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IN THIS ISSUE'S COLUMN WE ARE FORTUNATE to have the intriguing results of an empirical study conducted by the column's authors: Ritzman, Koehler, VanBuskirk, and Hershauer. Using calls for change in doctoral work made by the AACSB and the Graduate Management Admissions Council (GMAC) as a framework, they surveyed faculty who were doing recruiting of new Ph.D.s for their schools in order to get a "customer orientation," and used the same questions to poll directors of Ph.D. programs or chairpersons so as to survey a "supplier orientation." Their findings concerning changes to the process, intensity, and informal aspects of doctoral education give us all a great deal to contemplate as we go about attempting to alter doctoral programs in the decision sciences to meet changing expectations.



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Changing Expectations for Doctoral Education

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The American Assembly of Collegiate Schools of Business (AACSB) and the Graduate Management Admissions Council (GMAC) called for changes in business education and scholarship, and yet doctoral business programs have changed very little. To better understand the lack of change and the potential for change, we conducted a limited empirical study that measures the relative importance attached by faculty leaders to various characteristics of doctoral programs and the students that they produce. Our study shows that the importance of formal coursework in a

student's discipline and traditional research capabilities remains high, but making a faster start in both research and teaching, greater research relevance, and more research on global issues within research disciplines are increasingly valued.

These findings are best understood within the context of three important forces at work in business education. The first force is a call for changes in teaching abilities, research relevance, cross-functional abilities, and attention to global issues. The second force has been the enrollment trends in business schools. The third force is a



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resistance to making substantial changes in doctoral education. Our review of the literature is organized around these three forces.

The Literature and Propositions

CALLS FOR CHANGE. Business schools must reckon with a call for reform from industry and the business press, and now many deans and professors. Early indications of these concerns came from the comprehensive study of business education by Lyman Porter and Lawrence McKibbin (Porter and McKibbin, 1988), and by the two-year study of MBA education (Commission on Admission to Graduate Management Education, 1990) that followed shortly after it.

These reports dealt with the undergraduate and MBA programs and not directly with doctoral programs in business. The last in-depth study of doctoral programs, the Gordon-Howell report (Gordon and Howell, 1959), was done over 40 years ago. This watershed report had an enormous impact on the direction of doctoral education. However, some programs now may be more a result of inertia and individual preferences, rather than systematic review and conscious choices. For these reasons the AACSB and GMAC established a joint project to assess U.S. doctoral programs, the first such study since the Gordon-Howell report. It began with an invitational conference in 1992 (Porter et al., 1992), where more than 30 conference participants and speakers met to discuss current and future challenges for doctoral programs.

In 1995, the Board of Directors of the AACSB appointed a task force to examine development needs of business school faculty. Some of the problems identified, and recommendations made, bear directly on doctoral programs (AACSB, 1996). At the 1998 Decision Sciences Institute meeting, Lyman Porter and Lawrence McKibbin summarized their study as it applies to doctoral programs (Porter and McKibbin, 1998a, 1998b). Using the recommendations from these various sources, we formulated four propositions.

Proposition 1. There is a growing demand for more relevance in research, tying it to real business problems and

creating knowledge that is teachable in the classroom.

Proposition 2. There is a growing demand for faculty members who can do research and teach beyond narrow disciplinary boundaries.

Proposition 3. Universities will have much higher teaching expectations of new hires.

Proposition 4. There is a growing demand for new faculty members who recognize global issues in their research.

ENROLLMENT TRENDS. Business education has thrived since the days of the Gordon-Howell report both in terms of its contributions to the scholarly body of knowledge and its growth in enrollment. This growth reached a peak in 1991-92, when business schools accounted for 22.5 percent of graduates from all disciplines. However, the numbers systematically dropped after the peak in 1991-92 with the percentage of bachelor's at 19.3 in 1996-97 (AACSB, 1999a). Now enrollments for undergraduates have begun to increase, as reflected in a slow rise in demand for graduates with Ph.D.'s. On the other hand, the number of graduates from business doctoral programs attained a high point in 1993-94 and has since followed a downward trend (AACSB, 1999b).

Although forecasting future enrollments and doctoral positions is risky, the "golden age" of business doctoral programs of the 1970's, when there were as many as six positions per applicant, is over. Universities will be more concerned about taking steps to place their Ph.D. graduates well, and universities hiring them will have even higher expectations for the abilities of new graduates. Given these perspectives, we now formulate three more propositions.

Proposition 5. The importance of research training will be higher than ever before.

Proposition 6. New graduates must be expected to make a fast start when they arrive at their new job.

Propositions 7a and 7b. There will be more emphasis on research mentoring, relative to formal course work.

RESISTANCE TO CHANGE. Changes in doctoral education have been slow at most universities since the 1970's, after new initiatives stemming from the Gordon-Howell report were implemented. For example, it is unlikely that the top premium placed on disciplinary-based research will waiver.

Proposition 8. Traditional, discipline-based research will continue to be highly valued.

Data

Using the 1996 DSI Placement Directory, we mailed a survey with an identical set of questions on graduate and program attributes to the directory's faculty contact for recruiting to get a "customer orientation," and to the director or chairperson of the applicant's doctoral program in business (or office of graduate programs) to get a "supplier orientation." In almost all supplier-orientation mailings, we contacted a specific director or chairperson by name. We restricted the pool of supplier-oriented respondents to universities that had at least one applicant entering the job market for the first time who sought a tenure-track position as assistant professor. Similarly, the customer-oriented respondents were limited to the primary contacts seeking a person for the rank of assistant professor. The instrument was mailed to 50 faculty members asked to take the customer orientation, with 18 responding (36% response rate). The survey was mailed to 56 directors or chairpersons asked to take the supplier orientation, with 26 responding (46% response rate).

There were 27 items on the survey instrument. The first 13 items are about the Ph.D. program itself, and the importance placed on different program attributes. The last 14 questions are about the Ph.D. graduates. A scale of 1 to 7 is used, with 1 meaning *very unimportant* and 7 meaning *very important*. In Table 1 we refer to an item with a prefix of either P (for program) or G (for graduate). Two responses were given for each question: one for the attribute's importance during the last five years, and the other for its importance for the next five years. For more information on the exact questions asked, please contact one of the authors.

Propositions	Rank ¹	Proposition's Measured Variables ²	Proposition Scores			
			Validation Values ³	Last 5 Years	Next 5 Years	Difference ⁴
1. Research relevance	8	P4, P5, P6, P7, P9, G10, G13, G14	0.85	4.20	5.06	<0.01
2. Work beyond discipline	9	P8, P11, G6, G8, G9	0.83	3.86	4.92	<0.01
3. Teaching expectations	4	G11, G12	0.51	5.06	5.81	<0.01
4. Global issues	7	G7	—	4.14	5.23	<0.01
5. Research training	5	P10, P12, P13, G3	0.65	5.39	5.62	<0.05
6. Fast start	2	G1, G2, G11, G12	0.67	5.26	5.83	<0.01
7. a. Mentoring	3	P3	—	4.89	6.09	<0.01
b. Formal coursework	1	P1, P2	0.48	6.14	6.13	NS
8. Traditional research	6	G4, G5	0.57	5.49	5.42	NS

¹Relative importance of each proposition scale for next five years (based on scores in 6th column).

²Complete list of variables with mean scores are available upon request. Chosen by analyzing the data of both customers (n = 18) and suppliers (n = 26) for the last five years.

³Pearson correlation coefficient for two variables; Cronbach alpha for three or more variables.

⁴Significance of difference in proposition scores between last five years and next five years; paired t-test.

Table 1: Propositions, relative importance, measured variables, and scale score changes.

Propositions	Average Scores for Next Five Years			Trend Differentials ²		
	Customer Orientation	Supplier Orientation	Diff. ¹	Customer Orientation	Supplier Orientation	Diff. ³
1. Research relevance	5.68	4.61	≤ 0.01	1.20	0.61	≤ 0.10
2. Work beyond discipline	5.53	4.48	≤ 0.01	1.44	0.78	NS
3. Teaching expectations	6.00	5.67	NS	0.81	0.71	NS
4. Global issues	5.39	5.12	NS	1.11	1.08	NS
5. Research training	5.22	5.91	≤ 0.01	0.04	0.37	≤ 0.10
6. Fast start	6.03	5.87	NS	0.81	0.91	NS
7 a. Mentoring	5.35	6.16	≤ 0.01	0.41	0.68	NS
b. Formal coursework	5.89	6.30	≤ 0.10	-0.19	0.12	≤ 0.05
8. Traditional research	5.19	5.58	NS	-0.22	0.04	NS

¹Significance level for difference between customer versus supplier orientations.

²"Trend differential" is the mean of the next five years minus the mean of the last five years.

³Significance level for customer-supplier differences in trend differentials.

Table 2: Differences in proposition scale scores (customer versus supplier orientation).

Analysis

Table 1 presents a summary of our findings for the eight propositions and shows the scores that correspond to each proposition scale, averaged across all respondents (both customer and supplier orientations). A respondent's score for a particular proposition is simply the average response for the measured variables in the proposition scale. The table also shows the significance

in differences between responses for the last five years, versus the next five years. All of the propositions show a significant increase, except for Propositions 7b and 8. Table 2 does show some differences in the customer-oriented versus supplier-oriented responses, but the trend differentials on the right side of Table 2 show that the changes are usually going in the same direction from the last five years to the next five years.

Our findings on each proposition can now be given and organized around the three forces for change to which they belong.

CALLS FOR CHANGE. The variables for Proposition 1 (research relevance) involve linking research with business practice and communicating research findings to students and business professionals. The variables for Proposition 2 (work beyond

discipline) entail research and teaching that go beyond disciplinary boundaries. Although research relevance and work beyond discipline rank low (#8 and #9 in Table 1), their importance shows a significant increase for the future compared to the past. Moreover, the means for research relevance and work beyond discipline have moved closer to the means for formal course work (Proposition 7a) and traditional research (Proposition 8).

Both variables for Proposition 3 (teaching expectations) deal with the ability of the graduate to teach, as demonstrated by actual experience. This item ranks high (#4 out of 9) and has grown in importance. Proposition 4 (global issues) is tested with a single measured variable: "research that addresses international and global issues" (G7). The importance of research in this area shows a significant increase.

ENROLLMENT TRENDS. For Proposition 5 (research training) the variables represent a sort of on-the-job training in research, whereby students "learn by doing" throughout their stay with the doctoral university. Such research training shows a moderate upward trend, and ranks higher than traditional research and research relevance. The scale for Proposition 6 (fast start) measures the ability to "hit the road running," both in terms of research and teaching. This ability is extremely important, ranking #2 out of 9 in Table 1, and its importance shows a significant increase.

Our expectation for the related Propositions 7a (mentoring) and 7b (formal course work) was that program downsizing would create economic pressures to reduce the number of formal courses offered, forcing more reliance on informal mentoring to take up the slack. Our data show somewhat different results. Proposition 7a uses a single variable: "Amount and type of mentoring by faculty" (P3). Respondents give this variable a very high priority, ranking it #3 out of 9. While this outcome is consistent with Proposition 7a, mentoring is not seen as a way to reduce the course offering in the doctoral program. To the contrary, formal coursework (Proposition 7b) maintains its #1 rating for the next five years.

RESISTANCE TO CHANGE. Both variables for Proposition 8 (traditional research) deal with doing in-depth, specialized re-

search in the graduate's major field. The test of this proposition shows little difference in importance from the last five to the next five years, as judged by the lack of change in average importance. However, the rank of the average importance dropped from #2 to #6. Thus, while there is a reluctance to reduce the importance of traditional research, there is a noticeable shift in other expectations.

Conclusion

Are the expectations of doctoral education changing? The answer seems to be a "definite yes" on several counts. There is a significant increase in importance assigned to making a fast start, faculty mentoring, teaching expectations, research relevant to business, work beyond disciplinary boundaries, and global issues. A second question is: How should doctoral education change? Clues for answering this question come from the measured variables that make up the various propositions that we tested. For example, more business-relevant research comes from doing research important to business (P5), giving more weight to work experience as an admission criterion (P6), doing research that can be brought into the classroom (P7), and the like. The data suggest that the changes have to do more with the process, intensity, and informal aspects of doctoral education, rather than radical restructuring of the programs.

A final question is: Will programs be changed? On the one hand, supplier-oriented respondents are less enthusiastic than customer-oriented respondents about increasing research relevance and work beyond discipline (propositions 1 and 2). Instead, they are more enthusiastic about maintaining high levels of research training, formal coursework, and traditional research. This pattern of differences, which is consistent with the opinions of participants at the Dallas conference (Porter et al., 1992), can actually create a tension that acts as a catalyst for change. On the other hand, there is general agreement on the direction of changes needed (Table 2).

The sample size for this study is quite small, and the data should be updated. We encourage other scholars to pursue this study on a larger scale and with new data.

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