

Rethinking Management Education: A View from Chicago¹

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1. Introduction

Uncertainty has always played a major role in business. And in recent years managers have had to grapple with an additional source of uncertainty: the challenge to redesign – even reinvent – their organizations and businesses on a continuous basis. The pace of change has accelerated. We live in an increasingly interdependent world. Product development times and life cycles are shorter. There is greater diversity in the workplace. Few firms can cling to fixed beliefs about products, markets, and operating procedures, and expect to succeed.

This onrush of change has forced management to rethink assumptions about how to organize employees. Of particular importance are issues of breaking down functional “silos” and the flattening of organizational structures. Among factors fueling this trend are the need to react swiftly to changes in the market, to incorporate quality in products and services, and to utilize fully the expertise of those employees closest to customers and products.

Given these trends, a key strategic question faces many firms: How to develop and nurture managerial talent capable of thriving in the new environment?

In this paper, we consider the role business schools can play in helping firms meet these challenges. In doing so, our major focus is on M.B.A. education though many of our comments also apply to various forms of executive education. While M.B.A. education has blossomed over the past 40 years, it is in danger of becoming irrelevant unless it can respond to the evolving needs of the business community. In partnership with firms, business schools should offer the education and self-development opportunities managers need. But to do this requires understanding the components of effective managerial performance.

2. M.B.A. education in the New Millennium

Since its inception at the beginning of the 20th century, M.B.A. education has gone through distinct phases. From 1900 through 1955, many of today’s most prestigious institutions were created. Yet during this initial period they remained a relatively unimportant source of managers for U.S. corporations.

Between 1955 and 1960, the business community challenged business schools to “get serious.” The schools responded by upgrading the quality of faculty and other resources, and

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succeeded in becoming first-class institutions. A significant component of this coming-of-age was a closer alignment of M.B.A. curricula with traditional university values.

During the next 25 years, M.B.A. education boomed. The annual number of graduates nationwide exploded, going from about 5,000 to 70,000. Business schools became important suppliers of managerial talent to U.S. firms, and despite large fluctuations in economic and business conditions, the schools flourished.² Today, M.B.A. degrees adorn the walls of many corporate suites of top U.S. corporations.

Starting around 1985, business leaders and students challenged schools to make M.B.A. programs more relevant to their needs. Businesses require a broad range of skills and effectiveness from those they hire. Students also want more. M.B.A. candidates today are older than their earlier counterparts, and the real-world work experience they bring to the classroom makes them impatient with the academic concerns of their teachers.

Today we stand on the threshold of a fifth phase in the development of M.B.A. education. Schools have two options. They can continue to do business as usual and risk growing irrelevance. Alternatively, they can re-evaluate their mission and operations, and devise educational agendas that have significant added value for both students and businesses.

3. Components of effective performance

In evaluating our activities at Chicago, we have asked two questions: How can we enable our students to achieve *exceptionally high levels of performance* on a consistent basis? How can we *add value* to our students in a way that endures throughout their careers?

In our view, high performers are *smart, savvy, and insightful*. “Smart” means they have a lot of knowledge and know how to apply it. Being “savvy” means knowing what they want to achieve and how to do it. And “insightful” means they can learn and grow from their experiences. To explain the choice of these particular terms, consider the components of effective performance.

Effective performance is the result of actions. But what determines the quality of actions? Figure 1 provides a schematic representation of three important determinants of action in business settings, namely, *conceptual knowledge, domain knowledge, and action skills*.

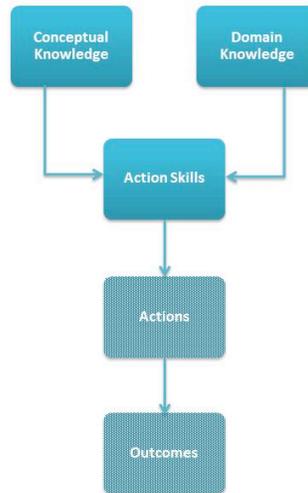
a. Conceptual knowledge

Conceptual knowledge is acquired through the formal instruction and learning experiences typically associated with educational institutions. It includes the formal education students receive in business school, such as training in economics, accounting, finance, statistics, marketing, organizational behavior, and so on. This body of transmitted wisdom constitutes the bulk of most M.B.A. programs. It covers both pertinent business concepts, and ways of thinking in a rigorous, logical fashion. The value of conceptual knowledge is that it develops the ability to think broadly and rigorously in business settings.

A solid foundation of conceptual knowledge is essential to effective performance and is acquired most effectively within educational institutions. Medical students, for example, do not have to re-discover through observation and experience how blood circulates. Where this knowledge already exists, it makes eminent sense to use classroom instruction.

Elements of Performance

Figure 1



Even if the body of theory and concepts is incomplete, a solid grounding in conceptual knowledge has numerous advantages. In 1929, Alfred North Whitehead wrote,

*The really useful training yields a comprehension of a few general principles with a thorough grounding in the way they apply to a variety of concrete details.*³

Consider the economic concepts of sunk cost or discounted cash flow. A “thorough grounding” can prove invaluable if students are able to recognize situations in which the concepts are applicable in their subsequent careers.

In 1932, G.K. Chesterton argued even more strongly for the value of conceptual or theoretical training. He said,

*The more serious is the trouble, the more probable it is that some knowledge of scientific theory will be required; and though the theorist will be called unpractical, he will probably be also indispensable.*⁴

A thorough grounding in theory has long been a hallmark of the University of Chicago Booth School of Business, and is much valued by both our alumni and the business community. In a 1956 paper titled “The Chicago Approach to Business Education,” James H. Lorie articulated the rationale for providing theory within an educational institution. He justified this approach using the economic concept of comparative advantage:

A university has its greatest comparative advantage in teaching underlying scientific knowledge and procedures; it has least advantage in trying to teach the detailed application of this knowledge...

We believe that this method of formal education best equips students to continue their education through experience once they have left the educational institution. They are better equipped to put their untidy and unpredictable experience into a meaningful framework; they are enabled to learn better from their reading and to know what to read; they are acquainted with sources of new knowledge; they are sensitized to important questions implicit in what they see and do during the course of their business career.⁵

While we agree that universities enjoy considerable comparative advantage in teaching conceptual knowledge, we do not believe this is their only comparative advantage. Business schools can – and should – go beyond the teaching of conceptual knowledge.

b. Domain knowledge

Individuals acquire this knowledge by working at their jobs in particular firms and industries. It is pertinent to specific spheres of activity and may be acquired by experience or through formal firm or industry training programs. In addition, it can include knowing customers and suppliers of a particular business, a network of people in the work environment, a company's specific operating procedures or an understanding of corporate culture. The key point is that domain knowledge is acquired through hands-on training and experience in particular job settings, and is relevant to that domain.

Many studies have demonstrated that domain knowledge takes time to acquire and is not necessarily transferable to other areas.⁶ It takes years of grueling practice to become a tournament-class tennis player, and this will not make one an outstanding golfer or squash player even though all three sports require considerable physical coordination. Similarly in business, expertise in finance does not necessarily mean success in sales; and effectiveness in, say, the trucking business does not guarantee effectiveness in banking. Domain knowledge does not transfer well from one sphere of activity to another.⁷ Yet such area-specific, "practical" expertise is critical to performance. As stated by Roger Peters,

You've got to know the territory. Jobs and Wozniak could not have created the Apple without expertise gained through years of experience with small computers and other electronic devices. We become creative not by working on creativity as such but by mastering a domain.⁸

Business schools should not attempt to teach domain knowledge. There is no consensus on what specific domain knowledge should be covered; the acquisition of such expertise is a lengthy process; and employers are much better able to impart this knowledge according to their specific needs. On the other hand, business schools should teach students to respect the

importance of domain knowledge in taking effective action. Moreover, they can impart skills that accelerate the ability to acquire appropriate domain knowledge.

c. Action skills

Conceptual and domain knowledge are critical for high levels of performance, but they are not sufficient. Knowledge must be translated into action, and that requires *action skills*. These are the skills that enable individuals to set goals, to “sell” others on the value of those goals, and to work with and through others in their implementation. The value of action skills lies in the ability to achieve desired outcomes. Without action skills, conceptual and domain knowledge cannot lead to high levels of performance.

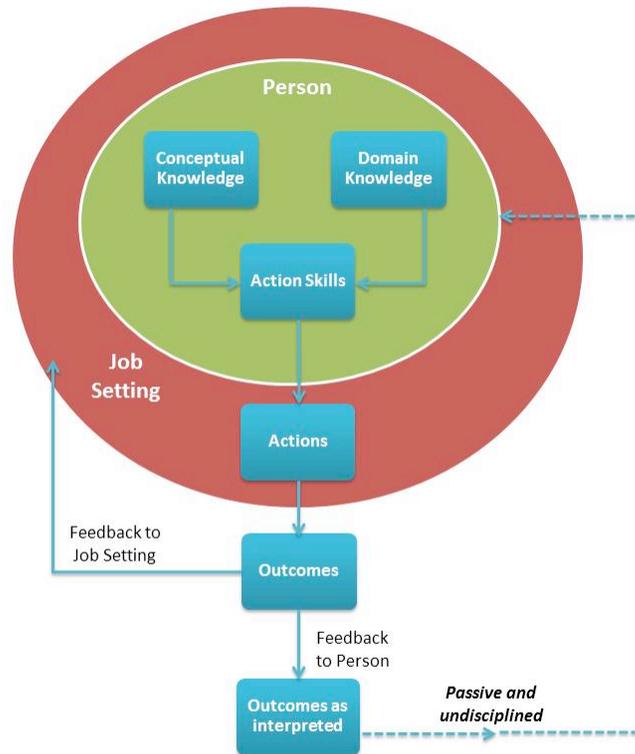
Where and how are action skills acquired? Most managers acquire them on the job, though business schools and firms often provide specific training in skills such as communication and presentation. To a large extent, it’s a haphazard process. Yet there is no reason why the acquisition of action skills should be left to chance. “Hard” science can still be used to impart “soft” action skills. R.W. Revans’s many writings on action learning programs make the argument that, in the arena of “practical action,” the scientific method is a powerful tool for business education.⁹

Effective performance is a function of conceptual knowledge, domain knowledge, and action skills. Colloquially, we describe managers with high levels of conceptual and domain knowledge as *smart*, and *savvy* if they have good action skills. But that’s not enough. Knowledge and skills need to evolve across time, and this depends heavily on how managers learn through experience.

d. Insight skills

An old adage tells us that experience is a person’s “oldest” and “best” teacher, and there’s little doubt that we learn from experience. The questions are: What do we learn? and, Are the lessons of experience helpful or harmful to good performance?

To explore this issue, consider Figure 2. This is an extension of Figure 1 and emphasizes several points. Conceptual knowledge, domain knowledge, and action skills reside *within a person*. Actions take place *within a job setting*. In turn, the outcomes of actions affect the job settings in which they occur. This may be precisely the intent behind the action and is illustrated by the feedback loop linking the outcome back to the job setting on the left-hand side of Figure 2.



For example, imagine an action taken to handle a customer complaint that changes the customer's attitude toward the firm.

Finally, feedback affects not only the job setting but, as illustrated on the right-hand side of Figure 2, has an impact on the person taking the action through his or her *interpretation* of the outcome. What then affects the interpretation of outcomes and how people learn from experience?

Many studies have demonstrated that people develop great facility in encoding or interpreting experience by simply associating actions with outcomes.¹⁰ Moreover, for most tasks, this process occurs automatically in a passive and undisciplined way that requires little or no conscious effort. It is highly efficient behavior – people have learned how to learn.

Still, passive learning has its limits. It requires feedback that is timely, accurate, and relevant to the issues under consideration. Consider, for instance, the development of motor skills involved in learning to ride a bicycle. Here, feedback is both pertinent and immediate. Failure to correct an imbalance causes the rider to fall. Now imagine learning to ride a bicycle on a planet governed by different and unknown laws of gravity, where an imbalance does not necessarily lead to falling immediately. Instead, falling can be caused by an imbalance that occurred some time ago. In these circumstances, passive learning will not teach you how to ride a bicycle. In fact, your experience may teach you the wrong things.

There are many important situations where the interpretation of feedback is ambiguous, and in which individuals have enormous difficulty learning the *right* lessons from experience.¹¹ If anything, feedback may reinforce erroneous beliefs, and even smart people fall into this trap.

To illustrate, consider the case of Benjamin Rush, a highly respected physician, professor at the first medical school in America, and one of the signatories of the Declaration of Independence. He advocated and practiced phlebotomy as a cure for febrile illnesses in the belief that the cause was excessive stimulation and excitement of the blood. When Rush fell ill with yellow fever, he prescribed plenty of blood-letting for himself. As reported by Eisenberg:

From illness and treatment combined, he almost died; his convalescence was prolonged. That he did recover persuaded him that his methods were correct. Neither dedication so great that he risked his life to minister to others, nor willingness to treat himself as he treated others, nor yet the best education to be had in his day was sufficient to prevent Rush from committing grievous harm in the name of good. Convinced of the correctness of his theory of medicine and lacking a means for the systematic study of treatment outcome, he attributed each new instance of improvement to the efficacy of this treatment and each new death that occurred despite it to the severity of the disease.¹²

Though this incident is some 200 years old and is taken from the field of medicine, it's not difficult to realize how comparably self-fulfilling and self-defeating actions can occur in business today. There are many situations where the choice of an action either prevents learning or reinforces existing beliefs without testing them. Consider decisions involving personnel selection (What happens to candidates who were not selected?), or certain types of investments and advertising expenditures.

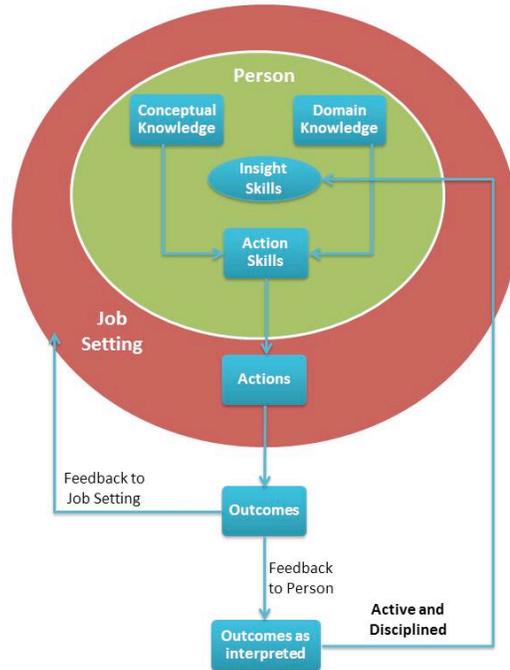
As illustrated in Figure 3, the interpretation of feedback in the form of outcomes needs to be an *active* and *disciplined* task governed by the rigorous rules of scientific inference. Beliefs must be actively challenged by seeking possible disconfirming evidence and asking whether alternative beliefs could not account for the facts.¹³ These activities provide the foundation for *insight skills* and are the time-tested methods that were followed by people who gained some of the world's greatest insights, such as Bacon, Faraday, Pasteur, and Darwin. Indeed, when he compared the inferential methods of Spencer and Darwin, Will Durant made the following, telling comment:

Spencer began, like a scientist, with observation; he proceeded like a scientist, to make hypotheses; but then, unlike a scientist, he resorted not to experiment, nor to impartial observation, but to selective accumulation of favorable data. He had no nose at all for "negative instances." Contrast the procedure of Darwin, who, when he came upon data unfavorable to his theory hastily made a note of them, knowing that they had a way of slipping out of the memory a little more readily than the welcome facts!¹⁴

Darwin's insights have endured. But how many have heard of Spencer?

Elements of Performance

Figure 3



Our framework sheds light on the troublesome topic of intuition that is frequently discussed in business education, both favorably and unfavorably. Intuition is the result of learning from experience: People are not born with intuition! And the quality of intuition depends on how one extracts and interprets experiential data. In situations involving good feedback, it is easy to acquire good intuition. When feedback is ambiguous, the quality of intuition depends on the effectiveness of insight skills.

Our goal as educators is to help people become not only *smart* and *savvy*, but through the acquisition of insight skills, also *insightful*. Moreover, these characteristics are mutually reinforcing. Good insight skills accelerate the acquisition of both domain knowledge and action skills as well as the application and updating of conceptual knowledge.

4. Responsibility

To enable students to achieve exceptionally high levels of performance, the responsibility for learning should be shared between business schools, employers, and the students themselves. Many students are smart entering business school. And to make them smarter, business schools and employers should each teach what they teach best: Conceptual knowledge in business schools, and domain knowledge on the job.

Ultimate responsibility for learning action and insight skills – to become savvy and insightful – rests with the students themselves. These skills cannot be acquired through study

alone but require constant practice over many years in real-world situations. Students often are fascinated by inspirational accounts of others' successes. But "war stories" rarely are useful because the action and insight skills involved developed from each individual's unique set of talents and experiences. In addition, people must be motivated to keep practicing and improving their skills. Applying the concept of "continuous improvement," the permanent honing of a person's action and insight skills should be seen as a precondition for *consistently* performing at exceptionally high levels.

While students should be responsible for acquiring and developing their own action and insight skills, neither business schools nor firms are absolved from responsibility in this process. On the contrary, both can play critical roles.

Business schools can provide students with a conceptual understanding of action and insight skills, their necessity, why they are difficult to acquire, and their relations both to each other and the two forms of knowledge. Students need a clear understanding of the components of effective managerial performance. Schools further need to provide students with opportunities for acquiring action and insight skills so that good habits are formed before they are tested in business itself.

Business schools can empower students to take responsibility for their own learning. Too often students behave like passive customers: They pay money and they receive an education. If the education doesn't seem to work, or they don't like it, then it's a bad product. In continuing education programs, the entertainment value provided by faculty plays a large role in reactions to courses. Without arguing against entertaining teaching, or against understanding the concerns and demands of students, we believe that if faculty pay too much attention to the superficial dimensions of student demands, they can unwittingly reinforce a passive customer attitude among students.

One implication of the comparative advantage argument Lorie used in "The Chicago Approach to Business Education" is that it would be wasteful for business schools to become involved in activities other than the teaching of conceptual knowledge. We agree that it would

A Retrospective and Look Forward

The question addressed in our selected paper from 1992 can be seen as providing a framework for an investment decision. Specifically, in what activities should a manager invest in order to maximize future career performance? A related issue centered on how business education – both formal and informal – could play a role in this process.

Now, two decades later, the same questions remain relevant. We still see the need for a framework. Indeed, if the manager does not have some clear conceptual ideas to guide his or her development, the consequences of the alternative will be left to chance. It is thus critical that managers play an active role in guiding their own development.

The framework we proposed was inspired by our work in the Booth School's management laboratories as well as theoretical work in psychology and management. We also greatly appreciated the insights underlying the Chicago approach to management education

that emphasizes the importance of recognizing that educational institutions have a comparative advantage in providing conceptual knowledge to their students but not in “teaching” domain knowledge that is specific to different areas of business activity.

We felt then, as we do now, that the traditional Chicago approach needed to be augmented with a focus on action and insight skills. A manager may be very knowledgeable, but unless he or she can also take and implement decisions in fast changing environments the probability of success is small. In other words, managers need to develop skills that facilitate the taking of actions and also the ability to learn from experience in domains for which prior exposure to knowledge is insufficient. Formal education goes a long way in developing people who are *smart* but managers also need to be *savvy* and *insightful*. Underlying our approach is the notion that managers should be empowered to take control of their own professional development and that we should help them to develop insight skills that would make them effective life-long learners. Becoming more competent—even wise—at a younger age has real payoff.

When we consider the paper today, we have three reactions. First, we still think that the overall framework makes conceptual sense and are surprised to find that the piece contains several ideas that we have developed in subsequent years concerning, for example, the nature of intuitive processes. (R.M. Hogarth, *Educating Intuition*, Chicago, 2001) Second, we don't think that the concept of “action skills” is fully explicated in the original piece. Third (and perhaps related to the second), we are struck by the need to help people find ways of implementing the framework.

So what do we mean by “action skills”? For us, this concept includes the vast array of skills involved in transforming the “mental” decision to do something into a successful, practical reality. Consider, for example, the decision to launch a new product. In addition to technical and market knowledge, success will depend on a relevant set of actions skills that can involve elements of communication, persuasion, motivating others, teamwork, and so on that enable the manager to guide the process of implementing the decision. Clearly, different decisions will require different sets of action skills but some might be effective across a range of situations, e.g., good communication skills. The important point from our perspective is that every situation provides opportunities to develop action skills. Once managers begin to master the art and science of learning through experience, the processes implied by our framework can become a successful self-fulfilling prophecy.

As in management, the value of our framework should be judged by the extent to which it can be successfully implemented. Over the years, we have talked with managers who have experienced both success and failure in using our ideas. The failures have been largely our fault. We were not fully cognizant of the fact that many managers did not want to acknowledge deficits in their action and insight skills, or that these deficits could be reduced through experimentation and practice. We have also often asked managers to do too much

within the concepts of the framework, and when effort is not rewarded with immediate success, they are quick to stop trying.

We now believe that successful implementation involves starting with modest learning ambitions but keeping the long-term goal of professional self-development clearly in mind. The work required in strengthening action and insight skills needs to be viewed as an ongoing effort similar in some ways to changing to a “healthier life style.”

We favor an approach in which, after assessing one's level of skills, attempts are made to develop at most only two or three skills at a time. Concentrating on a few specific skills has several advantages. First, the learning process is less daunting. Second, one can isolate how one's behavior affects outcomes more clearly. And third, success with one skill can breed success with others. As demonstrated in other areas of management, slow, continuous processes of improvement can have large aggregate effects across time.

To illustrate, a useful trick to remind oneself on a daily basis about needed work on a specific action skill is to embed some mention of it in your email password. Logging on provides a “zero” cost reminder to keep the skill salient. When you move on to other skills, change your password! Our colleague and friend, Linda Ginzler, has brought our framework into many of her classes at Chicago Booth over the past two decades. She advises students that a crucial step in developing insight skills is to actually collect the data of their experiences. Stimulated by writing, this small action replaces the “bad habit” of simply thinking about taking action. She uses a number of visual devices to remind them to write things down, experiment and then reflect systematically on the data obtained. The result: people are better able to connect the dots and see patterns and themes in past behavior; they become their own coach.

Two dimensions of learning also motivate the implementation of this framework: fun and competence. As humans, we enjoy activities that are “fun” and we are motivated by activities that make us feel more competent. At an attitudinal level, then, we would add to our framework the admonition to seek fun in the process of learning. We make no claim that having fun will guarantee learning the right lessons from experience, but it will undoubtedly increase the probability that you do so and thereby increase your competence.

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be wasteful for business schools to teach domain knowledge. Still, business schools have considerable comparative advantage over firms in getting students started on learning both action and insight skills and these, in turn, greatly facilitate the acquisition of domain knowledge through business experience.

Business schools enjoy advantages in three areas that are critical to learning from experience: experimentation, feedback, and practice. Schools can function as laboratories in

which students experiment and practice action and insight skills without downside risks to their careers. In addition, fellow students, faculty, and staff can provide frequent feedback, untainted by the personal or political factors within an organization. Finally, an educational setting provides time and opportunities that are difficult to find in a job: To practice different skills explicitly, to reflect on levels of achievement, and to spend time remedying deficiencies that would be difficult to examine in actual job settings.

These advantages and opportunities do not exist in all business schools. They must be created. Table 1 summarizes the arguments of this section.

Table 1 Elements of Performance: Responsibility and Means		
<u>Elements</u>	<u>Responsibility</u>	<u>Means</u>
<i>Knowledge:</i>		
Conceptual	Faculty	Study
Domain	Firm	Work
<i>Skills:</i>		
Action	Students (but help from faculty and firm)	Practice
Insight	Students (but help from faculty and firm)	Practice

5. Barriers to acquiring action and insight skills

It is difficult to learn from experience. In addition to the issues enumerated above, individual and social factors get in the way.

Smart individuals may have particular difficulty in learning from experience.¹⁵ This can pose particular challenges for the leading business schools which tend to recruit smart students – and then try to make them smarter.

Typically, these students are considered smart because of their high capacity for learning *from instruction*, as measured by test scores, rather than their talent for learning from experience.¹⁶ In fact, if their success in life to date is based on instructional learning, why should they invest in learning from experience?

Virtually all of these students' learning experiences have taken place in neatly structured environments, where instructors define the rules *a priori*. This is hardly good preparation for operating in more free-flowing environments where discovering the rules *is* the main task at hand.

M.B.A students, most of whom are still relatively young, are often given the benefit of doubt if they fail. Such leeway dampens the motivation for self-examination. If anything, a youthful cockiness, or a desire to protect their own positive self-images, might lead these students to attribute their failures to other people or factors.

Learning action and insight skills is difficult and requires willingness on the part of the individual in at least four different areas: To question and alter one's beliefs in the light of new

data, to recognize the importance of multiple viewpoints, to experiment, and to take risks and deal with the consequences of failure.

At the level of social interaction, learning from experience can be difficult because of the inherent risks of experimentation. Feedback, if offered at all (“If you can’t say anything nice, don’t say anything at all”), often is inadequate. Feedback in firms often comes in the form of annual or semi-annual performance reviews, which in most cases is too little, too late. To be effective, feedback should be specific and closely follow day-to-day decisions and actions. For example, if someone fails to make a good presentation at a meeting, he or she should be told immediately – not six months later at a performance review. When feedback is not part of the organizational culture, seeking it can entail considerable downside risk for the individual.

Managers need to give and receive feedback. When this process occurs daily, the acquisition of action and insight skills can be considerably accelerated.

6. Further implications

Our framework stresses the importance of having each component of managerial performance continually strengthen the others in a self-reinforcing cycle. For instance, practicing insight skills can improve action skills; these, in turn, can highlight the need to revise or acquire additional conceptual and domain knowledge. In this sense, the student or manager can master the skills of “life-long” learning. While we have emphasized the need to practice action and insight skills, conceptual knowledge also must be constantly exercised; otherwise it will atrophy.

The concept of students as *active* learners, taking charge of their own development, is also central in our framework. This is critical because managers cannot expect to have well-defined programs of “things to learn” as they progress through their careers. Instead, they will be confronted with new problems that require innovative solutions and plans for implementation. Domain knowledge and action skills are the more visible components of managerial performance. However, unless they are grounded in conceptual knowledge and insight skills – both of which are less visible to others – they will not survive as long or generalize as meaningfully in new situations.

Our framework offers insights for other forms of business education aside from the typical two-year M.B.A. programs. Both educators and employers can tap this framework as they formulate in-house training plans to foster high-level performance. What knowledge and skills do people lack? How can these best be acquired as employees progress through their careers?

In terms of continuing education programs, we stress four points. Because the different types of knowledge and skills can become self-reinforcing, our framework first suggests the need to involve both firms and universities in the *joint* design and delivery of educational programs, and to view these in terms of long-term development. And because both practice and feedback are essential to acquiring skills and knowledge, there is little advantage to short programs unless these are limited to certain specialized topics.

To have the different components of our model reinforce each other, the teaching of conceptual knowledge should be linked directly to the domains in which managers operate. Managers also need to be taught both insight and action skills explicitly because most acquire

these haphazardly. And yet, managers have the advantage of being able to practice these skills daily in the workplace. Finally, managers must be empowered to take control of their own development.

These ideas can be applied immediately in executive education programs with “sandwich” structures that intersperse periods of formal schooling and work. In addition to allowing opportunities for practice and feedback, this arrangement allows individuals to share their learning experiences across time. This sharing also facilitates learning from the experiences of others and provides emotional support and reinforcement for the learning process itself.

Executive education is sometimes used to help people *unlearn*. An industry which has long relied on specific domain knowledge may need this process to help employees cope with change caused by new technology or other factors. By focusing on insight skills, or learning the right lessons from experience, such educational programs can help people question what they know and adapt to new realities.

7. Conclusion

Our goal is to develop people who are smart, savvy, and insightful because these attributes are essential to achieving exceptionally high and consistent levels of performance. To reach this goal requires a partnership between business schools, firms, and students committed to the value of good feedback and continuous improvement of and by the individual.

We conclude with an anecdote. After we had written a first draft of this paper, one of us had lunch with an alumnus who is president of a large U.S. corporation. This alumnus stated two telling consequences of today’s and tomorrow’s flatter, less hierarchical organizations. First, it is possible for new employees to make an immediate impact on the organization if they are solution-oriented and effective in presenting and selling their ideas. Influence is much less based upon position and much more on an individual’s performance capabilities. It is relatively easy to have access to those with power and budgets. Second, it is now “sink or swim” for the new employee because there is less time and fewer people to mentor others. Immediate performance is not only possible; it is expected.

We believe these comments emphasize the importance of the action and insight skills that we are committed to helping our students acquire. These, however, are not an end in themselves. They improve performance by knowledge acquired during M.B.A studies as well as the domain knowledge that can be gained through work experience.

Footnotes

¹ Without implying endorsement of the ideas expressed in this paper, we wish to thank the following for comments on a previous draft: F. R. Heath, Stephen J. Hoch, Steve Lorsch, Albert Madansky, Harry V. Roberts, and Bill Whitney.

² This phase also was marked by increased scholarly output by business school faculties.

³ A. N. Whitehead (1929). *The aims of education and other essays*. New York: Macmillan.

⁴ G. K. Chesterton (1932). *All is grist*. New York: Dodd, Mead and Company.

⁵ Excerpted from a talk given in 1956 by James H. Lorie, former associate dean of the Booth School of Business.

⁶ See, for example, M. T. H. Chi, R. Glaser, and E. Rees (1983). Expertise in problem solving. In R. Sternberg (Ed.), *Advances in the psychology of human intelligence*. Hillsdale, NJ: Erlbaum.

⁷ Professor Joe Williams, our colleague in the English department at the University of Chicago, makes the point that even experienced lawyers, who have learned to write well in a particular specialized domain, have considerable difficulty writing well when they change specialties (personal communication, January 1992).

⁸ Roger Peters (1987). *Practical intelligence*. New York: Harper & Row, p. 303.

⁹ See, for example, Alan Mumford (1987) (Ed.) *"Action learning." A special issue in honour of Reginald W. Revans*. Bradford, England: MCB University Press.

¹⁰ For a review of many studies and theories of learning, see, e.g., E. R. Hilgard and G. H. Bower (1975). *Theories of learning* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.

¹¹ See, for example, H. J. Einhorn and R. M. Hogarth (1978). Confidence in judgment: Persistence of the illusion of validity. *Psychological Review*, 85, 395-416.

¹² L. Eisenberg (1977). The social imperatives of medical research. *Science*, 198, p. 1106.

¹³ The different forms of learning implicit in Figures 2 and 3 are similar to what Chris Argyris has referred to as "single loop" and "double loop" learning, respectively. See, for example, C. Argyris (1991, May-June). Teaching smart people how to learn. *Harvard Business Review*, 99-109.

¹⁴ W. Durant. (1961). *The story of philosophy*, page 354. New York: Washington Square Press.

¹⁵ See Argyris, *op. cit.*

¹⁶ We are aware that many schools do use criteria other than academic achievement in their selection procedures. However, the self-selecting pool of applicants is heavily biased in favor of those with academic credentials, and academic credentials are given substantial weight in selecting from that self-selecting pool.

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Professor Davis created the New Product Laboratory in 1978, which was designed to complement the traditional lecture and case study curriculum by providing a real, action-oriented component to the MBA program. Over its more than 30-year history, several hundred companies have sponsored the laboratory, representing fields as diverse as package goods, high technology, durables, and financial services.

In 1989 Professor Davis initiated an innovative program for *Leadership Exploration and Development (LEAD)* at the Booth School of Business. This required, non-credit course for full-time students is designed to strengthen general management communication and interpersonal skills through experiential learning.

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