

Theory and Applications in Management Pedagogy: An Empirical Study

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This study investigates the theory/applications orientation in management courses, the factors which influence this balance, and the techniques used to bring applications into the classroom. Overall, the findings indicate a balance between theory and applications. However, the theory/applications orientation was influenced by a number of factors: the subject matter, the level of instruction, the age, rank, and managerial experience of the instructor, and the size of the institution. Substantial differences were found between graduate and undergraduate levels of instruction.

Some critics state that management pedagogy puts far too much emphasis on theory and far too little emphasis on management practice. Critics claim that management professors are theorizing while managers are practicing with a minimum of interference from one another (e.g. Grayson, 1973; Ryan, 1977; Ford, 1978; *Business Week*, 1979). Moan (1975) notes a "real" gap between theory and practice in which the teacher-researcher is losing sight of the real-world problems facing the practicing manager. McGuire (1972) notes a move away from practice to theory, and Ference and Ritti (1970) found little "reality training" in MBA programs. Livingston's "myth" of management education holds that highly educated persons fail to achieve success in management because "they do not learn from their formal education what they need to know to perform their jobs effectively" (1971, p. 82).

Some critics have offered explanations for this gap. Hekimian (1969)

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notes that early business schools emphasized practice but, to achieve “academic respectability,” began emphasizing academic research and theory building. Grayson (1973) points to an influx of Ph.D’s from “non-business” oriented disciplines and contends that these professors chose an academic life in preference to an “action” oriented one where they would have to implement their ideas. Mintzberg states “the fact is that in general we know very little about teaching the managerial roles . . . much of this [management] theory deals, not in the job of managing *per se*, but with the underlying disciplines—economics, psychology, and mathematics” (1973, p. 186). Mintzberg (1975; 1976) further charges that business schools do a poor job of training managers because professors are little interested in “the reality of organizational life” and teach “theories of mathematics, economics, and psychology as ends in themselves” (1976, p. 58).

Empirical studies lend general support to the idea of a gap between the classroom and managerial practice. Churchman (1964) reported that recommendations of management scientists were not being carried out by practicing managers. Green, Newsom, and Jones (1977) found a low use of the quantitative techniques taught in P/OM courses by business practitioners even when they had knowledge of those techniques. Berry, Watson and Greenwood (1978) found little agreement between academicians and practitioners with respect to what should be taught in the introductory P/OM course. Duncan (1974) noted considerable disagreement between academicians and managers with respect to various aspects of the knowledge utilization process. Dunnette and Brown (1968) concluded that the behavioral sciences have had little impact on the practice of management.

The purpose of this study was to determine empirically: (1) the emphasis that teachers of management believed should be given theory versus its practical applications; (2) the course, instructor, and institutional factors that might influence this balance; and (3) the factors which influence the use of various pedagogical techniques that are used in bringing applications into the classroom.

Method

Population

The population selected for study was the Academy of Management membership on the assumption that it was the most representative group of those who teach and do research in management at the university level. The survey instrument was pre-tested on a group of management teachers, revised, and mailed first-class to 2,775 U.S. and Canadian members of the Academy of Management. A postage paid, pre-addressed return envelope was provided. While anonymity was promised, the questionnaires were numbered so that a follow-up could be made on the non-respondents sixty days after the original mail-out.

The total number of usable responses received from both mailings was 1,243 for a 44.8% rate of return.

The mean age of the respondents was 43.5 and the median age was 41.5 years. The highest degrees obtained were Ph.D., 82%; master's, 16%; and bachelor's, 2%. With respect to recency of degrees, 38% were received in the past 5 years and 67% within the past 10 years. The mean for year of degree was 1967.3 and the median was 1970.5. As to rank, 33% were full professors; 29% were associate professors; 26% were assistant professors; 6% were instructors; and 6% were graduate assistants. Ninety-five percent were male; 5% were female.

To check for a possible non-response bias, random samples of 100 were drawn from the respondents and 100 from the non-respondents. Information on rank, degree level, year of degree, degree fields, type of institution (public or private university or college), sex, and total years of managerial experience were then taken for each from the AACSB *Faculty Directory*. When the data for each group were analyzed, the only significant difference found was a slight tendency for more non-respondents to be associated with private universities and colleges. No significant differences were found on the other factors, leading the researchers to conclude that the non-respondents did not vary greatly from those who did respond, with the reservation that the findings are somewhat more heavily influenced by responses from members of public institutions than is typical of the Academy of Management membership.

Measures

Data on management professors' teaching orientation were obtained from responses to the question, "What do you think is the appropriate balance between theoretical concepts and practical applications, to obtain maximum value from the following courses at the undergraduate and graduate levels?" Respondents were given a list of 10 courses commonly found in management: Principles, Production/Operations Management, Organization Theory, Business Policy, Operations Research, Labor Relations, Organizational Behavior, Communications/Information Systems, Personnel Management, and Business and Society. A 7-point scale was provided which ranged from 1 ("almost all theory"), to 4 ("equal emphasis"), to 7 ("almost all application"). Respondents were asked to check the value which indicated their belief about the appropriate balance for each course at the undergraduate and graduate levels. A theory/applications orientation index was computed for both graduate and undergraduate courses by calculating the mean score for all courses at each level. Both indices were highly reliable (coefficient alpha = .90 for the undergraduate application orientation and .92 for graduate application orientation), and were only moderately correlated with each other ($r = .14$, $p < .01$). Data were collected also on managerial experience, non-managerial experience, rank, degree field of highest

degree, age, size of the institution where they were employed, and the ratio of graduate as opposed to undergraduate courses taught.

The respondents were also asked to report what devices they used to bring practical applications into their teaching. The respondents were then given some commonly used techniques: (1) personal experiences; (2) cases they have written; (3) cases written by others; (4) experiences of students; (5) computer simulations; (6) experiential exercises; (7) audio-visual training materials; and (8) "other" which provided a space for respondents to write in other techniques. A 7-point scale was provided which ranged from 1 ("seldom or never") to 7 ("a great deal"). Respondents were asked to select a value on the scale which reflected the extent to which they used these means of bringing applications into teaching.

Results and Discussion

The Balance between Theory and Applications

Table 1 shows the relative emphasis the respondents placed on the balance between theoretical concepts and practical applications. Respondents placed a greater emphasis on theory in graduate courses than in undergraduate courses. Further, all courses remained in the same rank order at both the undergraduate and the graduate levels with respect to the degree of emphasis on theory compared to applications.

With "4" as the mid-point on the scale where theory and applications receive equal emphasis, the data show that undergraduate courses receive more emphasis on applications (mean = 4.247); graduate courses are somewhat less applications oriented (mean = 4.016); while there is an overall tendency toward applications (mean = 4.133). A two-way analysis of variance indicates significant differences between courses ($F = 253.05$,

Table 1
The Theory/Applications Orientation in
Selected Management Courses^a
(Means^b)

Course/Subject Matter	Undergraduate	Graduate
Organization Theory	3.355	3.099
Principles of Management	3.862	3.591
Organizational Behavior	4.025	3.750
Operations Research	4.078	3.876
Business and Society	4.216	4.056
Communication/Information Systems	4.344	4.108
Production/Operations Management	4.443	4.133
Personnel Management	4.639	4.379
Labor Relations	4.690	4.518
Business Policy	4.855	4.698

^aA lower value reflects more emphasis on theory, while a higher value reflects more emphasis on applications.

^bTwo way analysis of variance indicates significant differences between courses ($F = 253.05$, $p < .0001$) and between graduate and undergraduate levels ($F = 115.32$, $p < .0001$).

$p < .0001$), and between graduate and undergraduate levels of instruction ($F = 115.32$, $p < .0001$). These data suggest that charges regarding a “theoretical bias” in academe are overstated. The data do support the notion that graduate courses tend toward being somewhat more theoretical. More importantly, the findings indicate that one should distinguish between graduate and undergraduate education when discussing management theory and practice.

In addition, a distinction must be made between and among various subject areas (courses). Shifts in emphasis toward more theory in graduate levels compared with the undergraduate level of the same course are most apparent in Production/Operations Management, Organizational Behavior, Principles, Personnel, and Organization Theory. There was much less change in emphasis at the undergraduate and graduate levels in Business Policy, Business and Society, Labor Relations, and Operations Research. These findings indicate that management professors change their theory-applications emphasis, depending upon the subject matter being presented and upon the level of the course.

In brief, the theory-applications balance in management pedagogy is not monolithic. There are course specific and instructional level specific factors which must be considered. In general, management professors perceive that there should be a balance between theoretical concepts and practical applications, with a slight emphasis on applications.

Factors Influencing the Theory/Applications Orientation

Multiple regression analysis was used to identify what instructor and/or institutional factors might influence the theory/applications balance for undergraduate and for graduate students. For undergraduates, Table 2 shows the factors which relate to the theory/applications orientation. Only two (size of institution and academic rank) were statistically significant. Beta values indicate that larger schools were more applications oriented at the undergraduate level ($p < .01$). Beta values indicate that the higher the academic rank, the greater the emphasis on theory at the undergraduate level ($p < .05$). Variables that were not significantly related were age, degree field (whether from business schools or outside of the business school),¹ experience as a manager in academe, managerial experience outside of academe, extent of graduate teaching, and age at which the highest degree was obtained.

These data suggest the difficulty of predicting a theory/applications orientation at the undergraduate level. The multiple R for all factors was

¹The 51 degree fields reported were categorized by the researchers into business, “middle ground” (i.e. the degree could have been granted in a business school or in another segment of a university), and non-business. For details, see D. A. Wren, R. M. Atherton, and L. K. Michaelson, “The Managerial Experience of Management Professors: Are the Blind Leading the Blind?”, *Journal of Management*, Spring, 1978, 4 (1), p. 78.

.161 ($p < .05$). While this was statistically significant, it explains only a small amount of the variation. This would suggest that the instrument used did not tap the important factors which should be considered: for example, size of classes, number of instructor preparations, background and personal characteristics of the students, institutional or collegial pressures for different types of pedagogy, etc. It is possible that larger schools have a broader faculty base which enables smaller class sizes and fewer preparations which allow the instructor to bring in more applications. It is also possible that the more senior people, when teaching at the undergraduate level, are assigned mass lecture sections where less time can be devoted to applications. Our data do not permit any further conclusions but suggest some avenues for further inquiry.

Table 2
Variables Relating to the Theory/Applications Orientation^a

Variable ^b	Undergraduate Courses		Graduate Courses	
	Beta	F	Beta	F
Academic Managerial Experience	-.021	.280	-.035	.982
Age	-.030	.388	.123	5.097**
Age at Highest Degree .....	.002	.003	-.109	7.002**
Degree Field .....	.043	2.130	-.038	1.576
Graduate Teaching Ratio	-.038	1.675	.047	2.527
Managerial Experience outside of Academia	-.021	.280	.165	16.255**
Rank	-.068	3.473*	.078	5.209**
Size of Institution .....	.133	20.273**	-.066	4.874**

** $p < .01$
* $p < .05$

^aA negative value indicates an emphasis toward theory; while a positive value indicates an emphasis on applications.

^bFor undergraduate courses, $R = .161$, $p < .05$; for graduate courses, $R = .221$, $p < .01$.

For graduates, Table 2 shows the factors which relate to the theory/applications orientation at the graduate level. Beta values indicate that the variables which are positively related to an applications orientation are managerial experience in other than academic administration (i.e. in business, the military, or the public sector), the more senior in academic rank, and the more senior in age. The data suggest that managerial experience outside of academe is the most influential factor in using applications in graduate courses. These experiences may provide opportunities to demonstrate practical applications. The more senior in rank and in age may also have had more opportunities to develop materials and examples to illustrate applications and feel that it is important to do so.

Beta values indicate that the variables which are negatively related to an applications orientation (i.e. positively related to a theory orientation) are recency of degree and larger institutions. These data suggest that people with more recent degrees are probably younger, have less experience, and have had fewer opportunities to build up a repertoire of materials to illustrate applications. The findings also suggest that the

larger schools are the ones more likely to have larger master's and doctoral programs and that these may tend to be more theory oriented. These data appear to support the literature related to a lack of "reality" orientation found in some MBA programs.

Variables that were not significantly related were extent of graduate teaching, degree field, and experience as an academic manager. Persons who teach graduate courses exclusively appear to be more applications oriented, but the results were not statistically significant. Persons with degrees from outside of the business school appear to be more theory oriented, but the results were also not significant. Persons with experience as academic managers appear to be more theory oriented, suggesting that academic administration may offer few examples for applications. However, these results were not statistically significant. The multiple R was .221 ($p < .01$). While this was statistically significant, it explains only a small amount of the variation. As with undergraduates, there probably are additional factors which are important in determining the theory/applications balance at the graduate level.

In summary, this analysis suggests that graduate and undergraduate teaching are perceived as quite different. Only two factors, size of institution and rank, appear to be important at the undergraduate level. At the graduate level, managerial experience, rank, age, size of institution, and age at receiving one's highest degree are important. It is suggested that other factors than those analyzed here may explain the theory/applications orientation at the undergraduate level. It is also possible that instructors hold more definite views about graduate level work, are dealing with a more select group, or have a more commonly agreed upon perception of expectations about graduate students. The data also suggest the conclusion that managerial experience outside of academe is important if graduate education is to include more practical applications.

Pedagogical Techniques

Table 3 shows the pedagogical techniques used by the respondents to illustrate applications. The data show that professors rely a great deal on their personal experiences. The respondents reported a mean of 11.7 years of managerial experience and a mean of 7.2 years of non-managerial experience exclusive of teaching and research. These data suggest that the typical management professor has the experience and background to relate theory and applications. However, over three-fourths (77%) of this experience was obtained prior to 1970, suggesting that these experiences may be dated or less relevant than they once were.²

Cases prepared by others, experiential exercises, and students' experiences are also extensively used, while instructor prepared cases

²For an elaboration of this point, see Wren, Atherton, and Michaelson (1978, pp. 75-83).

Table 3
Pedagogical Techniques: Mean Usage and Intercorrelations

Technique	Mean Usage ^a	Intercorrelations						
		Personal Experiences	Cases written by Others	Experiential Exercises	Experiences of Students	Audio Visual	Cases written by Instructor	Computer Simulations
Personal experiences	5.350	1.00						
Cases written by others	4.592	.046	1.00					
Experiential exercises	3.851	.031	-.001	1.00				
Experiences of students	3.758	.209**	.123**	.248**	1.00			
Audio visual	3.195	.106**	.085**	.275**	.197**	1.00		
Cases written by instructor	2.754	.237**	.270**	.012	.104**	.150**	1.00	
Computer simulations	2.336	-.013	.116**	.072*	.097**	.048	.072*	1.00

^aA higher value reflects the greater use of any particular technique.

** $p < .01$

* $p < .05$

and computer simulations are less frequently used. These findings suggest that instructors rely primarily on their own experiences, on experiences reported in cases, on students' experiences, and on computer simulations to illustrate applications. A number of the intercorrelations were statistically significant, but explain a relatively small portion of the variance.

Table 4 shows the relationship between the pedagogical technique used and the age of the instructor. The older the professor, the more likely the use of personal experiences, cases by the instructor, and cases written by others. A significant negative correlation exists between age and the use of experiential exercises. At least three explanations are possible: (1) older professors are not familiar with this technique; or (2) they are resistant to experiential exercises; or (3) they do not feel the need to use this technique because of their greater experience.

Table 4
Pedagogical Techniques Related to Specific Variables

Technique	Age	Rank	Managerial Experience
Audio-visual .....	.040	-.006	.127**
Cases written by instructor .....	.153**	.184**	.146**
Cases written by others .....	.136**	.098**	.105**
Computer simulations	-.001	.042	.082**
Experiential exercises	-.143**	-.076**	-.087**
Personal experiences .....	.072**	.070*	.138**
Student experiences	-.039	-.096**	.020

** $p < .01$
* $p < .05$

*Mean years of managerial experience = 11.7 years.

Table 4 depicts the relationship between the pedagogical technique used and academic rank. The higher the academic rank, the greater the use of personal experiences, cases by the instructor, and cases by others. Significant negative correlations are found between rank and student experiences and the use of experiential exercises. This suggests that those more senior in rank use their own experiences rather than those of students, while junior people rely more upon student experiences, perhaps because of their own relative inexperience. Similarly, the higher ranks have more experience and are less likely to use experiential exercises. This conclusion is supported by the data in Table 4 which relates managerial experience in pedagogical techniques used. Both age ($r = .72, p < .01$) and rank ($r = .20, p < .01$) related positively to managerial experience.

The more managerial experience a professor has, the greater the use of personal experiences, self-written cases, cases by others, computer simulations, and audio-visual materials. A significant negative correlation was found between the use of experiential exercises and managerial experience. This indicates that those with more managerial experience are much less likely to use experiential exercises.

In summary, the pedagogical techniques an instructor uses to illustrate applications appear to be a function of age, rank, and managerial experience. Older, more senior, and managerially experienced faculty rely heavily on personal experiences, cases written by others, and self-prepared cases. Younger, more junior, and less experienced professors rely more heavily on experiential exercises to bring applications into the classroom.

Conclusions

Assertions have been made that management teaching is too theoretical. The purpose of this research was to assess the theory/applications orientation in management pedagogy and to determine what factors were most influential. It was a survey of academicians who perceive themselves as "balanced" with an emphasis toward applications. Graduate courses are deemed to require more emphasis on theory than undergraduate courses, but overall the tendency is toward applications rather than theory. On the other hand, it is possible that managers, students, and/or others may see the balance as being more theoretical. Further investigation might be appropriate.

The findings suggest that management pedagogy is a multidimensional phenomenon which is influenced by at least three factors: (1) course specific variables such as level of instruction and subject area; (2) instructor specific variables such as age, rank, and managerial experience; and (3) institutional specific variables, such as size. A possible fourth factor, student specific variables, was not tapped by this research but could be important for future research. Differences were found in the course specific dimension with respect to graduate versus undergraduate instruction and among various subject areas. The conclusion is that professors would have differing emphases at these levels and among various courses. The influence of instructor specific variables were less predictive of a theory/applications orientation at the undergraduate than at the graduate level, suggesting that student specific variables should be considered in future research and in any conclusions about management pedagogy. Age, rank, managerial experience and recency of highest degree all influence the theory/applications orientation in graduate instruction. It is concluded that managerial experience in organizations outside of academic ones is the most influential factor in developing an applications orientation in graduate education. Institutional data were limited to size in this study and could be more important than reported here. Larger schools appear to favor more applications at the undergraduate level, but more theory at the graduate level. If the larger schools are the ones producing most of the graduate students, it may be that this would partially explain the commonly held assertion management is "too theoretical." Pedagogical techniques used to illustrate applications took a variety of forms and were influenced by a number of instructor related factors. Those with more managerial experience who were more senior in rank and age used

personal experiences and cases more frequently. Experiential exercises were used by younger faculty with lesser rank and experience.

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