Bridging the Theory-Application Gap in Undergraduate Management Education

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This empirical study tested the existence of the theory-application gap in undergraduate management education based on professor beliefs about theory and application emphasis as well as reported behaviors on the use of theory and application techniques. Quantitative results confirm the existence of the gap by showing distinct differences in beliefs regarding appropriate emphasis and actual pedagogical techniques used. Qualitative results offer insights regarding the nature of the theory-application gap, as well as creative ways professors are bridging the gap with specially designed assignments and activities in the classroom.

INTRODUCTION

In management education, business schools are doing the work of preparing practitioners. "Ultimately, we need a synthesis of theory and practice if we are to prepare thoughtful practitioners" (Raelin, 2007: 495). Preparing thoughtful practitioners requires moving away from the apparent dichotomy of theory and practice and moving toward the synergistic combination of the two. Thoughtful practice is informed by the complements of theory and practice.

Ideally, theory and practice advance together and are connected by various bridges, such as, education, publications, and consulting. Higher education represents one significant bridge or linking mechanism between theory development and theory use (practice). While a great deal of attention in the literature has been devoted to the seriousness, causes, and potential solutions to the theory-application gap in management studies, most education-related solutions have been addressed at the graduate level.

This study examines what professors *believe* about the levels of theory and application for undergraduate management education and their *behaviors* regarding the teaching techniques they use in the classroom. The purpose of this research is two-fold. First, this study tests the existence of the theory-application gap in undergraduate management education based on professor beliefs (about appropriate emphasis on theory and application) and behaviors (as evidenced by the use of theory-oriented and application-oriented techniques). Second, this study explores the reasons for that gap and ways that professors are overcoming in their classrooms. It is hoped that the results of this study will create greater understanding of the theory application gap and foster stronger links between theory development and practice.

LITERATURE REVIEW

Theory and Practice

Management theory is best developed in relationship with management practice. Raelin argues that "by merging theory and practice we will end up with better theory, better practice, and better learning that will prepare us for both". He continues, "…one of theory's main purposes is to inform practice…theory loses much of its vitality if uninformed by reflection on practice" (2007: 495). Historically, this could be observed even as, in the early 20th century, a distinction between management practice and management thought began to emerge (Wren, 2004). During this time, management thought took on the separate role of collecting, organizing, testing, refining, and retaining the realities of management practice. Even though management thought became distinct from management practice, the two continued to be closely intertwined, with management practice often driving theory development. Koontz states, "no one could deny that the ultimate test of accuracy of management theory must be practice and management theory and science must be developed from reality" (1961: 184).

However, in more recent years, the gap between theory development and management practice has grown and become a cause for concern (Mintzberg, 2004; Pfeffer & Fong, 2003). This gap has been framed as a knowledge creation or production problem and a knowledge transfer or dissemination problem (Starkey & Madan, 2001; Rynes et al., 2001; Aram & Salipante, 2003; Van de Ven, 2006; Wren et al., 2007). Pettigrew's (2001) numerous "double hurdles," including scholarly quality and relevance, focus on the complexity of addressing simultaneously knowledge production and engagement with knowledge users.

Solutions to this gap problem have focused on the circular relationship or linkages between research and practice (Duncan, 1974; Hargadon, 1998: Pettigrew, 2001; Pfeffer & Fong, 2003; Weatherbee, 2008, Burke & Rau, 2010; Hughes et al., 2011). This relationship can be described as a number of players (managers, researchers, professors, and students) who are connected by various other players (higher education, original research, academic journals, trade journals, consulting firms, training and development, graduate education) . Solutions with an active, practical focus have been explored, such as, the use of alliances and networks (Osborn & Hagedoorn, 1997), research conducted inside organizations (Rynes et al., 1999), practice-based learning (Raelin, 2007), simulation games with case studies (Rompho, 2011), classroom research (Loyd et al., 2005), developing original business or marketing plans (Bingham & Quigley, 1991), project-based learning (Steger et al., 2011), real-time case studies (Theroux & Kilbane, 2004; Theroux, 2009), case studies and computer simulations (Reid & Anderson, 2012), and the use of teams to integrate science and practice (Offerman & Spiros, 2001). These various techniques represent effort to strengthen the linking mechanisms and relationship of theory generation and dissemination.

This study focuses specifically on the management education link. Academics in management education provide an important bridging role for knowledge creation and dissemination as "knowledge brokers" (Hargadon, 1998; Starkey and Madan, 2001; Wren et al., 2007). Van de Ven and Johnson's (2006) concept of engaged scholarship suggest that in the management classroom, the professor has the opportunity to connect theory and application in essential ways that help prepare students for more effective work in management.

A look at the relatively brief history of management education in the U.S. shows that the pendulum tends to swing to and from a practice focus and an academic focus (Vermeulen, 2005; Wren et al., 1994). That is, management education has a history of emphasizing rigor at the expense of relevance, or vice-versa. Most recently, many critics of business education, particularly at the professional and graduate level, were of the opinion that the pendulum had swung too far in the direction of rigorous theory, to the neglect of application (Pfeffer & Fong, 2003; Bennis & O'Toole, 2005; Mintzberg, 2004).

This study, however, draws on the work of individuals who brought the discussion to the undergraduate level. Given the sheer quantity of management students (managers-to-be) graduating each year and entering the work force, it is surprising that so few studies have focused exclusively on the undergraduate level. For example, according to the U.S. Department of Education, of the 1,485,000 bachelor's degrees conferred in 2005-06, the largest numbers of degrees were conferred in the field of

business with 318,000 degrees, of which more than half were management related. For the same time period, a total of 148,000 business degrees were conferred for Master's and Doctor's degrees combined (Digest of Education Statistics, 2007). Overall, the bulk of management education is at the introductory or undergraduate levels (Weatherbee, 2008). These statistics provide compelling evidence of a need for this study. It is encouraging to see some promote the idea that professors do make a significant impact on undergraduates (Carter, 2008) and that the undergraduate classroom is one of the most important forums for disseminating research results (Andrew & Frost, 1997). It is assumed, or at least hoped, that the results of rigorous research would find its way into the classroom and eventually into the minds of practitioners, via graduates in the workplace.

Hypotheses

Though much attention in the literature has been on graduate level business education, the longitudinal work of Wren et al. (1980, 1994, 2007) highlights undergraduate management education. The authors assessed Academy of Management member professors' attitudes towards the balance of theory and application in undergraduate business management education and found a distinct trend towards more application in 1989 compared to 1977. But the 2005 study indicated a shift back towards theory, supporting the view that management education is more focused on theory than application. Interestingly, from 1989 to 2005, the findings also revealed an increased use of pedagogical techniques that are more application-oriented. The authors noted the "*intriguing paradox* of the simultaneous trends of increasing emphasis on theory and application-oriented techniques used" (Wren et al, 2007: 488).

While the literature and conventional wisdom show a distinctly perceived theory-application gap, the Wren et al. (1980, 1994, 2007) results suggest the hopeful possibility of high theory and high application. This intriguing paradox provides the inspiration and impetus for this study. Indeed, personal communication (2006, 2008) with Dr. Daniel Wren provided specific support and encouragement for continuing this line of research and inquiry.

Based on the preceding literature review, four hypotheses emerged for this study. The first hypothesis compares professor beliefs (propositions held, but not necessarily acted upon as behaviors) about appropriate levels of emphasis on theory and levels of emphasis on application. Consistent with Wren's study, five common undergraduate management courses (principles of management, organizational behavior, human resource management, production/operations management, and business strategy) were selected for this study.

> *Hypothesis 1: For each undergraduate management course, there is no statistically significant difference between professor theory emphasis and application emphasis.*

In the studies by Wren and his colleagues (1980, 1994, 2007), researchers found an increase in the use of application-oriented techniques as defined by the researchers. The researchers provided a list of commonly used application-oriented pedagogical techniques, and their analysis captured the relative change over time of respondent's use of those application-oriented techniques. This study used the same list of pedagogical techniques which includes lecture on basic concepts, student research projects, print/electronic media, off-campus assignments, professor experience, computer simulations, experiential exercises, guest speakers, case studies, and student work experience. However, in contrast to the prior studies, this study asked respondents first to categorize the list of pedagogical techniques as either theory-oriented or application-oriented. Then respondents were asked to indicate how frequently they used those techniques. While the prior studies focused on the relative increase or decrease (over time) in the use of only application-oriented techniques, this study sought to compare the reported use of theory-oriented and application-oriented techniques. The second hypothesis seeks to discover frequency of theory-oriented techniques vs. application-oriented techniques. It is focused on professor behaviors (actual use of techniques) rather than beliefs about appropriate emphasis. The same five management courses were tested.

Hypothesis 2: For each undergraduate management course, there is no statistically significant difference between professor usage of theory techniques and usage of application techniques.

The third and fourth hypotheses relate to the possible connection between professor beliefs about emphasis and professor use (behavior) of particular pedagogical techniques. This study explores the possible existence of a connection between belief (emphasis on theory or emphasis) and behaviors (the use of theory-oriented or application-oriented techniques). One would expect (hope) that professor behaviors would reflect professor beliefs. The relationships between professor beliefs about theory emphasis and theory pedagogical techniques usage were examined for the five management courses in Hypothesis 3. Likewise, application emphasis and application pedagogical techniques usage were examined according to Hypothesis 4.

Hypothesis 3: For each undergraduate management course, there is no statistically significant difference between professor theory emphasis and theory-oriented pedagogical techniques used.

Hypothesis 4: For each undergraduate management course, there is no statistically significant difference between professor application emphasis and application-oriented pedagogical techniques used.

METHODOLOGY

This research was a mixed-methods study using primary data from an online survey and follow-up one-on-one interviews with professors who teach undergraduate management courses.

The population for this study was professors teaching undergraduate management courses in schools in the Council of Independent Colleges (CIC). As a group, the CIC schools that attend to teaching, that represent a range of accreditations, and that hold a diverse range of mission. Professors who regularly teach undergraduate management courses were invited to participate in an online survey. Participation was completely voluntary and anonymous. A total of 239 responses were collected, representing a 22% response rate. Among the respondents, 61% had earned PhD degrees, 13% had DBA degrees, 13% had MBA degrees, and 13% had other degrees (EdD, JD, etc.). Sixty percent of the respondents were male and 40% were female. More in-depth information was gathered from nine individuals who, after completing the online survey, expressed interest in the study and agreed to participate in the interview phase. The interview questionnaire was developed with open-ended questions regarding the theory-application gap and results from the online survey.

Online Survey Method and Instrument

The online survey consisted of nine questions, plus demographic information. The first two questions asked for professor beliefs regarding the appropriate the level of theory emphasis and the appropriate level of application emphasis in commonly offered undergraduate management courses, including, Principles of Management (PM), Organizational Behavior (OB), Human Resources Management (HR), Production/Operations Management (PO), and Strategic Management (SM). This study classified pedagogical techniques as theory-oriented or application-oriented, based on professor responses to question #3 which asked professors to rate pedagogical techniques with 1 being "very theory focused" and 7 being "very application focused." To determine professor behavior using those pedagogical techniques, questions #4-8 asked participants to report how frequently they used the techniques in each of the management courses listed. The remainder of the survey collected data on the professor (questions #9-19), the degree program (questions #20-22), and the institution (questions #23-25).

Interview Method and Instrument

After submitting their online surveys, nine individuals volunteered to participate in the follow-up interviews. Thus, the interviewees were a convenience sample drawn from individuals who had completed the online survey. Interviewees were sent a copy of the original online survey and results from that survey. They were given a short list of interview questions to expect during the telephone interview.

Participants were interviewed, by phone, using the following general format: (1) personal introductions; (2) introduction to the study and reminder of the online survey; (3) interviewees' initial comments on the theory-application gap; (4) discussion of the survey results (specifically relating to hypotheses 1-4) using tabular results and graphs; (5) interviewees' concerns about constraints; (6) interviewees' practical solutions; (7) interviewees' final comments on the role of undergraduate management education in bridging the theory/application gap.

Unlike the anonymity of the online survey, the interviews were conducted on a personal level. Basic introductions revealed that the 4 men and 5 women ranged in age from the upper-twenties to late-fifties. All of them had previous business experience from a variety of industries. They all held doctorates or were ABD. The interviewees represented nine different CIC schools with varying historical roots and some with religious affiliations. All nine of the universities represented are regionally accredited, and two are AACSB accredited. The individuals specifically expressed personal and institutional commitments to hands-on learning, service learning, academic rigor, personal attention, social justice, diversity, study abroad, and religious service. All of them expressed a keen interest in the effective teaching of undergraduate management courses.

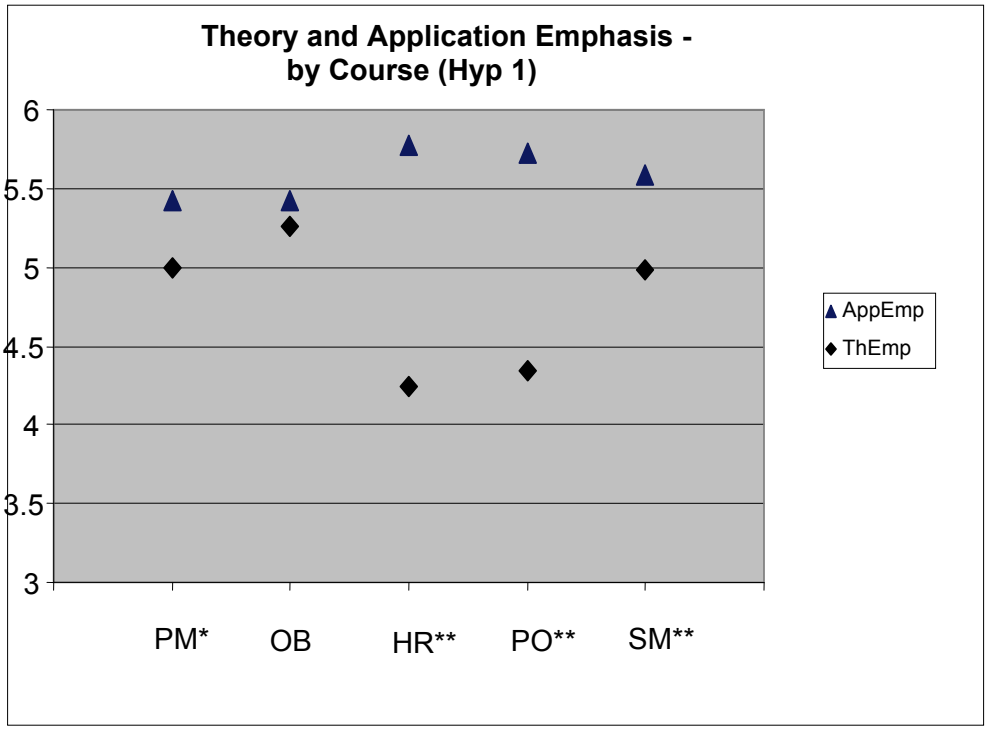
RESULTS

Survey Results

The results for hypotheses 1-4 were tested using paired samples t-tests comparing the differences in the means of two variables for each of the five management courses, including Principles of Management (PM), Organizational Behavior (OB), Human Resources Management (HR), Production/Operations Management (PO), and Strategic Management (SM). Paired sample t-test results are reported as significant at the .05 level.

Hypothesis 1 tested the difference between professor beliefs regarding the appropriate emphasis on theory (ThEmp) and the appropriate emphasis on application (AppEmp). The results show that management professors sampled believe in a greater emphasis on application than on theory in all five courses. Based on the paired samples t-test, the variable means are different to a significant level for Principles of Management and to a highly significant level for Human Resources Management, Production Operations Management, and Strategic Management. For Organizational Behavior, there is not a significant difference. Hypothesis 1 is rejected for four of the courses (PM, HR, PO, and SM), but it is not rejected for OB. The differences in means for each course are illustrated graphically in the following figure.

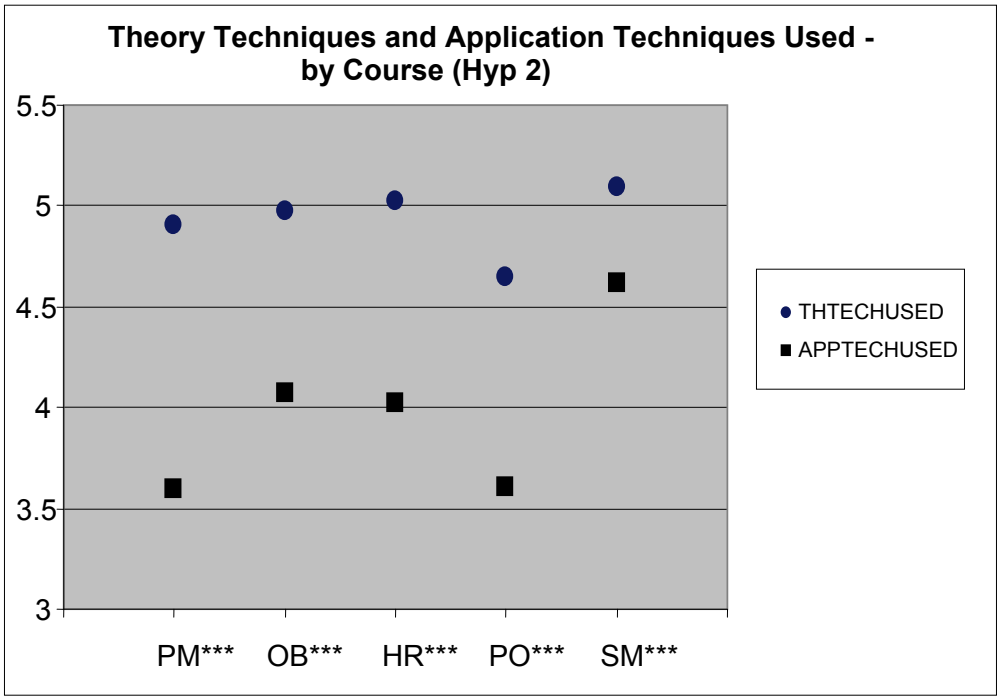
FIGURE 1
THEORY AND APPLICATION EMPHASIS



*** Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 2 tested the difference between the frequency of use of theory-oriented (THTECHUSED) and application-oriented (APPTECHUSED) pedagogical techniques in each of the five courses. Prior to reporting their use of the pedagogical techniques, professors classified each technique as either a theory-oriented technique or an application-oriented technique. Respondents were asked to rate each of the ten pedagogical techniques on a scale from 1 -7 with 1 being "very theory focused" and 7 being "very application focused." Based on the means and factor analysis, the results showed a natural break into two categories. Theory-oriented techniques included lecture on basic concepts, the use of student research projects, print/electronic media, off-campus assignments, and professor experience. Application-oriented techniques included the use of computer simulations, experiential exercises, guest speakers, case studies, and student work experience. Regarding Hypothesis 2, professors report using theory techniques more frequently than application techniques for all five courses. Based on the paired samples t-test, the variable means are significantly different for all five courses, and Hypothesis 2 is rejected for all five of the courses (PM, OB, HR, PO, and SM). The differences in means for each course are illustrated graphically in the following figure.

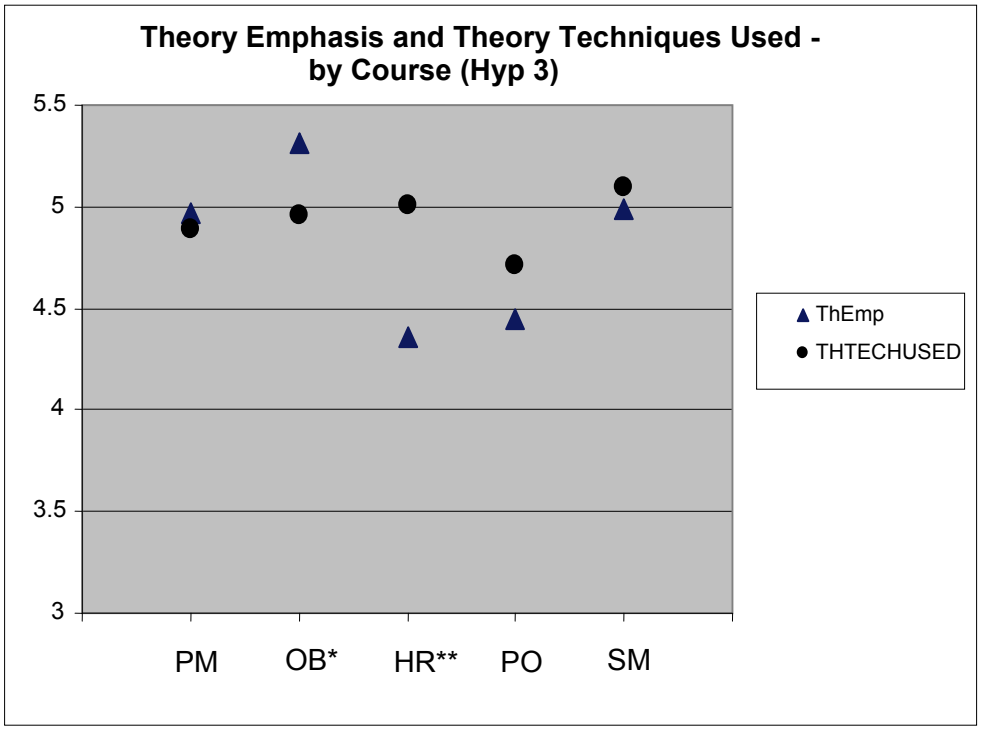
FIGURE 2
THEORY TECHNIQUES AND APPLICATION TECHNIQUES USED



*** Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 3 tested the difference between professor beliefs about the appropriate emphasis on theory (ThEmp) and the frequency with which they use the five theory techniques (THTECHUSED) in each of the five courses. Based on the paired sample t-test, the variable means are different at a significant level for the Organizational Behavior course and at a highly significant level for the Human Resources Management course. For Principles of Management, Production Operations Management, and Strategic Management, there is not a significant difference in the means of theory emphasis and theory techniques used. Hypothesis 3 is rejected for OB and HR and is not rejected for the PM, PO, and SM. The differences in means for each course are illustrated graphically in the following figure.

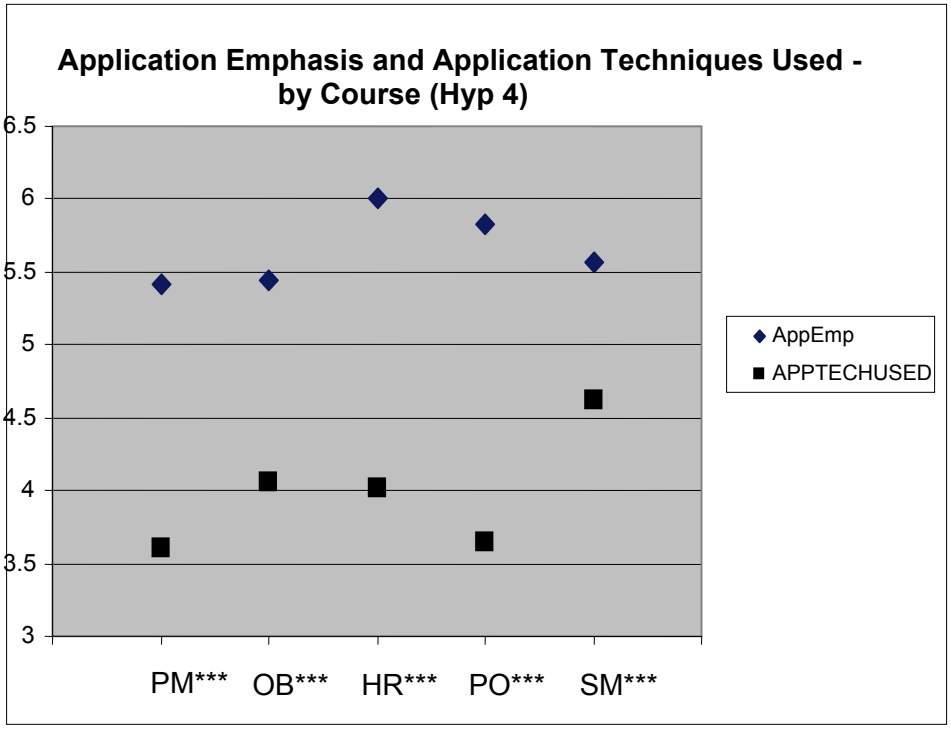
FIGURE 3
THEORY EMPHASIS AND THEORY TECHNIQUES USED



*** Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 4 tested the difference between professor beliefs about the appropriate emphasis on application (AppEmp) and the frequency with which they use the five application techniques (APPTECHUSED) in each of the five courses. Based on the paired samples t-test, the variable means are significantly different for all five courses and Hypothesis 4 is rejected for all five courses (PM, OB, HR, PO, and SM). The differences in means for each course are illustrated graphically in the following figure.

FIGURE 4
APPLICATION EMPHASIS AND APPLICATION TECHNIQUES USED



*** Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Summary of Survey Results

The survey results, detailed in Appendix 1, show that a gap does exist between professors' beliefs about the appropriate emphasis on theory and application and professors' behavior in using the pedagogical techniques. Even though professors indicated the belief that applications should be emphasized more than theory (Hyp 1), theory-oriented techniques reportedly are used more frequently than the application-oriented techniques in all five courses tested (Hyp 2). Furthermore, professors' belief in the appropriate level of emphasis on application is higher than their actual use of application-oriented techniques (Hyp 4).

Interview Results

Following the survey, one-on-one interviews were arranged to discuss the results from the survey. The interviewees concurred that the theory-application gap exists, that it is a problem in undergraduate management studies, and that it matters. Even so, those interviewed expressed a clear conviction that the gap can and should be overcome.

Following initial comments, professors were asked to discuss the results from the hypotheses testing. No one expressed surprise at the results of Hypothesis 1 which showed professors to believe in a greater emphasis on application than theory in all courses. Hypothesis 2 generated some discussion regarding the pedagogical technique classifications; however, few comments emerged regarding the results from Hypothesis 2. Theory-oriented techniques are simply more commonly used than application techniques. Hypothesis 3 did not generate much discussion, probably because it is predictable that there would be little gap between belief about appropriate theory emphasis and behaviors in using theory techniques. However, Hypothesis 4 generated a number of responses, such as, "WOW!" and "Yes, big difference!"

In response to the graph for Hypothesis 4, one interviewee stated, "Here is the crux of the study - intentions versus actions."

Though respondents were unanimous in their conviction that a serious theory-application gap exists, they framed it in various ways. Three primary themes emerged during the interviews which shed light on the interviewees' perspective of the theory-application gap. The first theme is one of *perspectives* or viewpoints. From the interviews, three specific, sometimes competing, perspectives emerged: the student perspective, the professor perspective, and the potential employer perspective. Even though professors were reporting on their beliefs and behaviors in the classroom, they recognize that students and future employers have a different perspective and likely different goals for the undergraduate experience. The second theme was one of *knowing it*. That is, how does one know or learn theory and how does one know or learn to apply it? On the one hand, "pure theory cannot be digested" (by undergraduates) and "real application - real decision making in a real company - is not allowed." As one interviewee stated (and others concurred), "one cannot fully understand theory until one has applied it." Making explicit connections between theory and application for the students, pressing students to recall fundamentals learned in previous courses, and moving students to tacit understanding through application were consistent themes in the interviews. The third theme was one of *preparedness*. Professors interviewed were unanimous in their concern for preparing students for life beyond college, particularly the work lives of graduates. One interviewee stated, "A prepared student is one who is confidently ready to meet the expectations of employers."

In addition to commenting on the theory-application gap, interviewees were asked to identify constraints and possible solutions. All of them indicated early in the interview that they believe a serious gap exists, and their answers reflect personal, institutional and cultural constraints. By far, the most common constraint identified was "time." Like most working professionals, professors have to prioritize and "spend time on what they are evaluated on." Additional comments include the fact that there are not really very many "authentic practice opportunities." After all, who will trust 20-21 year olds with significant business decisions? Other constraints fell generally into a category of "fear and control," suggesting that it is a little frightening to place undergraduates in a 'real situation' where the professor cannot control the process or outcomes. University systems and resources apparently support greater use of theory-techniques, which are seen as more accessible, familiar, and less time consuming. Application techniques require more effort and time to design, use, and grade, and the extra work does not immediately appear worth it due to institutional requirements and reward systems.

In spite of those constraints, professors described specific methodologies they employ to bridge the theory-application gap. Their list includes meta-assignments (combining several pedagogical techniques), service learning, project based assignments, field experience learning (international), case studies with one page analysis, simulations, internships, real client consulting (business plans, interview/selection processes, marketing plans, web-site development, recommendations to management), internships for undergraduates in companies with graduate students, and progressive, current events projects that last the entire semester. Toward the end of the interview, professors were asked, "Does undergraduate management education play a role in bridging the theory-application gap, and how well are we as educators fulfilling that role?" Interviewees responded to this question in the affirmative but with some varied perspective. Yes, there is a role. And, yes, we are gradually getting better at it (connecting theory and application, preparing students, etc), particularly as we persist with those mega-assignments which target theory and application.

Finally, interviewees were asked to respond to this question, "Rather than a forced choice between theory and application, do you think it is possible to be "high" on both theory and application?" Those most convinced that "high theory/high application" is desirable and conceivable enthusiastically reiterated their favored means for accomplishing it. Apparently they believe it can and should be done. The collective wisdom of the respondents suggests that theory alone is worth very little (even worthless) and that application alone is just a collection of stories which are easily forgotten and are, in fact, never applied.

DISCUSSION

At least three significant findings emerge from this study. First, the results from the survey and the interviews indicate that professors believe both theory and application should be emphasized at the undergraduate level, with greater emphasis on application (hypothesis 1). This is a significant, stand-alone finding relating to the theory-application gap. The belief that both theory and application should be emphasized, demonstrates potential for the "high-high" scenario of emphasizing both simultaneously. Second, however, the survey results (hypotheses 2 and 4) show a greater use of theory techniques (compared to theory techniques) and a higher belief in application emphasis (compared to the use of application techniques). This is troubling, but not surprising, given the nature of the theory-application gap and the constraints explained through the interviews. Third, the majority of those interviewed described their strong belief in holistic management education as well as their efforts to use both application and theory techniques. Interviewees shared specific classroom assignments they use to draw together theory and application. From the interviews, one gets a hopeful glimpse of the potential "high-high" combination of theory and application. Taken together, the survey results and interview results simultaneously confirm the existence of the theory-application gap and methods for overcoming it. The results of this study explain, in part, the Wren et al. (2007) paradox of higher theory emphasis and increasing use of application techniques, but only when the professor is deliberate and intentional in creating assignments that develop both.

IMPLICATIONS

The results of this study have practical and methodological implications. Practically, this study suggests that the "solution" to the theory-application gap is an increased use of highly integrative exercises and assignments, which apparently is a priority for professors in this sample. Professors need to take the time to design, utilize, and grade more complex assignments that integrate theory and practice. Additionally, professors can find ways to declare explicitly to their undergraduate students that theory and application are complementary and not mutually exclusive. Deans and other administrators need to provide support for exploring alternative style assignments and activities. Departments, schools, and institutions need to continue to increase the available opportunities for students to gain hands-on experience with internships, international study assignments, and service learning projects. Curriculum refinements such as these can potentially affect students who, in turn, will graduate and impact the workforce. It is hoped that management education impacts management practice in a positive way. It follows that a stronger link between theory and application in management education can strengthen the link between theory and application in practice. Thus, on a practical level, the results of this study could influence professors, deans, administrators, institutions, students, and potential employers.

Methodologically, this study makes a contribution by using both quantitative and qualitative methodologies. The quantitative results from the survey give an objective view and give statistical supporting evidence of the theory-application gap. The qualitative results from the interviews offer explanations as to why professors behave as they do and how they might be able to overcome the gap. Overall, using a combination of quantitative and qualitative methodologies in one study generates a more complete picture of these complex topics than either methodology can provide alone.

LIMITATIONS AND FURTHER STUDY

At least three limitations in this study should be noted. First, this study is limited to professors at member schools in the Council of Independent Colleges (CIC) and therefore the results cannot be compared directly to prior studies of Wren et al. (1980, 1994, and 2007). Second, while prior studies (most notably the AACSB study in 1988) may have had a research bias in the sample, this population sample may contain a teaching bias. The CIC schools are distinctly independent from state support, and the lack of federal funds for research would impact the research emphasis at these schools. Third, there

are likely other independent and/or intervening variables, such as class size, which affect on what can or cannot be accomplished in the classroom.

Based on the results of this study, many options and opportunities exist for further research. The three themes (perspectives, knowing it, and preparedness) highlighted in the interview responses provide appropriate directions for future study. While this study focuses on the professor viewpoint, further study could compare professor, student, and employer perspectives on theory and application. Second, further study regarding the employers' view could also promote understanding of preparedness for students as they graduate and enter the workforce. Third, the theme of "knowing it" could be studied further particularly in conjunction with explicit and tacit knowledge literature. Additionally, a number of various correlations and causal relationships could be explored. For example, the individual demographics, institutional factors, and other situational variables (class size, changing educational environment, etc.) could be explored to see what affects the theory-application balance.

CONCLUSION

According to its purpose, this research highlights significant theory-application relationships which exist at the level of undergraduate management education. As stated in the introduction to this study, business schools are doing the work of preparing practitioners. Preparing thoughtful practitioners requires moving away from the apparent dichotomy of theory and practice and moving toward the synergistic combination of the two.

This mixed-methods research produced quantitative results showing a distinct gap between theory and application emphasis, between theory techniques used and application techniques used, and between application emphasis and application techniques used. The qualitative interview phase of this research produced several valuable insights regarding the nature of the theory-application gap in undergraduate management education, the constraints that tend to prevent bridging the gap, and the various creative ways professors are bridging the gap between theory and application in their classrooms. Collectively, the quantitative and qualitative results answered many of the "what", "why", and "how" questions of theory and application.

The results of this study suggest that being "high" on both theory and application at the undergraduate level is possible and necessary (though not necessarily prevalent in practice) for preparing students for their work life in business management.

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APPENDIX 1

SUMMARY OF RESULTS

SUMMARY OF RESULTS – ONLINE SURVEY						
HYPOTHESIS 1-4: CORRELATIONS & PAIRED SAMPLES T-TESTS						
		Paired Differences (95% confidence)				
Hypothesis and Course	**Correl -ation**	**Mean**	**Std Dev**	**t**	**df**	**Sig (2-tailed)**
Hyp 1 - Theory Emphasis vs Application Emphasis						
Principles of Management (PM)	-0.052	-0.419	2.144	-2.470	159	0.015*
Organizational Behavior (OB)	0.139	-0.162	1.906	-1.035	147	0.302
Human Resource Management (HR)	.245**	-1.54	1.732	-9.906	123	0.000**
Production Ops Management (PO)	.233*	-1.375	1.743	-7.731	95	0.000**
Strategic Management (SM)	.211*	-0.603	1.830	-3.772	130	0.000**
Hyp 2 - Theory Techniques Used vs Application Techniques Used						
Principles of Management (PM)	.248**	1.30	1.311	12.103	147	0.000***
Organizational Behavior (OB)	.349**	0.90	1.201	8.496	127	0.000***
Human Resource Management (HR)	.261**	1.00	1.292	7.829	101	0.000***
Production Ops Management (PO)	.367**	1.04	1.376	6.271	68	0.000***
Strategic Management (SM)	.369**	0.47	1.218	4.265	121	0.000***
Hyp 3 - Theory Emphasis vs Theory Techniques Used						
Principles of Management (PM)	.083	0.08	1.748	0.569	145	0.570
Organizational Behavior (OB)	.266**	0.35	1.464	2.730	126	0.007*
Human Resource Management (HR)	.258**	-.66	1.510	-4.366	100	.000**
Production Ops Management (PO)	.287*	-0.25	1.513	-1.326	65	0.189
Strategic Management (SM)	.263**	-0.11	1.544	-0.775	119	0.440
Hyp 4 - Application Emphasis vs Application Techniques Used						
Principles of Management (PM)	.452**	1.82	1.386	15.859	145	0.000***
Organizational Behavior (OB)	.320**	1.38	1.541	10.078	126	0.000***
Human Resource Management (HR)	.100	1.98	1.529	12.946	99	0.000***
Production Ops Management (PO)	.221	2.19	1.518	11.603	64	0.000***
Strategic Management (SM)	.358**	.948	1.516	6.876	120	0.000***

*** Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).