Mayberry Newsletter

The W. E. Mayberry Center for Quality and Performance Excellence

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Business Education Integration: A Performance Context

by Dr. Curt Reimann

Introduction

Business education comes under a lot of criticism compared with parallel education programs in medicine, law, science, and engineering. Such criticisms range from what is taught to delivery. In a recent *HBR* article entitled "No, Management is Not a Profession," the author (Barker) affirms such criticism, but goes further, saying that "some business skills can't be taught in a classroom. They have to be learned through experience." The article goes on to say that "business education is more about acquiring the skills of integration than about mastering a set body of knowledge" and "the key is to recognize that integration is learned rather than taught: it takes place in the minds of MBA students, who link the various elements of the program." Moreover, Barker emphasizes that "business education is not one-size-fits-all." Barker's *HBR* article also cites McGill's Henry Mintzberg's belief that MBA programs straitjacket managers by encouraging development of narrow functional expertise rather than the integrative skills that define effective management.

Although critics of business education point to a variety of indicators and consequences, weak integration appears to be the most common and far-reaching of the criticisms. On the other side of this continuing examination, it should also be acknowledged that, over the years, business schools, business education leaders, texts, etc., in recognition of the breadth and depth of the integration challenges, have created a variety of tools and approaches to address them. Instruments such as multi-student projects, team teaching, visits by business leaders, internships, case studies, simulations, community projects, etc., often emphasize better integration of discipline knowledge as a key objective. In addition, many schools use "capstone" courses, such as strategy or special projects, in large part, to pursue better integration. Overall, it appears that critics and defenders of business education agree on both the importance and the difficulty of integration. This speaks to a continuing need to explore mechanisms to improve, support and evaluate integration. However, it should be noted that academic practitioners and those who employ business graduates might not necessarily agree, except in very broad and general terms, on what integration means in practice.

Discipline Linkage: The Problem or a Symptom?

Often, the criticisms of integration and proposed remedies appear to translate into the view that academic discipline linkages are themselves the meaning of integration and/or the main purpose of integration. We suggest an alternative view here: that students' purported weak understanding of discipline linkages may actually be a symptom of poor integration, but not its primary cause. The larger issue we perceive is inadequate contexts or frameworks for students' acquiring and "making sense" of facts, knowledge, and opinions. Such sense-making, or ongoing construction of understanding, is the essence of experiential learning. We believe that efforts to improve integrative learning by better focus on discipline linkages would not be as effective as focusing on contexts in which such linkages occur as means, not as ends. Within such contexts, understanding discipline linkages should still be an important objective, but would need to make clear the purposes of such linkages and their varieties. We believe that the most appropriate questions to pose in response to the valid criticisms and acknowledged challenges are: (1) What curricular and experiential learning (bodies of knowledge and related bodies of experience) should be used or created that not only promote understanding and

acceleration of integration but also appropriately illustrate meaningful applications of disciplines? ; and (2) How do we more directly seek to build students' *capacity* for experiential learning, so that it persists beyond formal education? Making explicit what is implicit in these questions: greater attention is needed to develop curricular and school-based mechanisms for accelerating student integrative understanding and building capacity for life-long learning.

Integrating Contexts

The common view of business disciplines is that each comprises a set of concepts, practices and tools sometimes called "bodies of knowledge". They lend themselves well to academic specialties, texts, courses and grading. They are also amenable to focused case studies that illustrate discipline bodies of knowledge but which also might help "stretch" understanding and show linkages across disciplines. However, such cases might also unwittingly reinforce specific, and perhaps narrow, bodies of knowledge and/or linkages. Our view is that the value of case studies or other "real-life" educational exercises and tools depends greatly upon their underlying context(s). We believe the appropriate questions are:

• How are contexts selected or designed to avoid narrow focus or "partial" or "contrived" integration?
• If disciplines are linked in courses or cases with the view to enhance integration, how is context chosen or structured so that linkages used do not appear to define *the way* that the disciplines "connect"?
• How might case study and curriculum designers anticipate and enable creative uses of disciplines, and of discipline linkages, without primary focus on such disciplines themselves?

Such questions shift the focus from discipline linkages to effective integrating contexts.

Integrating Context: Characteristics

In our attempt to shift the focus from discipline linkages to integrative contexts, we begin by seeking criteria that might help guide the development of such contexts. Integrating contexts should be:

• **Authentic:** Contexts should relate directly to relevant, important and enduring organizational purposes and requirements;
•**Experiential:** Contexts should have high experiential content, revealing key aspects of organizations that business students and business graduates actually experience, and should be cognizant of, in their studies, subsequent work lives, and as consumers and citizens;
•**Systems oriented:** Contexts should help students develop holistic views of organizations' larger purposes, strategies, objectives, requirements, and operations. This orientation should help promote the view that applications of business disciplines are varied and dynamic, not "cut and dried" or "packaged" routines;
•**Broadly applicable:** Contexts should span across all sectors of the economy that employ business graduates - manufacturing, services, government and non-profit organizations;
•**Open and Dynamic:** Contexts should readily accommodate changes in organizations' goals, business models, strategies, practices, technology and discipline applications;
•**Tied to well-defined bodies of knowledge:** Contexts should be "building blocks" of business education; and
•**Easily adapted to business education tools:** Contexts should lend themselves to texts, cases, projects and other pedagogical tools and mechanisms.

The above characteristics are intended to help focus on what we seek from broad integrating contexts - to aid in their selection, design, use, and evaluation. A central part of the "logic" underlying this set of context characteristics is that contexts accommodate all business disciplines, but that such disciplines arise as means, not as ends.

Performance as a Context for Integration

In previous newsletters, we have discussed topics in performance and performance management, including content, trends, and business education applications and coverage. Below we outline the potential utility of performance as an integrating context. By performance we mean organizations' achievements relative to key requirements, taking into account all stakeholders, including customers, employees, investors and the public. By performance management (PM), we mean the concepts, practices, initiatives and tools to understand, manage, and improve organizations achieving their goals, built upon their purposes and strategies.

Included within PM are:
• A systems orientation; derived from strategy and supporting strategy, taking into account the needs/ expectations of all stakeholders, as well as competitive factors;
• Process understanding and management;
• Comprehensive metrics/ measures/indicators and their uses, derived from purposes, strategies and goals, supporting "management by fact" and organizational alignment;
• Improvement: incremental and breakthrough;
• Assessment; this includes analysis/trends/causation/comparisons/ benchmarks.

Performance versus Context Characteristics

Authenticity

Organizational performance is a core issue for all organizations: manufacturing and service firms, healthcare, education, government agencies at all levels, and non-profit organizations. Financial and non-financial measures of performance are in wide use and growing rapidly.

Experiential

Increasingly, leaders' and employees' performance is tied to organizational performance and, in many cases, subparts of such organizations. Important subparts of many organizations are built around business and technical disciplines. Also, as consumers and citizens, performance is a significant part of what is actually experienced or observed by students and graduates.

Systems Orientation

PM, including measurement and analysis, increasingly relies upon holistic views of performance - ones that trace performance and performance problems to "root causes." "Systems thinking" and "integration" are inherently related. However, the latter makes little sense if

it is not derived from the former. Systems thinking and performance goals "drive" integration and "drive" applications of business and other specialty disciplines. Changes in organizational goals and strategies can have major influence on applications of discipline knowledge.

Broad Applicability

Organizations in all sectors rely upon performance indicators of many types. Although organizations in different sectors might have quite different missions and goals, there are close parallels in their PM systems. This includes all aspects of efficiency and effectiveness.

Open and Dynamic

All elements of PM noted above are inherently open and flexible, because they are tied to real-time indicators used in decision-making. New areas of emphasis such as energy use, sustainability and innovation are easily accommodated. The availability of measures and comparisons accelerates the spread and diversity of PM practices. Because basic knowledge in business education is slower to evolve than applications of such knowledge, and performance drives applications, performance is an effective vehicle to capture organizational dynamics.

Meaningful Body of Knowledge

PM is a rapidly emerging body of knowledge. It is gaining in use and taking shape largely outside the academic arena. The elements of PM outlined above are common to most uses. However, PM is not yet an academic mainstream discipline. As a result, how it relates to other disciplines is not yet well described, even though in practice, PM relies upon all organizational subunits and their discipline-based bodies of knowledge.

Adaptation to Business Education

PM lends itself to holistic and to "before-after" cases. Students' and graduates' experiences as consumers and employees should be "awakened" via a performance outlook. Also, diagnosing "causation" is an important component of critical thinking. Such diagnosis can be applied to discipline performance and roles, and related to strategy. Of particular importance is the application of PM to understanding varieties of business models, business model selection and evaluation. This is critical to bridging across strategy, goals, metrics and operations.

Summary and Conclusions

Business education tends to receive more criticism than other types of professional education. Inadequate integration of discipline knowledge appears to be the most persistent and far-reaching of the criticisms. However, overall, critics and defenders of business education seem to agree on the importance, difficulty and long-term experiential nature of integrative learning. Some argue that better treatment of discipline linkages is the key to improving understanding of integration. We pose an alternative view - that inadequate understanding of discipline linkages is a symptom of the integration problem, not its cause. Moreover, we believe that building students' capacity for "sense-making" of business disciplines and of varieties of organizations, in school and beyond, would be enhanced via better integrating contexts, learned in school. Based on this view, we outline a set of characteristics we think contexts should have - ones that should strengthen such capacity building. Then, using organizational performance as a context, we make brief comments on how this context responds to each of the proposed context characteristics. Overall, a context based on performance would appear to be an effective choice for building capacity for long-term integrative learning.

Dr. Reimann and Mayberry Graduate Assistant Tyler Hodge at the Quest for Excellence Conference

Activities and Accomplishments

• Dr. Curt Reimann serves as the Chair of the Quality Management Subcommittee of the Veterans Advisory Board of Dose Reconstruction (VBDR). VBDR, created by Congress, serves the Defense Threat Reduction Agency and the Department of Veterans Affairs. VBDR addresses veterans' compensation derived from exposure to radiation in WWII and in atomic testing following WWII.

• Dr. Curt Reimann serves on the advisory board of the TTU School of Interdisciplinary Studies and Extended Education (ISEE).

• Dr. Curt Reimann was the Keynote Speaker for the Asian Productivity Organization's (APO) Business Excellence Global Conference, in Singapore, Nov. 9-10, 2010. His keynote topic was: "Business Excellence: Great Progress...Greater Challenges"

While attending the APO Conference, Dr. Reimann also presented in two other conference events, as follows:

APO Training Workshop on "Expectations of Baldrige Stakeholders ;" and Panel Discussion on "Driving Excellence in Organizations."

• Dr. Nat Natarajan serves as the Assistant Dean of the College of Business and chairs the Assurance of Learning committee in the college.

• Dr. Nat Natarajan presented the paper "Performance of Private and Public Sector Banks in India: A Comparative Analysis," (with Ravi Jain) at the 41st National Annual Meeting of the Decision Sciences Institute (DSI), San Diego, CA. Nov. 20-23, 2010. It was published in the conference proceedings.

• Dr. Nat Natarajan presented the paper, "Emerging Economies: Are they Centers of Innovation?" at the third Doing Business in India International Conference, held at Institute for Financial and International Management, Bangalore, Dec. 16-17, 2010. The paper was published in the conference proceedings.

• Dr. Nat Natarajan serves on the editorial board of the *Journal of Quality Management*.

• Dr. Nat Natarajan facilitated the meeting on streamlining grant processing at TTU, November 2010.

• Tyler Hodge, the Mayberry Graduate Assistant 2009-10, served on the 2010 Board of Examiners of the Tennessee Center for Performance Excellence (TNCPE). In April 2010, he attended the Quest for Excellence conference in Washington, D.C.

• Josh Simer, the current Mayberry Graduate Assistant, received the 2010 TTU NCAA"Man of the Year" Award.

Mayberry Advisory Board

• The Mayberry Advisory Board met on Tuesday, Nov. 2, 2010. The board members also participated in a panel discussion organized by the MBA students. Earlier they interacted with COB students during the reception and dinner on Nov. 1.

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Patrick Townsend (1941—2010)

The Mayberry Chair team mourns the passing of Pat Townsend, a leader in quality at the national level, and an early contributor to and continuing advocate for the Malcolm Baldrige National Quality Award. In March 2006, Pat was the TTU Mayberry Lecturer.

Pat and his wife, Joan Gebhardt, authored nine books and hundreds of articles on quality management. Pat was an effective proponent for 100 percent employee involvement in quality, employee development and recognition, and organization-wide celebration of achievement. He practiced what he preached, demonstrating repeatedly the benefits to companies' bottom lines and employee growth.

Pat was a decorated 20-year veteran of the U.S. Marine Corps.

The Fall 2006 Mayberry Newsletter contains an excellent feature article about Pat Townsend, written by Ryan Swor, then Mayberry Graduate Assistant.

With the passing of Pat Townsend, the field of quality management has lost one of its finest, most effective and humane voices. We give thanks for his contributions to the Baldrige Award and to TTU.

Life by the Numbers

R. Nat Natarajan

When I was completing my graduate studies more than 30 years ago in the field of operations research, a question that often came up in our class discussions was the practical relevance of the high power mathematical and statistical models we were being taught. The main concern was the lack of data that would make the models work. Soon after completing my doctoral studies, I reviewed a paper on scheduling which had more than a thousand references listed on the topic! The authors had concluded that despite the vast amount of research on the topic, very few of the techniques were ever put to use in industry. It all seemed a waste of enormous intellectual horsepower. Little did I realize then that those years were the cusp of an information revolution that would change the field forever. Fast-forward 25 years and we have the driver of a UPS delivery truck punching a few keys on a handheld device to solve a very complex 'traveling salesman' problem that would produce an optimal delivery schedule in a matter of seconds. Now a business can negotiate with customers on the phone, the delivery dates and price based on the results of a scheduling algorithm - one I might have reviewed years ago - produced in real time.

What has changed is the availability of data. Lack of data is no longer a constraint. In fact, many organizations are awash in it. One of the ways to turn data into value-adding knowledge is by feeding it to the models. Indeed, many organizations in both the profit and non-profit sectors are using *business analytics* - as this marriage of data and algorithms enabled by information technology is called - to gain a competitive advantage. The use of analytical models (e.g., for stocking and promotional decisions by retailers, credit scoring and fraud detection, in medicine, sports, election campaigns and in other areas such as national security to fight terrorism) has become so pervasive that lay persons are not aware of the power such data exert over their lives. That is because these models work in the background, crunching massive amounts of data. In recent years, this power and the capabilities of these models and algorithms are being recognized through the articles and books written on them. They are elevating the scientific basis of decisions in the field of medicine. It has given rise to evidence-based medicine, i.e., making decisions among alternative treatments based on statistical research and evidence. Clearly, business analytics is improving productivity on a large scale in industry, whether it be in the routing of delivery trucks or optimizing revenue and fuel consumption of airlines. Now some schools have started offering graduate programs in business analytics.

One area where these business analytics and models have been particularly effective is in prediction. They have proved to be far superior to the judgment of humans because they aggregate and embody collective knowledge of many experts as opposed to the wisdom of an individual expert. Models are repositories of aggregate knowledge that a single expert does not possess and probably could never possess. They do not suffer from information overload and the cognitive biases and the shortcomings humans have in dealing with many variables and uncertainty. In fact, the models crunch huge amounts of data very quickly. When properly formulated, these models can quantify the impact of each factor that affects prediction and also provide a measure of accuracy involved in estimating the weights for each factor. Experts, whether they are loan officers in a bank or managers of baseball teams or physicians are yielding - albeit reluctantly - in face of irrefutable evidence about the superiority of the models, to the predictions made by models. That does not mean they have to defer to the model completely all the time. The intuition of the experts honed by years of experience is still valuable. For instance, a seasoned manager like Tony La Russa uses models to make pitching and batting line-up decisions, but also employs his instincts to take into consideration intangibles like motivation and morale that individual players bring to the team or a match. These intangibles which do not lend themselves to quantification may be beyond the pale of the models. Similar approaches can be used by human resource managers in their hiring decisions. This is probably the appropriate way to harness the power of these models, i.e., by blending their results with human judgment wherever that judgment is relevant, but does not lend itself to modeling. Experts are not about to be put out of business by equations. They will leave it to the models to do the prediction but put their domain knowledge to a different use by asking the right questions about issues that are to be modeled, suggesting the variables to be included in the model and the type of hypotheses to be tested.

In a free and open society like ours, the use of these models and the data mining practices have enormous implications for privacy and civil liberties. For instance, by expanding the scope of what can be considered as suspicious activity these tools have vastly increased the capabilities of governmental organizations to spy on citizens. In 2008, departments of Justice and Homeland Security and a group of American police chiefs unveiled the Orwellian sounding, "Suspicious Activity Report—Support and Implementation Project," to gather, report and share information on behaviors and incidents deemed suspicious that could be tied to crime and terrorism. The information can lead police to question people who may be using binoculars, taking notes, drawing diagrams, or changing their appearance. These projects become public knowledge because they are tax payer funded and are subject to legislative scrutiny and media spotlight. What generally goes unreported are the activities of private firms that collect huge amounts of data on individuals and later sell the data to the government agencies. These important issues get only a brief mention here because this is not the appropriate forum for their discussion. However, these applications are being vigorously debated in other channels and forums.

The application of data mining and modeling that is proving to be quite con-

troversial is the monitoring of actions of employees in the workplace with the intent of improving productivity. It is one thing for businesses to apply these tools for, say, optimizing inventory levels in the supply chain to improve the bottom line but quite another in terms of their implications when they are being used to drive behaviors of employees. Workforce management software is used to identify and reward productive workers. At IBM, complex productivity models are used to minutely analyze how a particular consultant's skill sets and experience matches with the requirements of a project. Like a basketball coach deciding which particular player best matches up against the other team, the consultant is either assigned to the project or "stays on the bench." What about employees performing more routine and mundane jobs that do not require high skills? They do not have the luxury of staying on the bench while being on the company payroll. Assigning people to jobs is not an issue here. Their jobs are considered as commodities which can be performed by other, interchangeable employees. Service and office jobs are often treated like the ones in an industrial assembly line.

In one sense, all this is a continuation of what was started about a hundred years ago by Fredrick Winslow Taylor and Frank and Lillian Gilbreth with the application of the principles of the scientific management school in industry. The trend in going to extreme lengths to boost efficiency also continues from those days. Frank Gilbreth, a founder, along with his wife Lillian, of the field of industrial engineering, discovered that you could cut the time it took to shave if you used two razors at once-but gave up on the idea when he found that it took an additional two minutes to bandage the resulting wounds! These days, in Japan, some companies monitor how often their employees smile at customers! These ideas were lampooned in cartoons and movies of those days by efficiency expert characters running around with stopwatches. That tradition continues as well with jokes like "Which 18 hour shift do you want to work?"

The impetus for all the minute measurements and modeling comes not only from considerations of traditional bottom line but also from the recent emphasis on performance measurements in both the private and public sectors. It has manifested itself in organizations developing detailed metrics to produce what are variously called scorecards, report cards and dashboards, to measure performance. Popular performance improvement methodologies like Six Sigma emphasize data-based decision making. Increasingly, these measurements, especially in the field of education and healthcare, are focused on outcomes. For example, The Tennessee Board of Regents has changed its basis for funding its member schools from student enrollment to student graduation and retention. While the for-profit sector always had very clear-cut outcomes like profits and earnings and accepted accounting standards to measure them, it is not always clear if outcomes can be meaningfully defined and measured in education and healthcare. In the field of education, one can question the validity of metrics like graduation rates. Also, such metrics encourage the tendency to measure what is easy to measure e.g., number of diplomas handed out or number of patients treated rather than measures that matter i.e., long term effects of improved learning or health.

In K-12 education, this measurement and modeling movement has gone one step further. Shrinking budgets have often meant that the funding for the school systems has to be justified by numbers. Now, additionally, teacher pay and promotions are also being determined by the numbers game. Typically, the key metrics used are student test scores. In the field of education that is unaccustomed to rigorous performance measurements, all this is causing stress, turmoil and controversy. In the Atlanta school district, targets are set for test scores of students. School staff members (teachers and administrators) achieving the targets are rewarded bonuses which are tied to high test scores. Teachers have to submit detailed weekly reports on how their pupils are doing in practice tests and assignments. Goals are ratcheted up as schools that meet targets are given tougher goals to meet in the following year. Schools live or die by test scores. The schools that meet the targets are recognized in an annual event. High performers are given more visibility, literally, with teachers from such schools seated close to the front while their counterparts from the schools that did not meet the targets are seated in the back of the hall!

In Los Angeles school system, a different method is being used to measure teacher effectiveness. While it is based on test scores, unlike the method used in Atlanta, Los Angeles is not measuring the achievement relative to set goals. At the heart of this evaluation is a controversial statistical model that measures the value-added by a teacher. The data for variables such as child's family income and background are plugged into the model to project test scores. The value-added or value-subtracted by the teacher is the difference between actual test score and the projected test score. The results for 6,000 elementary school teachers revealed huge variations. The students of teachers ranked in the top ten percent of effectiveness had math scores which were 25 percentiles higher and English scores which were 17 percentiles higher than those students who had teachers in the bottom ten percent of effectiveness. The results have caused an uproar among the teachers and administrators who have to live with the implications.

The obvious shortcoming of these methods is that outcome measurement is incomplete as they measure only test scores – perhaps because such data are readily available. A non-obvious shortcoming is that they do not tell us much about what characterizes effective teaching. If the specific practices of effective teachers are known and shared, they could be emulated by other teachers. This is likely to work better than seating them in the back in a recognition ceremony. The practices noted above could also lead to changes in teacher hiring and training practices.

In this area, the education sector could learn from healthcare. Thanks to "100,000 and million lives saved" campaigns launched by Don Berwick and

other demonstration projects which are backed by statistical modeling of the data, we have learned a lot more about what works and what does not work in improving patient safety.

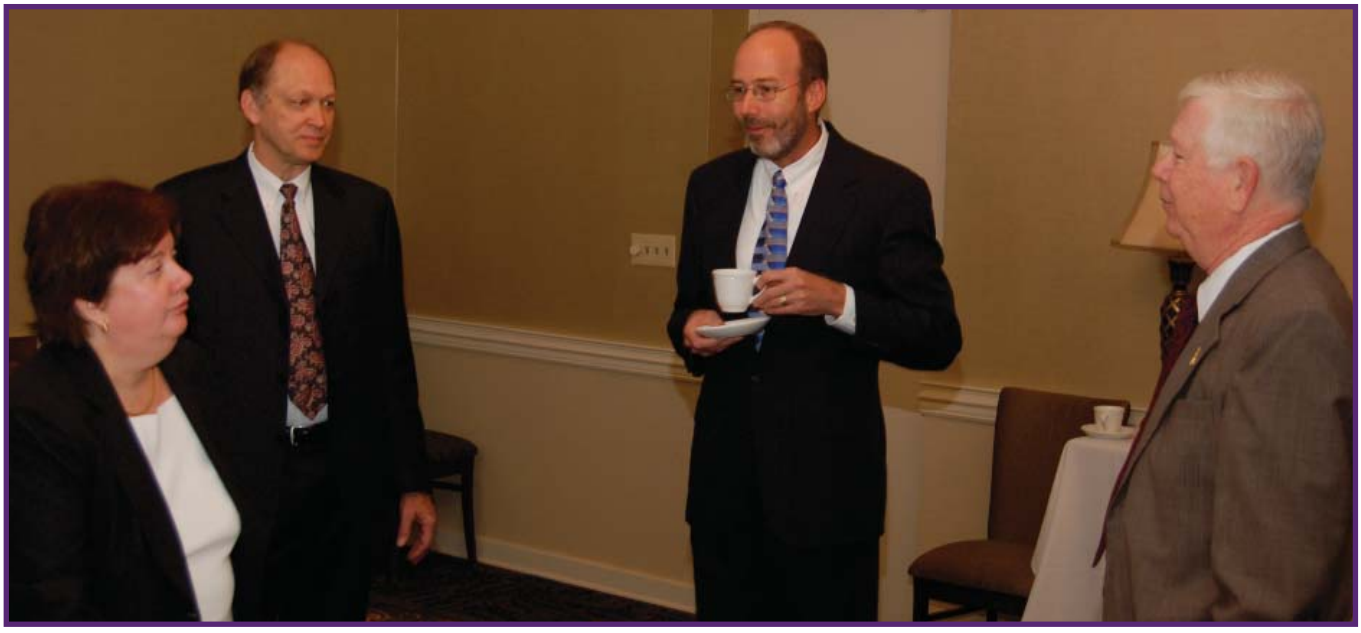
Discovering what effective teachers do requires learning more about the cause and effect relationships between student performance and teaching practices. Such studies can be expensive. The Bill & Melinda Gates Foundation invested $45 million to develop "fair" and "reliable" measures of teacher effectiveness. In its two-year national project 3,700 teachers are being evaluated on multiple measures. The data includes, among others, videos of teachers interacting with students, student surveys, examples of students' work, number and frequency of tests and assessment of a teacher's ability to judge students grasp of the material.

A deeper concern about the use of measurements and modeling to justify bonuses and rewards is the incentive effect that comes into play. If one does not make the numbers and the stakes are high, there is an incentive to "make up" the numbers. Researchers Brian Jacob and Steven Levitt found that minor shifts in teacher incentives affected cheating in the Chicago school district. According to the study, the higher the incentives, the higher the level of manipulation. In Atlanta, 13 of 22 schools that received bonuses for meeting testing targets were also on the state's "severe" list of schools with high numbers of suspicious erasures of test answers!

Perhaps there are some lessons to be learned from the life of Robert McNamara, the U.S. secretary of defense during the Vietnam war. He was the quintessential numbers man, the archetypal rational manager, the whiz kid who pioneered the use of the quantitative approach in business. This approach worked brilliantly for him at Ford Motor company (where he was a senior executive before joining the government) in part because in those days, at Ford, there were hardly any systems, measurements or accounting procedures to speak of. The idiosyncratic Henry Ford did not believe in accounting and had fired all the accountants. But it was a very different story when McNamara applied systems analysis to decisions concerning the Pentagon and the war. The approach failed miserably. People in the field supplied him with whatever body count or kill-ratio data he was looking for. In his memoirs (*The Fog of War*) he confessed that he did not quite understand the variables of the war and its fast changing dynamic. That is an important lesson - models can do a lot of harm if they do not capture the essential aspects of the phenomenon.

Today, we know how to address this problem, but implementation of the solution could be cost-prohibitive. First, generate more knowledge about the underlying phenomenon by multiple controlled experiments, and then use the results to develop the model and test its validity. The tools and data gathering capabilities were limited during McNamara's time and could not accommodate the new information arising out of rapidly changing conditions. Therefore, the second lesson is the need for developing models which are robust and can adapt to a wide variety of conditions, e.g., how should delivery trucks be rerouted if there is a sudden traffic jam or an accident.

I believe that the movement towards data mining and modeling in all spheres of life is inexorable and irreversible. In Plato's allegory, man is forever chained in a cave and can perceive the events around him only by the shadows he sees on the wall. Likewise, we are going to make sense of the complex social, physical and natural phenomena only though the lens of models. But in this brave new world, we do not have to relinquish control to the models. It is all the more important that we exert control by paying very careful attention to their design and use.



Left to Right: Jean Kinney of the Mayberry Advisory Board, Dean Dr. James Jordan-Wagner and Dr. Curtis Armstrong of the College of Business, and TTU President Dr. Robert Bell.

College of Business and TTU officials with Mayberry Advisory Board Members

Newsletter prepared by Dr. Nat Natarajan and Dr. Curt Reimann. It is also available on the Mayberry website: www.tntech.edu/mayberry Your comments are welcome.

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