated on a scale of 1 (strongly disagreed) to 9 (strongly agreed) using a simulation as a positive experience ($M = 8.18$) that should continue in future courses ($M = 8.17$) and useful in the learning process ($M = 8.15$). A positive correlation ($p < .01$) existed between simulations ($r > .46$) and improvements in decision making, problem solving, and analytical skills as well as understanding sales management and developing team skills. In addition, students thought the simulation was interesting, provided experience and allowed use of class material (Cook & Swift, 2006).

MANAGEMENT SKILLS

Velthouse and Kandogan (2006) investigated management skill sets needed in management by asking MBA students working in various size firms and industries. The top five skills were (a) managerial leadership, (b) decision making, (c) initiative, (d) gathering information and problem solving, and (e) practical learning. Organizing ranked seventh and planning ranked eleventh. Oral communication ranked ninth while written communication ranked 21st.

A 2001 survey by the American Management Association with 525 respondents noted the top 10 managerial competencies and skills important to organizations (see Table 1). Managerial competencies and organizational skills have some common components important to both managerial success and the organization. Customer focus ranked first in both studies. Students need to practice and reinforce work related skills by using simulations.

In a related study, Whetton and Cameron (2005) conducted a study ($N = 402$) of effective managers rated by senior officials in their organizations. Management skills were (a) behavioral, (b) controllable, (c) developable, (d) interrelated, (e) overlapping, and (f) sometimes contradictory. The behavioral component reflected observable actions by individuals.

The participants identified 10 managerial skills necessary for effective management. The top five skills identified by mangers included (a) verbal communication, (b) time, and stress management, (c) management of individual decisions (d) problem recognition, definition and solvability, and (e) motivation and influence over others. The next five skills were (a) delegation of duties, (b) goal setting, and vision articulation, (c) self-awareness, (d) building of teams, and (e) conflict management. In conclusion, communication skills, ability to decide, and problem solving were critical. Motivation and delegation as well as team building and managing conflict were similar in ranking (Whetton & Cameron, 2005).

A related study by Chang, Lee, Ng and Moon (2003) noted students ($N = 142$) found simulations useful 86% of the time. Games or simulations were useful in developing managerial skills. Students identified (a) assimilation of new information, (b) development of planning skills, (c) utilization of financial data in decision making, and (d) cohesiveness of teamwork as valuable skills.

Sixty-three percent of students responded that understanding of business and managing financial survival and growth were important. Negotiation and communication were critical. Two other key items identified as benefits of playing a business game were understanding consequences of decision making and market mechanisms. Important links existed between management skills taught in other countries and using simulations in a classroom to develop skills. Students in Hong Kong learned business concepts and developed important skills such as planning and decision making, and understood the complexity of business (Chang et al., 2003).

TABLE 1

Managerial Competencies versus Organization Skills

Managerial competencies	Skills important to the organization
1. Customer focus	1. Customer focus
2. Credibility	2. Problem solving
3. Contribute to corporate mission	3. Solution implementation
4. Cooperation and commitment	4. Cooperation and commitment
5. Multitasking	5. Contribute to corporate mission
6. Problem solving	6. Transform ideas into action
7. Working in teams	7. Credibility
8. Understand business use of technology	8. Listening and questioning skills
9. Solution implementation	9. Understand business use of technology
10. Presentation skills	10. Opportunity identification

Note. From *American Management Association Survey - Managerial Skills and Competence - March 2001* [Data file], American Management Association, 2001, New York. Copyright 2001 by American Management Association. Adapted with permission.

METHOD

The purpose of this quantitative quasi-experimental nonequivalent control-group research study explored the degree to which a simulation affects views of management skills of 25 students at Public State College in Upstate New York. The research methodology design used to identify changes in students' views towards future careers in Business Organization and Management is discussed. The simulation, the independent variable, and its effect on students' views of management skills towards future careers, the dependent variable follows. Further discussion includes the population as well as data collection. Discussion of validity, both internal and external, contains information about reducing bias and maintaining impartiality. The data analysis section focuses on data compilation and statistical analysis useful for drawing conclusions. A discussion of validity and appropriateness of the instrument provides a foundation for the study.

RESEARCH DESIGN

The study was a quantitative quasi-experimental nonequivalent control-group design that explored changes in students' views of management skills towards future careers. In order to gather data, students completed a pre- and postsimulation survey. Creswell (2002) noted this design reflected collecting quantitative data first and then gathering qualitative data for elaboration.

A quasi-experimental research design required an investigator to determine the impact of an intervention on participants in a study without creation of random group assignments (Creswell, 2002). "The rationale for the approach is that quantitative data and results provide a general picture of the research problem; more analysis, specifically through qualitative data collection, is needed to refine, extend, or explain the general picture" (Creswell, 2002, p. 566). Pre- and postsurveys helped to generate results needing enhancement from focus groups. Creswell (2002) noted that (a) quantitative data has priority, (b) quantitative data is the first collection procedure, and (c) uses qualitative data to refine quantitative data.

The research design included one experimental group in two different sections of the Business Organization and Management class. Student participants self-selected a course best fitting a personal course schedule. Each student took a presurvey in the middle of the semester before beginning the simulation. Each individual took a postsurvey at the end of the course after the simulation ended to measure importance of management skills. Identification of changes in students' views of management skills were assessed by information collected pre- and post-simulation as well as focus groups identified from random drawing of names from a hat.

Based upon presurvey data from both classes, two focus groups provided qualitative data about students' views of management skills. Focus group research was a formal procedure whereby a collection of people gave details about a topic of interest through spontaneous discussion (Hair,

Bush, & Ortinau, 2003). Focus group formation based on presurvey data came from a random sample of students based on management experience. Two focus groups, one with prior management and a second without prior management experience formed the second stage of research.

Each class section formed teams. Each team had two- to four-member in each company. The total number was between 5 to 10 companies. Each student had an option of changing teams once in the semester before the simulation began. If a student was unable to work with the team, the student had the option of managing one of two companies operated by the instructor. The companies ran by the instructor used computer-generated decisions. Computer-generated decisions gave no companies overseen by the professor any significant advantage during the playing of the simulation.

Each class section remained separate throughout the simulation period. Separation ensured non-interaction of results between groups. Team formation and experimental design provided an experiential learning pursuit helping teach management skills.

A course schedule guided the professor during the course whereby students in both sections learned material first and then participated in the simulation. Thus, a student had no prior exposure to the simulation. Students were exposed to the following skills during the semester lectures (a) team and individual decision-making, (b) teamwork and communication, and (c) historical management theories and leadership topics. In addition, students explored (a) ethics and decision making, (b) general and strategic planning, (c) human resources and organizational structure, and (d) control.

Entrepreneur by Smith and Golden (2003a) was the simulation used during the study. During the simulation, each team made 12 decisions representing quarterly results over three years of the simulated business operations (that is four quarters equals one year). After the eighth decision, each team presented positive or negative company progress during the first two years. Each team presented financial progress, results compared to objectives, and plans for the third year.

The professor collected each team's decision for batch processing. The instructor checked each form against the team's submitted form, thus providing an additional check of validity throughout the simulation experience. The professor processed each class section separately to maintain authenticity. After processing decisions, the instructor printed the results for each team.

RESEARCH QUESTION

Wellington and Faria (2004) surveyed 14,487 American Association of Collegiate Schools of Business faculty members. Forty-eight percent of 1,085 respondents were current or former users of simulations. Change in students' views of management skills resulting from using a simulation needed further investigation. Paper and pen tests might not provide the most effective assessment of knowledge or change (Wolfe & Luethge, 2003). The following question was pertinent:

How do students using a simulation view management skills and future career success during focus group discussions?

HYPOTHESIS

Wolfe and Luethge (2003) noted students engaged in simulations fared better in the classroom. The authors suggested further studies should assess learning more explicitly and longitudinally. Specifically, identifying, in a pre- and postsurvey, overall change in views towards future careers was the focus of the study. In addition, focus groups provided better understanding of first hand experiences of participating students. The following hypothesis was under investigation in the study:

Null Hypothesis: Students using a business simulation over 15 weeks exhibited no change in their views of management skills towards their future career measured on a pre- and postsurvey.

Alternative Hypothesis: Students using a business simulation over 15 weeks exhibited changes in their views of management skills towards their future careers measured on a pre- and postsurvey.

INSTRUMENTATION

Before the simulation occurred, students responded to a Likert-type scale survey to assess their views of management skills taught during the course. The first part of the survey involved rating each skill under four major management area (that is planning, leading, organizing, controlling, and general business environment) taught in the Business Organization and Management course. Survey questions helped determine changes in students' views of management skills.

In addition, the survey had a demographic section that helped identify characteristic information. A ranking of the four management skills, along with reasons for the first and last ranking, took place in the final three survey questions. Demographic information included (a) gender, (b) age, (c) prior degrees and most recent or current degree, (d) prior courses taken by each participant, and (e) prior management experience.

DATA COLLECTION

Data collection involved using a computerized survey to gather data to understand changes in students' views of management skills. Data from individual surveys was downloaded into an Excel database spreadsheet. Each student needed to supply a random number for the study that maintained anonymity. A random number assigned to each student on the presurvey was identical with the random number assigned to students on the postsurvey. The identical random number allowed comparison of presurvey

and postsurvey results to note any changes in views and protect student identity in the study.

Besides the survey, the random formation of two focus groups occurred to garner students' views on the impact of the simulation. Focus group discussions were recorded digitally while each group answered 10 questions. A focus group is a method to gather a small group of people together for spontaneous discussion (Hair et al., 2003). The goal is to gain ideas, attitudes, feelings, and experience about a topic. Focus group formations assisted in understanding further survey responses and the simulation's affect on the study.

Based on presurvey results, the formation of one of the focus groups (two students) occurred based upon no prior management experience. The other focus group, of a similar size, included students with prior management experience. Both groups responded to the same 10 questions. The first five questions gathered information on whether the simulation was the main influence on any change in students' views of management skills. The next five questions ascertained the simulation's impact on resulting changes in students' views of management skills. Based on presurvey results, the selection of student names in the focus groups happened randomly.

DATA ANALYSIS

Data analysis included descriptive statistics calculating (a) mean, (b) mode, (c) median, (d) range, (e) standard deviation, and (f) frequency distributions. In addition, changes in each management category (that is planning, leading, organizing, and controlling) happened. Descriptive statistics calculation in SPSS provided results on each survey question. SPSS was used because the results are more accurate. Demographic statistics provided a description of the sample.

Total student population at Public State College, an associate and baccalaureate granting institution, was 3,300 in fall 2006. The college population was 54% male. The students came from any one of 58 different degree programs, only nine were baccalaureate degrees programs. One hundred sixty-five students took Business Organization and Management in fall 2006. The self-selecting study population was 42 students. Two classes met at different times during the semester. Students were 80% male and came from 14 different degree programs. Of the 14 different degree programs, four were outside the school of business. The students were 80% to 90% freshman and sophomore students. The students self-selected their class and the professor had no control over the students' selections of the class.

Twenty-five participants were included in the study; 21 (84%) were male and 4 (16%) were female. The minimum value for age was 18 and the maximum value was 21 ($M = 19.48$, $SD = 1.08$). Eight participants (33.3%) reported they had prior degrees and 16 (66.7%) did not. Five participants (22.7%) reported their most recent degree program completed or enrolled was business and 17 (77.3%) reported other.

The multivariate analysis of variance (MANOVA) reflected the number of dependent variables and the repeated measure of the pre- to postsurvey. Hinton (2004) noted some univariate analyses on the same data might result in possible Type I errors. The decision to replace t tests, a univariate analysis, with MANOVA strengthened study results and reduced Type I error. Reducing Type I errors provides a lower risk of overstating the results.

Using MANOVA required testing the data for normality. The test chosen for normality was the Kolmogorov-Smirnov test. The test is conservative and less stringent than other tests because of the small sample size.

MANOVA required additional testing on covariance and variance of homogeneity between groups. A conservative and less stringent test was Box's M test for covariance. A similar conservative and less stringent test for variances between groups was Levene's test.

PILOT STUDY

The pilot study with a sample of 13 students in related but different sections allowed subjects to provide responses on survey questions and to test data collection procedures. Student reactions on the survey led to minor changes in survey questions for clarity. Students completed a presurvey before the first simulation decision and a postsurvey afterwards. A small sample of students taking the survey replied on the focus group questions. Students indicated no changes necessary on focus group questions.

The pilot study revealed needed modification in planned data collection methods. The first change required assigning a random reference number to the student to track completing both the presimulation and postsimulation survey. Using a reference number maintained student anonymity and allowed flexibility when taking the survey both online and on paper. The new assignment protocol required the survey web site address and ID number be stapled to the first page of the survey. After survey completion, the student removed the stapled slip of paper and discarded the information. The procedure created flexibility in data collection. After students completed the handwritten survey, all responses were keyed into the computer survey at Survey Monkey to collect data from each participant.

In addition, pilot study participants noted the redundancy of demographic data on the postsimulation survey. After reviewing the postsimulation survey, removal of demographic data was an acceptable option. Removal of demographic questions on the postsimulation survey allowed students to concentrate on survey questions and shortened data collection time.

Thirteen participants were included in the pilot study; nine (69%) were male and 4 (31%) were female. The minimum value for age was 18 and the maximum value was 44 ($M = 23.77$, $SD = 8.26$). Three participants (23%) reported being freshman, three participants (23%) reported being sophomores and seven (54%) reported being juniors. Five participants (38%) had prior associate degrees in fields other than business or accounting. Three participants (23%)

were in a business degree program and ten (77%) were enrolled in degree programs other than business such as automotive technology, information systems, or equine sciences. Five students (38%) had prior coursework in accounting, three students (23%) had course work in introductory business, and one student (8%) had course work in introductory marketing. Eight students (62%) had prior management experience with four or more participants having experience in budgeting, hiring, or firing employees, overseeing projects, or financial responsibility.

Reliability and validity for both presimulation and postsimulation surveys was tested using Cronbach's alpha ($\alpha = .72$). An $\alpha > .70$ substantiated reasonable reliability in survey questions. The final survey ($\alpha = .90$) exceeded the minimum requirement for significance. After completing the pilot study, the study took place and results calculated to determine changes in students' views of management skills related to their future careers.

RESULTS

The purpose of the investigation was to determine the degree to which simulations (independent variable) changed students' views of management skills towards their future careers (dependent variable). The research method involved a quasi-experimental nonequivalent control-group design using a pre- and postsurvey instrument with a population of 42 students and a convenience sample of 25.

FINDINGS

The null hypothesis was that students' views of management skills and future careers demonstrated no more change after using a simulation. Results did not allow rejection of the null hypothesis. Students rated management skills important in both pre- and post-survey results. Focus groups indicated no change in their views of management skills; rather, the simulation solidified student views.

MANOVA was conducted to assess if the future variables (Plan, Organize, Lead, Control, and General Management) differed from presurvey to postsurvey. Preliminary analysis, a one-sample Kolmogorov-Smirnov test, revealed the variables were normally distributed ($p > .01$). The multivariate test was not significant, $F (5, 19) = 1.41$, $p = .26$ ($\eta^2 = .27$, Power $= .39$), which indicated combing Plan, Organize, Lead, Control, and General Management did not differ from presurvey to postsurvey. MANOVAs indicated no significant differences on the future variables from presurvey to postsurvey (see Table 2). Means and standard deviations are presented in Table 3 and indicated the importance of management variables (that is 4.00 or higher) in pre- and post survey results.

TABLE 2
MANOVA Assessment of Future Management Variables

ANOVA	F	Mean Squared Error	Sig.	η^2	Power
Plan	0.06	.14	.802	.003	.057
Org	3.00	.13	.097	.115	.382
Lead	0.31	.12	.583	.013	.083
Control	0.52	.64	.477	.022	.107
General Management	3.38	.26	.079	.128	.421

Note. df = 1, 24.

TABLE 3
Means and Standard Deviations on Future Management Topic Variables

Variables	Presurvey		Postsurvey	
	M	SD	M	SD
Plan	4.47	.53	4.17	.49
Org	4.01	.44	4.42	.37
Lead	4.37	.36	4.20	.76
Control	4.04	.79	4.20	.56
General Management	3.94	.63	4.17	.49

Note. N = 25.

TABLE 4
Means and Standard Deviation on Presurvey and Postsurvey Future Management Topic Items

	Presurvey		Postsurvey	
Future Items	M	SD	M	SD
Planning	4.48	0.51	4.48	0.59
Strategic Planning	4.36	0.81	4.28	0.54
Decision Making	4.56	0.58	4.52	0.59
Organizational	4.2	0.58	4.4	0.58
Culture and Structuring	3.64	0.64	3.76	0.72
Human Resource Management	4.2	0.71	4.36	0.57
Leadership	4.48	0.71	4.52	0.51
Individual Behavior	4.16	0.62	4.13	0.68
Teamwork	4.48	0.51	4.56	0.51
Understanding Stakeholders	3.56	0.82	4.04	0.68
Ethical Decision Making	4.32	0.8	4.36	0.64

Note. N = 25.

MANOVAs were proposed to assess if differences existed from presurvey to postsurvey on students' views of management skills and their future careers: Plan items (planning skills, strategic planning, and decision making), Org items (organizational skills, culture and structuring and human resource management), Lead items (leadership skills, understanding individual behavior, teamwork) and General Management items (understanding stakeholders and ethical decision making). Preliminary analyses, one-sample Kolmogorov-Smirnov tests, revealed many of the scores were not normally distributed ($p < .01$) and the variables did not allow square root or logarithmic transformations. Means and standard deviations occurred in Table 4 and indicated importance of management skills (that is 3.5 or higher) in pre- and post survey results.

A focus group question inquired about students' insights into changing views of management skills related to their future careers. Students classified based on prior and no prior management experience helped in analyzing students' insights. The simulation assisted with reinforcing what managers do in the real world. The simulation was helpful in understanding the classroom material, but did reflect reality of business.

The focus group with prior management experience indicated the simulation provided some learning as well as benefiting the course. However, the simulation did not create a realistic environment such as sub-contracting labor and focused on only the retail industry. One focus group member stated, "I would say it 100% benefits the course, but I don't really think it reflects what goes on." The focus group without prior management experience specified the simulation helped in understanding organizing skills and understanding decision making with consequences. One focus group member stated, "You get to see the results of your decisions as well as understanding the financial aspects of it, cause, and affect."

Test results indicated no rejection of the null hypothesis. No significant difference between presurvey and postsurvey responses existed. Focus groups indicated the simulation did not change their views of management skills. The simulation did reinforce and provide understanding of management skills.

CONCLUSIONS AND RECOMMENDATIONS

Students' views of management skills affecting future careers revealed no change in views after using a simulation. Lack of change may show little need for using simulations in the classroom. However, students indicated the importance of management skills in relation to their future careers and reinforcement of classroom material.

Results showed no change in students' views of management skills and their future careers but do not indicate removal or limitation of using simulations in the classroom. Focus group members, specifically participants without prior management experience, suggested learning occurs from simulations. Cook and Swift (2006) indicated students thought simulations were interesting and provided experience. In addition, both focus groups pointed out simulations reinforced classroom material, provided enjoyment and helped in learning management skills. Results were similar to Sauaia (2006) who noted that experiential learning provided a framework to analyze, assess and apply data to solving a problem. However, the focus group with prior management experience suggested the simulation used in the course was unrealistic when compared to their background in business. Lant (1989, as cited in Keys & Wolfe, 1990) who reported gaming provided similarity to real life had a contrary view to focus group respondents.

Participants indicated simulations were important and reinforced management skills used in business. Students ranked management skills (that is planning, organizing, leading and controlling) as important in both pre- and post survey. Similarly, Velthouse and Kandogan (2006) reported decision making and leadership by students as one of the top five management skills and organizing and planning ranked seventh and eleventh, respectively. American Management Association (2001) found teamwork as a managerial competency. In addition, Chang et al (2003) suggested that planning skills and cohesive teamwork was important.

Integrating simulations in the classroom creates an atmosphere to support student growth with practical experience in management needed in their future careers. College administrators who encourage using simulations by professors in the classroom will directly affect student performance through education and training. Although administrators may be uncomfortable with using simulations without a specific learning outcome, administrators must encourage using simulations to prepare students for the workplace to enable readiness to perform. Payne and Whittaker (2005) noted that knowledge without experience provided little help to business that need to remain competitive and hire employees that can have an immediate impact.

Students' readiness to perform comes from practical experience and gaining managerial skills. In addition, the ability to maintain a balance between a broad and narrow organizational perspective in the 21st century will be essential to success. The drive to help students gain a perspective and succeed in a future career will require administrators to trust teachers in the classroom to make the simulations work.

Facilitators need to use simulations to provide comprehension of business relationship in a protected environment. Instructors who offer secure environments encourage students to assume responsibility. College professors must find ways to integrate simulations with classroom material to develop confidence.

Professors may consider simulations non-traditional teaching methods. A need exists to balance (a) nontraditional teaching methods, (b) students' desire to learn with new technology, and (c) desire to gain practical skills. Instructors' use of new technologies helps create a more realistic learning environment resulting in improved marketable skills. Professors' views need revision to increase students' ability to handle complexity of the business world and gain marketable skills.

Recommendations for further study of student views on management skills include simulation effects and student preparation for future careers. Research by Feinstein and Cannon (2005) on meta-cognition, suggests further need in understanding students self-knowledge and perception of tasks when using simulations. Reasons underlying (a) management skill ranking, (b) effects of teaching methods, and (c) impact of the professor on students, needs additional clarification. An increase in student samples would improve and strengthen the validity and reliability of the survey instrument. Additional participants would help to generalize and reinforce or dispute findings.

Using graduate students in a study increases comparison data and provides generalizability of results. Participants with work experience would provide more depth in answering the current research questions and provide greater understanding to the focus group question because of the breadth and depth of prior education, and work experience.

On-line students provide an additional segment to help in generalizing results. A different delivery method would determine if the experiential format in a synchronous or asynchronous environment makes a difference in students' views of management skills. On-line students, who may be working in full-time positions, would provide increased reinforcement or argument of current results based on prior management experience. However, further replication with participants in an on-line environment creates unique issues. One issue is maintaining participants' privacy before, during, and after data collection. Focus must be on maintaining and protecting personal information of all participants from cyber criminals.

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