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The devil's advocate responds to an MBA student's claim that research harms learning

J. Scott Armstrong
University of Pennsylvania, armstrong@wharton.upenn.edu

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Book Reviewed: Peter Robinson, *Snapshots from Hell*, New York: Warner Books, 1994.

The Devil's Advocate Responds to an MBA Student's Claim that Research Harms Learning

Snapshots from Hell describes a first-year student's experience in the Stanford Master of Business Administration (MBA) program in 1989. Peter Robinson, formerly a speech writer for President Reagan, tells about his experiences in applying to business schools, living with other MBA students, taking courses, interacting with faculty, and interviewing for summer jobs.

The experience was a hellish one for Robinson for a number of reasons. He found the transition from the White House to business school wrenching. He was, at first, quite lonely. And he was a poet (weak mathematically) which made him feel vulnerable in the quantitative courses. But Robinson also lays a degree of the blame for the uglier aspects of his business school experience on Stanford Business School and, in particular, on the faculty. Much of the teaching was mediocre, Robinson says, and some of it was appalling. The reason? Robinson suggests that the faculty was paying too much attention to research.

Snapshots from Hell has been recommended for MBA applicants, alumni, and professors so that all can learn more about MBA students' experiences. The book is well written. It compares favorably with *One-L*, Scott Turow's 1977 book about his first year at Harvard Law School and Peter Cohen's 1973 book about the Harvard Business School.

This reply is shaped by my life as a former MBA student from Carnegie-Mellon and a professor who has taught MBA students for the last 27 years. I feel like one of Satan's workers after reading *Snapshots from Hell*.

What a person learns from this book will largely depend on that person's assumptions about business schools. Of particular relevance are assumptions about the *marketing concept*: Who is the producer, who is the consumer, and whose needs are being served? Peter Robinson assumes that he is the consumer, professors are the producers, and the primary need is certification. These assumptions have been common in the redesign of business schools over the past two decades. They are also used in much of the research on education (e.g., Schneider *et al.* 1994). I first discuss the implications of these assumptions and then turn to my own assumptions, which are that the student is the *producer as well as the consumer* and the need is learning. My assumptions lead to different conclusions than those reached by Robinson. In short, I recommend that leading business schools emphasize what they do well, that is, research. The existing evidence suggests that, in addition to contributing to the common good, knowledge gained from research will also contribute to learning and will not harm students' happiness.

Faculty as Producers

Robinson's view seems to be that the professors are responsible for telling him what to do and ensuring that he does it. Learning is not an explicit goal. Nowhere does Robinson address the issue of *what he wants to learn*. All he knows is that the faculty are not capable of telling him what to learn. I imagine having the following conversation with Robinson:

Robinson: I do not know what to learn. Please tell me.

Me: You should learn X by doing Y.

Robinson: I am not interested in X or Y because.... (choose one or more: (1) it is not relevant; (2) I already know that; (3) it doesn't seem like it is right to me because I have always done it another way; (4) I disagree; or (5) this is not my learning style.)

Me: Perhaps you can explain to me specifically what is it that you would like to learn; then I can see how I might help.

Robinson: Listen, I am paying a lot of money. That's your job.

Robinson gives the impression that he is a victim in a situation over which he has no control. Yes, he works there, but he only does what he is told – at first. This environment makes him unhappy. When Robinson finds others who are also unhappy, he becomes a bit happier; he and his friends begin to view the classes as some sort of bizarre initiation rite for obtaining the degree. Robinson represents a growing proportion of MBA students who feel no responsibility for their learning. They do not believe that they can change their own behavior and skills.

Research teaches us much about the effect of teachers on learning. The findings are nearly always the same, and they are shocking. I expect other faculty respond as I do to the findings: “Well, that may be true for other faculty, but it doesn't apply to me!” And what is that conclusion?: “Apparently, instructors' classroom activities have negligible impacts on student performance, measured by multiple choice items tapping memory, application and simple analysis competencies” (Browne *et al.* 1991, p. 29). Many researchers have reached this conclusion.

When teachers direct and evaluate learning, students feel less responsibility. At least two psychological principles are related to acceptance of responsibility: Social facilitation and attribution theory. According to Zajonc's (1965) review of social facilitation research, done on rats and students, when subjects can observe the critical responses of others, their learning is inhibited. This led Zajonc to conclude that “students should study alone” (p. 274). He did not provide advice for the rats. This is especially important in the initial stages of learning a skill (Condry 1977).

Attribution theory implies that when an activity is associated with a reward, such as grades from teachers, people conclude that the reason that they are performing the activity is to achieve the reward. Condry (1977) and Barrett and Boggiano (1988) reviewed evidence on attribution theory and concluded that extrinsic rewards decrease intrinsic motivation for learning. Boggiano and colleagues (1992) show how extrinsic control over students leads them to feel helpless.

Thus, formal education provides cues that lead students to feel less responsible for their learning. For example, Tough (1982) studied important self-reported learning episodes by adults and concluded that, though people were able to report many important things they learned, few learning episodes occurred in groups, especially if the group had a teacher. Langer and Rodin (1976) found that when health care clients were told that the staff was responsible for their welfare, they became less active and happy.

In general then, a system in which professors are viewed as producers makes students helpless and irresponsible. It also puts professors in a futile position regarding students' learning. Not surprisingly then, there

is little relationship between students' satisfaction with the professor (or the course) and their learning (e.g., Attiyeh and Lumsden 1972).

And what did Robinson learn from his experience at Stanford? I was unable to determine this. He reported on a few procedures he encountered, such as net present worth, as if he were a disinterested or antagonistic bystander. Sometimes, however, he was enthusiastic. In summing up the primary learning from one of his favorite classes, he quotes his instructor, "Dawson" – "Guts. Sometimes class, that's what it takes" (p. 215).

Students as Producers

People learn most effectively when they feel responsible for their own learning. This means they perceive themselves as the primary force for learning, but does not mean being held responsible, which is a passive approach. (For a further discussion of the meaning of responsibility in learning, see Bacon 1993.) If students are to produce their own learning, they need to view professors as a resource, much as they view books and computers. For example, it is senseless to say that a textbook is responsible for one's learning. If professors were viewed as resources, students would change their orientation. They would decide what help or information they need and then seek this from the faculty. We already know how to design and implement such systems. When we do, the students become highly motivated, hard working, and effective at learning. We call these systems "Doctoral programs."

But if students learn more effectively on their own, why should they attend business school at all? I am quite willing to accept the proposition that students attend business school primarily to become certified. By improving their credentials, they can improve their chances to obtain good jobs. That said, the issue becomes, "How can students best spend their two years in an the MBA program?" One answer is to make friends with other students (networking). For those students who might also have learning as a goal, the faculty can contribute.

The Role of the Faculty

Robinson, similar to other students at prestigious MBA programs, complains that faculty spend too much time on research and not enough on teaching students. One of Robinson's favorite teachers, the aforementioned Dawson, was a marketing professor who seemed (to Robinson) to have a big advantage over the other professor because he was not a researcher. Robinson's eyes rolled when "Professor Charen" said at the beginning of a course that she had a grant the previous year that had "very nicely relieved me of the burdens of teaching to pursue my research" (p. 137). To his benefit, he did observe that some students thought this was an opportunity to learn about her latest research findings. Robinson agrees with his friend "Professor Healy" who says about Stanford (p. 151): "It's a great school But there's too much theoretical garbage and not enough decent teaching." And Robinson concludes (p. 151), "Nor was the balance about to be improved. The Dean, although a capable man, had been at his post almost a decade. Neither he nor his associate deans appeared to be responding to the changes that were already taking place in the market for MBA's." Robinson, in his later writings, has suggested that if the faculty were financially rewarded for teaching, this would go a long way toward solving the problem.

In contrast to Robinson's view, many faculty at leading business schools believe they should develop knowledge (by doing research) as well as communicate it (by teaching and writing). Their assumption is that those who are at the cutting edge should have more content (consisting of findings and methodology) to contribute to students and others.

Does the evidence favor Robinson's view that research interferes with teaching, or is research beneficial to students? First, I looked at prestige. Certainly it is in the interest of the student that his or her school be

prestigious. And research has, historically, been regarded as the primary determinant of a school's prestige. To test this assumption, Armstrong and Sperry (1994) examined data on 32 prestigious business schools. They had a measure of research impact for each school (obtained from a study by Kirkpatrick and Locke 1992) that was based on the averages of the number of papers published from 1983 through 1987, citations in 1987, and peer ratings for faculty members at each school in 1988. This was correlated against prestige as judged by deans, faculty recruiters, and prospective students. With the exception of Harvard University and The University of Virginia, which both emphasize teaching, the prestigious schools are all research-oriented. A strong relationship existed between research impact and prestige even among the 32 elite business schools.

The great majority of the 700 MBA programs in the United States focus *entirely* on teaching. Few of these are highly rated by recruiters, deans, or prospective students. Furthermore, few of the schools that conduct research but which *emphasize* teaching are highly ranked. In general, it seems that prospective students are most interested in getting accepted to schools with the highest research impact, not those with the highest teacher ratings. In fact, a survey of potential MBA students concluded that the prestige of the MBA program dominated all other criteria (Yeaple 1994).

Because research enhances the prestige of the school, and because it is valuable to know about research findings, it would be expected that research has a payoff to students. Ronald Yeaple of the University of Rochester presented data on the net present value to students with MBA degrees from 20 leading business schools (see *The Economist* 1994).¹ He obtained his data by using *Business Week* survey estimates of pre- and post-MBA salaries at each school, in addition to a growth rate estimated from five-year follow-up surveys. Although these data have problems (e.g., Yeaple estimated that responses were received from only 25% of the graduates for the fifth-year-out, averages were used instead of medians, inflation produced illusory gains, response bias is common in such surveys), most of the biases applied to all schools. The MBA value comes from two sources: (1) the jump in post-MBA pay relative to pre-MBA pay (typically 55%), and (2) Yeaple's assumption that salary growth rate would be half as great if that individual did not have an MBA. The latter assumption is critical to assessing the value of an MBA, but it is less of a problem when looking at differences among the schools. Data on the research impact for 17 of Yeaple's schools were available from Kirkpatrick and Locke's (1992) study, which allowed me to test the value of business school research.

If students such as Robinson are correct, schools that "waste" time on research would provide less value to students. If my contention is correct, schools with higher research impact will be shown to provide greater value to students. Because of the measurement problems, I converted the data to ranks. I present the rankings for the 17 schools in Table 1. Research impact was positively related to Yeaple's tax adjusted net present value (Spearman rank correlation = .52, statistically significant at .05). Excluding Harvard, the correlation becomes .69 (significant at .01). Despite the fact that my test was conducted on only a small sample of top research schools

¹ For this article in the *Economist*, Yeaple adjusted the data to reflect the time value of money using a discount rate of 6% and made an adjustment for taxes (20% average for those without MBA's and 30% for those with MBA's).

Table 1
MBA Value versus Research Impact

School	Research Impact Rank	MBA Value Rank
Stanford	1	3
Wharton	2	6
MIT	3	4
Carnegie	5	14
Rochester	6	16
Chicago	7	2
Cornell	8	10
Northwestern	9	9
UCLA	10	7
Duke	12	20
Dartmouth	14	12
Michigan	15.5	13
Harvard	17.5	1
NYU	17.5	18
Texas	19	15
North Carolina	21	19
Indiana	28	17

from among the 700 schools, and despite problems with the quality of the data, the results are consistent with conventional wisdom among faculty: Research pays off for students in terms of higher earnings.

The most obvious answer to the question, “Why does research correlate with students’ earnings?” is found in reference to its effect on a school’s prestige. Because my test used the pay growth rate of students after graduation, it is possible that some of this gain may be attributable to the increased productivity of the students exposed to research professors. Yeaple’s (1994) analysis concluded that the research factor paid off in the period after graduation.² There is additional evidence to support this conclusion: Although content is not related to student’s rating of courses (Abrami, Leventhal, and Perry 1982; Marsh 1984), it is related to their learning (Abrami, Leventhal, and Perry 1982).

Despite the gains from the higher prestige, might the students be less satisfied while attending school? This issue has been studied in a meta-analysis by Feldman (1987) who concluded that faculty who engage in research do not receive lower teacher ratings. On the contrary, the relationship was positive and highly significant ($p < .001$ obtained across 29 studies). Although the average correlation was not large ($r = .12$), it might be important for a school’s policy-making. Feldman also showed that time spent on research was positively related to research productivity ($= +.44$ across four studies). On the other hand, time spent on teaching and closely related activities had almost no relationship to teacher ratings ($r = +.001$ on the basis of eight studies). The policy implications are obvious, but I will state them anyway: The administration and the students should encourage faculty to engage in research.

Although we have focused on the value of research to students, its greatest benefit is expected to accrue to others. For example, many textbook authors draw upon research findings.³ In addition, research-based knowledge developed in universities is often adopted by businesses. Although it is easy to find examples of published research that is useless, it is important to observe that some research findings are useful. That said, business schools can do more to support the publication of important and useful findings that are written in an intelligible manner. One positive step adopted at Wharton is to base faculty promotion decisions heavily upon what a professor views as his or her three best papers. The faculty member is also asked to explain why each paper has had an important impact. I would also advocate that the success of the faculty be judged on the value

² Our concern here is to determine how the data matches up to the two leading hypotheses. One can also deduce other explanations from the data. For example, students at research-oriented schools may conclude that the classes are useless, and then spend all of their time on networking, thus helping their earnings in the years after graduation.

³ Interestingly, however, textbooks for large-volume courses such as Marketing Principles seem to ignore research findings. Armstrong and Schultz (1993) were unable to find *any* research-based findings in their analyses of marketing principles textbooks covering a span of six decades.

of their research findings. These contributions to knowledge could be useful to other researchers or the practice of management.

Satisfying the Customers

Robinson reports on the first year because it is the year of drama: “It is also the year of loneliness, self-doubt, and constant unyielding pressure” (p. 5). In an effort to deal with these feelings, some schools have instituted the cohort system, whereby students are grouped and take each course together. They have also reduced requirements and added structure (such as standardizing the core courses so that everyone is presented with the same material). The Stanford MBA students were told they should be enjoying this experience, and they were encouraged to complain about the service provided by the faculty. Many schools have instituted formal evaluations, gripe sessions with deans, and other complaint procedures.

Interestingly, whereas students such as Robinson seem unable to describe their learning objectives, they have great confidence that they can design an effective program for all students. The “Robinson way” to gain control is to complain about professors to higher authorities and form quality circles in which the students instruct the professors on how to properly conduct their jobs. I suspect that classes conducted the Robinson way would resemble a talk show, in which the students defend their opinions on the topic at hand.⁴

Recently, changes to satisfy the “Robinsons” have been occurring at some business schools. Efforts to improve teaching have typically involved procedures for removing students’ responsibility for learning. Structure has been added so that students will know exactly what is required to get credit for the course. Students must demonstrate they met the requirements or be able to show that failure to meet them was because of the incompetence of a professor. I expect that these changes may lead teachers and students to view each other as the enemy. Meanwhile, the administration has been trying to mediate the process, often under the assumption that students are consumers and faculty are producers.

According to Robinson, one way that Stanford addressed the problems the students had noted, was for the deans to circulate among the students and advise them all to “get their rest.” (Does that mean they should “slack off”?) The second-year students offered helpful advice on learning by distributing a memo entitled “Pain or Pleasure at Stanford Business School.” In it they stated, “Most of us come [to Stanford] as perfectionists and feel very uncomfortable doing a so-so job on anything. The sooner you give up this habit, the happier you will be.” It went on to say, “[Y]ou would be better off devoting an hour to skimming three papers rather than reading one article carefully” (p. 84).

Robinson seemed pleased to hear from his friend Healy that the new Dean at Stanford was making the school “more practical.” “But it ain’t easy,” said Healy. “He keeps running smack into the guys on the faculty who think the school exists to let them do their research*” (p. 277).

Implications for Research Faculties

In today’s prestigious business schools, students have to demonstrate competence to get in, but not to get out. Every student who wants to (and who avoids financial and emotional distress) will graduate. At Wharton, for example, less than one percent of the students fail any given course, on average. (Robinson might argue that a one percent failure rate means that some professors still do not “get it.”) Those who fail a course have extensive

⁴ One of the readers of my review passed along the story of a faculty member who has greatly improved his course ratings by adopting the talk show model.

rights to redress any perceived inequities in this system. The probability of failing more than one course is almost zero. In effect, business schools have developed elaborate and expensive grading systems to ensure that even the least competent and least interested get credit.

Because (1) schools do not fail students and (2) grading inhibits learning (Condry 1977; Levine and Fasnacht 1974), a simple solution to the conflicts between teaching and research would be to separate teaching and evaluation. Students could attend the program for two years during which time they would be welcome to come to classes if they are prepared.

Classes could be devoted primarily to understanding and applying what has been learned from research. The program would be advertised as a place in which a person can learn how to use research findings and in which the research process is taught so that students can learn more effectively on their own. In other words, research – the comparative advantage of the prestigious schools – would be used as the major selling point. It would be viewed as aiding the interests of the students rather than as being antagonistic or irrelevant to their interests.⁵

Evaluation by faculty could be completely eliminated, as happens with most executive programs. If an evaluation of students is desired, it could be conducted using an assessment center at the end of the two years (similar to the procedure used in the United Kingdom's universities). Such an assessment center would test whether the students can use the techniques and concepts that are deemed important to being an effective manager. This might require one or two days. The same grading scale could be used as at present, but the student's grade for the program would be based entirely on performance at the assessment center. The content of tests could be specified by the faculty.

This design would allow business schools to serve many more people. Because students who are not interested in learning would have less need to use the school's resources, the classes could be much larger. Students like Peter Robinson would not have to endure Hell. They would have some control over what classes they attend, and they might choose to devote most of their energies to networking, which, according to research by Luthans, Hodgetts, and Rosenkrantz (1988), is more closely related to success in business than is job performance. This proposal also has the added advantage in that it promises to be profitable. The market segment interested only in certification will be especially profitable because they will use less of the school's resources. Furthermore, those students concerned about learning and those concerned about certification have a common interest in ensuring that the faculty conduct and publish their research findings.

For a school deciding on learning as an objective, I suggest changes in the admissions system. Currently admissions officers ask whether students are smart, whether they have approximately \$40,000 spend, and whether they have been successful in any line of work. I suggest that leading business schools might try to admit those who can demonstrate an interest in learning how to apply research findings and research techniques. This criterion would probably lead to the rejection of Robinson-like candidates. Even Robinson seemed to realize he had been cast into the wrong situation – a few weeks after the program started, he observed (p. 62): "I do not understand

⁵ Some schools have made this goal explicit. For example, in October 1994, the new administration at the University of Pennsylvania stated that the following principle was to be used in the undergraduate program: "Penn's faculty is a research faculty, and Penn's undergraduate academic programs should profoundly reflect that fact. Teaching should be regarded as the refinement and transmittal of the ideas and knowledge developed in research and should be a major contributor to faculty research. Penn students should have direct experience in the processes and products of scholarly research throughout their undergraduate years at Penn" (Rodin and Chodorow 1994, p. 3).

Trees. I do not understand Computers. I do not understand Micro. I do not understand Accounting. I do understand Organizational Behavior, since it deals with words rather than numbers. But I don't like it. So what am I doing at a business school? Reflecting back, a year or so after graduation, he explains (p. 282), "I learned that I fit best outside, writing about business rather than participating in it directly."

I believe that much of the redesign of business schools in the recent past has been to try to design the program to suit the Robinsons. I expect they represent a vocal minority of the students. In other words, schools are designing the MBA program to meet the needs of the least well-suited and least interested students. In contrast, I recommend that leading business schools emphasize their strength, which is the creation of knowledge through research. When advertising to prospective students, rather than being silent or apologetic about research, leading schools should use it as their selling point. They should try to select those students who show a desire to participate in a research environment. Once at the school, students should be encouraged to take responsibility for their learning and, in effect, manage their learning. A good example of such an initiative is the LEAD program at the University of Chicago, in which students run one of the courses and the teachers have no formal role. The procedures that lead students to displace responsibility onto the faculty should be eliminated. Thus, schools should dispense with grading by teachers, because it implies that teachers are responsible for assessing progress. Course evaluations should be eliminated, because they imply that students are not responsible for learning in the course. Instead, students could be asked to summarize what they learned in the course. Armstrong (1983) discusses other ways to design programs to increase learner responsibility. Ideally, business school graduates should become managers who keep abreast of the research literature after they graduate.

Certification, if desired, could come about through a school's assessment center, especially if the tests are realistic. Although studies on the predictive value of assessment centers have mixed results, especially with respect to performance, they can be completed in two days rather than two years (Turnage and Muchinsky 1984). Assessment centers also provide useful predictions of managers' success when no job history is available (Hinrichs 1978). In contrast, it has long been known that success in school, as measured by grades, has almost no relationship to success in later life (e.g., Berg 1970; Hoyt 1966). However, the prospect of having an assessment center at the school may tend to subvert the goal of learning.

Conclusions

Snapshots from Hell describes the turmoil experienced by some MBA students. Their feelings and reactions are compatible with what might be expected from prior research findings. Peter Robinson represents a growing segment of MBA students.

Although I enjoyed Robinson's book, I found that it offered a chilling view of the future. Leading business schools are not designed to serve everyone, nor are they designed to ensure the happiness of all students. The prospect of serving a student body consisting of Robinsons conjures up thoughts of committees of uninformed and disinterested students taking time from their busy schedules to dictate what the professors should teach and how they should behave in the classroom.

Whether students are interested in certification or learning, they can all benefit from research. Research enhances the prestige of their institution, and this apparently leads to higher earnings for the graduates. It also produces gains in learning, which are achieved at no loss in student satisfaction. Meanwhile, faculty research will also benefit others, which is its most important function. The key issue is not who is the consumer, but who is the *producer*. A system in which professors are viewed as producers cannot succeed. It will produce confrontation

and turmoil, especially if learning is relevant. A system in which students are viewed as producers would enhance the efficiency of the learning and aid in the pursuit of knowledge by the faculty.⁶

References

- Abrami, P. C., L. Leventhal, and R. P. Perry (1982), "Educational Seduction," *Review of Educational Research*, 52 (3), 446-64.
- Armstrong, J. Scott (1983), "Learner Responsibility in Management Education, or Ventures into Forbidden Research," *Interfaces* 13 (2), 26-38.
- _____ and Randall L. Schultz (1993), "Principles Involving Marketing Policies: An Empirical Assessment," *Marketing Letters*, 4 (3), 253-65.
- _____ and Tad Sperry (1994), "Business School Prestige-Research Versus Teaching" (with Commentary), *Interfaces* 24 (2), 13-43.
- Attiyeh, Richard and K. G. Lumsden (1972), "Some Modern Myths in Teaching Economics: The U.K. Experience," *American Economic Review*, 62 (2), 429-33.
- Bacon, Charles S. (1993), "Student Responsibility for Learning," *Adolescence*, 28, 199-212.
- Baxrett, Marty and Ann K. Boggiano (1988), "Fostering Extrinsic Orientations: Use of Reward Strategies to Motivate Children," *Journal of Social and Clinical Psychology*, 6 (March/April), 293-309.
- Berg, Ivar (1970), *Education and Jobs: The Great Training Robbery*, New York: Praeger Press.
- Boggiano, Ann K., A. Shields, M. Barrett, T. Kellam, E. Thompson, J. Simons, and P. Katz (1992), "Helplessness Deficits in Students: The Role of Motivational Orientation," *Motivation and Emotion*, 16, 271-96.
- Browne, M. Neil, J. H. Hoag, M. V. Wheeler, and N. Boudreau (1991), "The Impact of Teachers in Economic Classrooms," *The Journal of Economics*, 17, 25-30.
- Cohen, Peter (1973), *The Gospel According to the Harvard Business School*. New York: Doubleday.
- Condry, John (1977), "Enemies of Exploration: Self-Initiated Versus Other-Initiated Learning," *Journal of Personality and Social Psychology*, 35, 459-77.
- The Economist* (1994), "The MBA Cost-Benefit Analysis," (August 6), 58.
- Feldman, Kenneth A. (1987), "Research Productivity and Scholarly Accomplishment of College Teachers as Related to Their Instructional Effectiveness," *Research in Higher Education*, 26, 227-98.

⁶ Ronald N. Yeaple provided data and useful comments on three drafts. Peter Robinson provided gracious suggestions. Helpful comments were also received from others, among them Jennifer Aaker, Kathy J. Armstrong, David Bell, Fred Collopy, Ralph Day, Charles E. Dwyer, Dessa Ewing, Richard Franke, Bob Kay, William Ross, Brian Wansink, and David Wofford.

- Hinrichs, John R. (1978), "An Eight-Year Follow-Up of a Management Assessment Center," *Journal of Applied Psychology*, 63, 596-601.
- Hoyt, D. P. (1966), "College Grades and Adult Achievement: A Review of the Literature," *The Educational Record*, 47, 70-75.
- Kirkpatrick, Shelly A. and Edwin A. Locke (1992), "The Development of Measures of Faculty Scholarship," *Group and Organizational Management*, 17 (1), 5-23.
- Kohn, Alfie (1993), *Punished by Rewards*. New York: Houghton Mifflin.
- Langer, Ellen L. and Judith Rodin (1976), "The Effects of Choice and Enhanced Personal Responsibility for the Aged: A Field Experiment in an Institutional Setting," *Journal of Personality and Social Psychology*, 34 (2), 284-90.
- Levine, Fredric M. and G. Fasnacht (1974), "Token Rewards May Lead to Token Learning," *American Psychologist*, 29, 816-20.
- Luthans, Fred, Richard M. Hodgetts, and Stuart A. Rosenkrantz (198B), *Real Managers*. Cambridge, MA: Ballinger.
- Marsh, H. W. (1984), "Students' Evaluations of University Teaching: Dimensionality, Reliability, Validity, Potential Biases, and Utility," *Journal of Educational Psychology*, 76 (5), 707-54.
- Rodin, Judith and Stanley Chodorow (1994), "Implementing n 21s[Century Undergraduate Education," *The University of Pennsylvania Almanac*, (October 25), 3.
- Schneider, Benjamin, P. J. Hanges, H. W. Goldstein, and E. p. Braverman (1994), "Do Customer Service Perceptions Generalize? The Case of Student and Chair Ratings of Faculty Effectiveness," *Journal of Applied Psychology*, 79, 685-90.
- Tough, Allen (1982), *Intentional Changes*. Chicago: Follet.
- Turnage, Janet J. and P. M. Muchinsky (1984), "A Comparison of the Predictive Validity of Assessment Center Evaluations Versus Traditional Measures in Forecasting Supervisory Job Performance: Interpretive Implications of Criterion Distortion for the Assessment Paradigm," *Journal of Applied Psychology*, 69, 595-602.
- Turow, Scott (1977), *One-L*. New York: Penguin Books.
- Yeaple, Ronald N. (1994), *The MBA Advantage*. Holbrook, MA: Bob Adams, Inc.
- Zajonc, Robert B. (1965), "Social Facilitation," *Science*, 149 (July 16), 269-74.