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Incorporating Evidence-Based Management Into Management Curricula: A Conversation With Gary Latham

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Dr. Gary Latham has been a staunch supporter of integrating research and practice in management education for decades. Known for his gregarious personality and his ability to captivate a room with his rapier wit, he has the remarkable ability to take complex scientific research findings and make them relevant and interesting to both student and practitioner audiences. This interview outlines Latham's philosophy on teaching management from an evidence-based management (EBMgt) perspective, including tips on how to engage skeptical students on the first day of class, as well as his thoughts on how to translate research evidence and terminology for a broader audience.

Unlike most articles in this special forum, this interview does not focus on teaching stand-alone courses on EBMgt. Rather, it focuses on how Latham integrates the best available research evidence and tips on interpreting and understanding research findings into substantive courses such as Management, Organizational Behavior, and Human Resource Management. Latham's advice should prove meaningful to business school instructors who are looking to better incorporate the EBMgt perspective into their courses, whatever the substantive topic might be.

A review of Latham's accomplishments leaves no doubt as to his success as a master of both science and practice. He is currently the Secretary of State Professor of Organizational Effectiveness within the Rotman School of Management at the University of Toronto, a Fellow of the American Psychological Association, Association for Psychological Science, Academy of Management, Canadian Psychological Association (CPA), National Academy of Human Resources, Society for Industrial & Organizational Psychology (SIOP), and the Royal Society of Canada. Latham has also served as the president for the Canadian Psychological Association and SIOP. He is a recipient of the Lifetime Scholar-Practitioner Award from the Academy of Management, as well as the only recipient of both the Distinguished Contributions to Science and Distinguished Contributions to Practice awards from SIOP. Latham's recent book, *Becoming the Evidence-Based Manager* (Latham, 2009), received the Practice Theme Committee's Practice-Relevant Scholarship Award from the Academy of Management in 2010. As a testament to its popularity, Latham's book was listed as the No. 6 SHRM (Society for Human Resource Management)-published book for 2013, and was ranked as the No. 3 best-selling business book by Canada's *Globe and Mail* in March of 2013.

Given these accomplishments on both sides of the academic–practice boundary, Latham was a natural choice to be the subject of an interview in this special issue of *AMLE* on teaching management from an EBMgt perspective. He was kind enough to provide his view on the value of EBMgt for students and for business school faculty in a November 2013 interview. What follows is Latham's sage advice that stems from over 40 years of experience in the classroom, using the power of research to both inform and inspire his students.

Interest in EBMgt has really taken off since Denise Rousseau's AoM presidential address in 2006. Yet, you have been practicing EBMgt and teaching management from an evidence-based perspective for decades. Can you tell us a little bit about how your early career contributed to your ambidexterity with respect to research and practice?

One factor was that I had a very strong attachment to my father, who was a successful businessman. When I went to college, I took to psychology like a duck to water. When my father would pick me up at the airport to drive me home at Christmas time, I would find—much to my frustration and to his—that when he would ask me questions about what I was learning, he wouldn't understand a thing I said, even though we were both trying to communicate. By the time we pulled up to our driveway, neither one of us was speaking. It was frustrating that I couldn't explain what I was learning—something that so excited me—to my own father.

I was also influenced by my professors at Georgia Tech, where I got my master's degree. Most of them had served as military psychologists in World War II, and they instilled in me the desire to have an impact on the world. They convinced me that rather than doing pure research, I should instead be interested in improving the lives of employees. That ideal really got to me.

After Georgia Tech, I went to work as a psychologist for the American Pulpwood Association. It was there that I first had the idea of doing field studies on goal setting with loggers. I spent my weekends in the library reading the *Psychological Abstracts*. There, I discovered Ed Locke's research on the effects of giving college students a specific high goal for the number of math problems they were to solve (or the number of words they had to make out of anagrams, or the number of tinker toy creations they had to build). The results were clear: The higher the specific goal, the higher the performance. To my great excitement, the principles of goal setting worked just as well with loggers in the forest products industry as they did with Ed Locke's students in laboratories! And the rest is history . . . I'm still doing goal-setting research some 45 years later.

Anyhow, in that job, I had to make presentations to the executives of forest products companies. One day when I was finished, a forester named Billy Hoke came up to me and said, "you know, kid, you're obviously very bright, but most of what you say is lost because you don't know how to communicate with people. For example, if something stinks, just say-so . . . don't come up with some multi-syllabic word that people have to stop and think, 'What did that kid just say?' Just speak plainly." That advice stuck with me.

I also had an absolutely phenomenal professor, two years later, in my PhD program: Ken Wexley. He had a huge impact on me because he was so effective in a seminar. He would wear what he called "two hats" in the classroom—his "Professor Wexley hat" and his "Vice President Wexley from B.F. Goodrich" hat. When VP Wexley came into the room wearing a suit and tie, looking dazed and confused, we students would go, "Oh, no!" because it meant "Here comes a pop quiz from this clueless VP." Wexley would wander into the selection seminar and say, "Excuse me, is this the right class? From my understanding, you are all consultants. I'm so confused; I don't understand what construct validity is, and I don't even know how to spell it. Could I use a test to select people if I show that it has construct validity?" Then he would point to me and say, "Latham, explain it to me," and if I talked like Campbell and Fiske or whoever we were reading at the time, he would come down all over me because he didn't want a PhD answer, he wanted an answer that my father would have appreciated. That, too, really had an effect on me.

Finally, I was also influenced at an early Academy meeting by a young professor I had never met before—Ed Lawler. Back then, most professors read their talks at Academy meetings and hence, they were often boring and tedious. But I saw Lawler sitting on a table instead of standing behind a podium. He was just having a conversation with the audience. Everyone was hanging on his every word. And it occurred to me that, "Gee, that's what Billy Hoke told me back when I was with the American Pulpwood Association. That's also what Wexley's so good at . . . why don't I do the same?" All these different influences pointed me in the same direction—toward speaking plainly in trying to communicate research results in memorable, meaningful ways.

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Around the time that you first became an academic, people such as Virginia Boehm and Marv Dunnette were beginning to write about the increasing difficulty of merging the worlds of academia and management practice. Up until that time, the "scientist–practitioner" was the career ideal, at least in industrial-organizational psychology. What factors do you think led to the increasing gap?

Well, the world of university education really changed following the launch of Sputnik. When I graduated from high school, the smart kids usually went into liberal arts, and the less smart ones went somewhere else. But in 1959, the Ford Foundation and the Carnegie Foundation looked at ways of upgrading the educational system in the U.S. (and, by implication, Canada, U.K., Australia, and elsewhere). One of the areas that these two foundations focused on was business schools, which I think they called (in essence) "finishing schools" with little to no intellectual prowess. So, in an effort to speed things up and increase U.S. competitiveness in the world order, business schools brought in mathematicians to teach operations research, sociologists to teach organization theory, economists to teach finance, and psychologists to teach organizational behavior and human resource management.

But, for some reason, many of our management forefathers seemed to have a complex that they had to prove first and foremost that they were "scientists." They wanted to show that a behavioral science like management could be considered a real "science." And this led to a lot of courses taught in unbelievably boring and uninteresting ways.

Look, if medical doctors took the same philosophy as we did back then, people would still be dying of measles and mumps! Medical doctors know how to communicate with other doctors using the language of medicine; however, they have also learned how to communicate with the general public. When doctors come out and say, "If you want to smoke, devour sugar products, and refrain from exercise, it's your business. But odds are that you're going to die much younger," this usually gets people's attention. Look at the information that we have accumulated—whether it's selection, performance management, training, organization design, decision making, motivation, whatever. Look at all of this information . . . and no one other than us knows about it. And when we do go to explain it, we generally explain it in words that people don't understand, and that they can't relate to actions they should take. We're always whining that we need more dollars, more funding, more research . . . but what about all of the things we can take action on with what we know right now? Language is one of the most important keys to closing the scientist–practitioner gap.

Some people seem to think that teaching EBMgt simply means presenting research results to students in class. However, in their award-winning article, Rousseau and McCarthy (2007) argue that it includes much more than that. For example, they argue that it also includes developing decision awareness in practice; diagnosing underlying factors related to decisions; contextualizing scientific knowledge with local experience, preferences, and needs; developing evidence-based decision supports; and preparing students to access new evidence. What do you think are the essential elements of teaching from an evidence-based perspective?

For me, the essence of teaching EBMgt has always been first and foremost a mind-set. What I mean by that is that you have to prepare for your audience and frame questions in such a way that they're engaged. Whether it's my dad, a client I'm consulting with, or most importantly, those 28- to 29-year-old MBAs, you have to walk into class with a series of questions that will get them thinking. Then, once they're engaged, you can begin to get them thinking in terms of evidence-based principles.

So with the full-time MBAs, who are often the toughest group to get engaged, I often start with selection. I say, "Okay, how many of you went out on a Friday, discovered your Mr. or Ms. Right, only to wake up on Saturday and say 'Oh my God.'" Well, the class goes hysterical. Then I say, "Well, we're going to study that phenomenon. Because of Professor Latham, you're not going to make these mistakes anymore."

They keep giggling and twittering and looking sort of confused. So I say to them, "Now, I don't know why all of you are laughing, because this happens to the Royal Bank of Canada and to Deloitte, just the same way it happens to you when you wake up on a Saturday morning wondering, 'What did I ever see in this person?' So we're going to study how you tell winners from losers in selection in such a way that you're much less likely to make a mistake, or have lawyers sticking their

noses in your business, saying that you discriminated against somebody." Or I ask them, "How many of you would like to be on a high-performance team?" Lots of hands go up. So I ask, "Well, how would you go about creating one?" Those are both selection-type issues that immediately grab their attention, and get them engaged in the subject matter.

I do not bore them with research methods, but I do tell them enough to get them thinking. And I always insist that they use the course materials when they answer a question, right from day one. That way I've laid the groundwork for helping them to think through these issues in a scientific way. I explain that having a basic understanding of research methods can advance their careers by enabling them to put into practice what is likely to work and to avoid those practices that are what Dunnette (1966) labeled years ago as "fads, fashion and folderol."

Okay, so now we're getting to the "think like a scientist" part. This can be really challenging, particularly for full-time MBAs, since many of them don't see how research is going to help them get a job or perform better once they are there.

I never attempt to sell research in terms of its instrumentality for getting a job or wherever they're going unless they're trying to get into the PhD program. The only way I sell research to MBA students is that it is the foundation that enables them to be highly confident that tried-and-true research principles are going to work for them.

So, here's one way I do it. I ask them, "How many of you consider yourselves to be good or very good chefs?" If I only get a few hands, I'll say, "How many of you had dads or moms who were pretty good chefs?" More hands. "Grandparents?" Now all hands are up. I ask, "Is being a good chef an art? Or is it science?" That always gets a good debate going.

Then I ask, "How many of you, or your parents, or your grandparents, use a recipe? Because if you or they are winging it, it's art. If it's a recipe and others who follow the recipe get a cake that's reasonably close to the excellent one you made, we're moving into science. It's called 'method' in the scientific journals. If you pick up the *New England Journal of Medicine*, there's a Methods section. And the reason why there's a Methods section is that other medical doctors want to be able to replicate the success of the researchers who did the original study, just like your father or mother wanted you to be able to bake this great cake because you have important people coming over for dinner tonight and you can't afford to wing it."

"How many of you, or your parents, or your grandparents, use a recipe? Because if you or they are winging it, it's art. If it's a recipe and others who follow the recipe get a cake that's reasonably close to the excellent one you made, we're moving into science."—Latham

Another analogy I use is that applying evidence-based principles is similar to having a chemistry set in high school; if you follow the directions, the odds are in your favor that you will produce the reaction you want to produce. So I tell them that I am going to teach them evidence-based principles, like recipes or instructions, which they can then use to apply in their particular context (the "art").

Throughout the course, they learn the importance of replication. They learn that if two or more researchers, working independently, obtain the same results, we have stronger evidence than from either researcher working alone. This is especially true if the researchers used different methods and the same results were obtained. They learn the difference between cause-and-effect versus mere relationships found between variables (e.g., correlations). They learn to ask questions regarding the recommendations of consultants and HR professionals about mediator variables and boundary conditions (i.e., moderator variables).

Thinking in a scientific way involves a lot of potentially intimidating terminology. In an article in Academy of Management Journal, you talked about the advantages of being "bilingual" with respect to research and practice (Latham, 2007). For example, you indicated that in your work as a consultant, you often substitute "practice" words (such as intervention or framework) for "research" words (such as treatment or independent variable). Can you talk a little bit about that here, in the context of teaching? What do you do in the classroom—do you use both sets of words so students get used to associating or substituting them?

I'm not trying to give them a PhD; I'm just giving them some language to organize their thinking. I ask them to raise their hands if they can speak more than one language. I teach in multicultural Toronto, so most of them can do so. And I say, "Well, I speak two languages, too. They're called 'English' and 'Research Methods.' And all you have to know are just a few words to start thinking like a scientist."

Let's take the word "moderator." I ask, "How many of you believe that if you smoke cigarettes, it's eventually going to kill you?" Hands go up. And I say, "Well, yes, my son-in-law smoked like a chimney and he died at 45. But I also know people who smoke four or five packs a day, had stressful CEO jobs, and they're now in their 80s—how come they're still alive?" After further discussion, I say, "By the way, I don't really know the precise reasons of why smoking kills some people and not others. But there are moderator variables called genes. When there are moderators, it means that something is generally true under certain conditions, but not true or less true under others. For example, there are various cancers that seem to be much more likely to occur in blacks than in whites. In that case, race is a moderator." They "get" that.

I also apply the principle of bilingualism to presenting research findings. For example, I have never shown a *t* test or an *F* test or a structural equations model in an MBA class; I just show graphs and pictures. Rather than showing a regression equation or an ANOVA, I show a bar chart of how research participants performed under each intervention compared to the control group. If I show a factor analysis, I use the metaphor of a pool table. When you break the balls, some go here and some go there . . . the ones that go over here can be called one factor, and the ones that break over there can be called another. The balls (or items) in each cluster go together. I'm not trying to turn them into researchers—I'm just trying to get them to understand and to appreciate documentation of what was found and how it was found . . . which is called research.

Before my course ends, the students have learned how to evaluate research in terms of the importance of random assignment of participants to conditions, the different ways of assessing reliability and validity, and the necessity of paying attention to a theory's moderator variables or boundary conditions. For example, goal setting works. Setting a specific high goal increases an individual's, as well as a team's, performance. But if supervisors perceive the goals they are given by upper management as excessively high, they are likely to take their frustration out on their subordinates (Mawritz, Folger, & Latham, in press).

Are there other things you do on the first day of class to set an evidence-based tone?

Yes. In the full-time MBA classes, where students are likely to have less work experience, I divide the students into different categories: people who have worked in small business or own their own companies; people who have worked in large businesses; people in a serious interpersonal relationship; and "other." The "other" category I call the "consultants." I cover topics ranging from selection to performance appraisal to justice to leadership, motivation and training. I constantly ask those who are in a relationship questions relative to their personal lives (e.g., halo error, importance of principles of justice, especially voice, and building self-efficacy). When they can relate behavioral science principles to their personal lives, I find that they get hooked on behavioral science findings. Then, I switch the discussion of the application of behavioral science principles to their personal lives to how what we are discussing translates to the workplace.

When a student I call on cannot come up with an answer, I call on the "consultants" in the class. They must give their answers based on class lectures and readings. They are typically hooked by the end of the first or second class on the value of relying on scientific evidence rather than anecdotes.

I also tell students that they can ask whatever questions they want, as long as they are relevant to the day's topic. And when someone does raise a hand to ask a question, I turn to the "consultants" and say, "Get ready, because I'm calling on you first." After they give their answer, I go to the folks who have worked in small businesses: "Would that answer/solution work in your business? How about you in big businesses?" That's another way I get at moderators, as well as the art of applying general principles in different contexts. When they have all had their say, I add my two cents worth.

With executive MBAs, I tell them to go back to work and "try it." When they come back the next week, there are usually way more successes than failures. But, we spend lots of time on the failures, and we remember to discuss moderating and mediating variables. "Explain to us slowly the context

and what went wrong. All right, consultants . . . give advice!"

And I try to use examples that are familiar to them. For example, I use a lot of medical examples: "Why am I so concerned about my grandkids being around other kids who sneeze? Is it because (1) I'm anal retentive? (2) I'm over-controlling? or (3) (*you guys better come up with the answer fast!*)? Well, it's because the kid's likely to get sick. WHY? Because if she gets sneezed on, she's going to catch a virus and is likely to get sick." Okay, so now we have a mediator variable! The virus is the "means" that links the cause (sneezing) to the effect (getting sick). Whenever I mention criterion-related validity, I ask, "By the way, what does that mean again? It's in the readings." I go back to what I learned from Wexley; I want them to explain a concept/principle to me in language that laypeople can understand. And if they sound the least bit as if they've memorized the answer, I nail them: "Do you think your future boss, peers, or subordinates would understand what you just said? How would you explain the importance of what you just said? How would you explain to them why what we are studying this week should be implemented in your (future) organization?"

How do you teach theory?

I hit theory early on. I start by saying, "Nobody that I know on 'the street' likes theory. What do *you* think about theory?" And they'll often say, "It's idealistic, it's academic, it's not realistic." Then I respond, "From today on, you are going to love theory. Here's the deal." I say to the women, "Wouldn't you love to predict what your significant other is going to do next? Wouldn't you love to be able to explain him to your mom?" And I say to the men, "Wouldn't you love to be able to influence her?" Everybody roars. And then I say, "I just defined theory for you. Theory in the behavioral sciences allows you to predict, explain, and influence the behavior of others, whether it's the person you're dating, your team, or your boss. Theory in the behavioral science is the best thing since sliced bread."

To give you an example, I cover justice theory in all my courses. And I'll say, "How many of you got fewer Christmas presents than your brother or sister?" Lots of hands shoot up. "Awww, your mom and dad were unfair. If they had taken this course, they would've been able to predict your feelings and they likely wouldn't do it again." And the stories come rolling out, about the times students have unwittingly ticked someone off without being able to predict it, or when someone else has done the same to them. But now they can put words and concepts to it: voice, procedural and distributive justice.

I also point out that theory doesn't have to be 100% correct to be useful to them; it's just a framework that can help explain things. It gives them something to hold on to when interacting with others. Given that there are moderators, there are going to be exceptions. But what I'm trying to give them is the recipe that works most of the time, rather than the unique anecdotes that worked for one person in particular situations. Don't get me wrong—I love listening to stories told by my father, or by Jack Welch! But I explain to the students why these stories should not be taken as evidence of "If they could do it, I can too." I want to know the "recipes," and then, I want to know how many other people have tried those recipes. That's why I encourage students to try theories out, and tell me what happened. Collectively, we are obtaining evidence through replication.

Some critics of EBMgt have stated that, unlike medical research, "evidence" from management research is highly subject to bias, lacks a "body of shared knowledge" (Rousseau, 2006), and features "paradigmatic disagreement" over what should be considered as "evidence" (Learmonth & Harding, 2006). How would you respond to these criticisms?

I have close friends who are medical doctors. They can't agree on whether a pregnant woman should take aspirin! This issue is not at all unique to our field. After all, when did John Kenneth Galbraith and Milton Friedman, two highly respected economists, ever agree on anything?

In regards to the "what is evidence?" question, I define *strong* evidence—in any and all of the sciences—as two or more investigators who, working independently, analyzed their commensurate data and reached the same conclusion. *Very strong* evidence is that which comes from multiple studies that used different methodologies and still reached the same conclusion. This is as equally true in the social sciences as it is in the traditional "hard" sciences.

Overall, my response to these sorts of criticisms in the classroom begins right at the onset—as I said earlier, I teach the concepts of interobserver

reliability and construct validity in the opening day of the class. This way, I can get across what is meant by the term "evidence" in organizational science, and head off this line of skepticism at the pass.

Most people who teach EBMgt courses focus a lot on how to access, and understand, academic research evidence. But in other forums, you have indicated that you sometimes involve your students in the actual conduct of research. Can you talk a little bit about that, and give some examples?

The first thing that I do is plant the seeds for an argument—for example, "Should we be putting time and energy into performance appraisals?" I think for management students that question is right up there with the ongoing debates about gun control and abortion. I would say that in most classes it's probably split 60/40 or 70/30, and it really gets heated. So I say, "I don't think we're going to resolve this just by talking about it. So let's see how we can resolve this. Let's have a simulation. I'm going to randomly assign you to groups, regardless of your strong beliefs. Then, I'm going to put you into a simulation and every 20 min you're going to get feedback from one of your peers.

Now we've got to decide on the appraisal instrument. Group 1 is going to get management by objectives. Group 2 is going to use behaviorally anchored rating scales. Group 3 is going to get behavioral observation scales, and group 4 will be the control group—a blank sheet of paper." I tell them, "This stuff is so powerful, we'll get results no matter what." We got great results—significant differences among conditions, even with a sample size of only 91. You can read more about this particular experiment in Latham and Seijts (1997). I did another one (n = 125) that looked at differences in student satisfaction and performance, depending upon the types of goals students are urged to set at the beginning of the year (Latham & Brown, 2006).

I take it that you don't use PowerPoint much?

As I said, my role model in the seventies was Ed Lawler. Instead of having to strain to focus on a boring speaker who presented slide after slide, Lawler would just sit there talking, having a conversation, and people would hang on every word. He had no notes. Now, I have no problem with notes, they're excellent prompts. But people nowadays have so many slides and they're rushing through them so fast that soon nobody cares about what is being said.

The material I teach MBAs is tried-and-true science, and what we're doing in the classroom is learning the art of application. Because what a manager would do at Microsoft isn't necessarily what another manager would do at General Motors . . .

Do you use case studies?

Well, I love to use real-time cases that I find in the newspaper ents can use to apply the course concepts. But I don't use the traditional case method for two reasons: They're old news, and cases are full of idiosyncratic contextual variables. That means that what worked in one case might not work for you. Let me explain:

Quite often I get the question, "Jack Welch had a real temper, and Steve Jobs was often a jerk with subordinates, so how do you explain their success?" And I say, "Well, each of those guys is a case study. Just one guy in a unique context. So here's what I want you to do. Over the next week, I want you to be nasty and mean to someone in your study group: Yell at this individual. Think of Steve Jobs as you're doing this. Then, tell us next week how the relationship is going."

And when they come in next week and talk about how awful things are, I'll say, "So, maybe there are moderator variables that we're not aware of; maybe Jobs was highly successful *in spite of*, not because of, his inappropriate behavior as a manager. I think most of us in this classroom can conclude he was a genius and ahead of his time as an innovator, but no one has ever said that he was a great leader. And if we had a comparison group with a genius leader who had strong interpersonal skills, we might have discovered how much more successful that leader might have been than Jobs. Think about what happened when you tried it in your study group. Why would you want to act that way, and how far do you think it's going to get you?"

You obviously have a wealth of experience and credibility from years of teaching and consulting. Do you think it's realistic for junior faculty members to teach from an EBMgt perspective? What advice would you give to doctoral students or newly minted PhDs on how to use EBMgt effectively in the classroom?

I think all of us have or had a credibility problem when we were in our twenties and thirties teaching MBAs. I certainly did. In introducing myself, I would quickly clarify what I could bring to the table. I would stress to them that I want to enrich their wealth of experience with scientific evidence that can improve what they already do well. I would not imply that what they have been doing is wrong. I would stress that "this is what the evidence says." I would use lots of metaphors, such as: "Lots of medical doctors have never had cancer. Nevertheless, we still trust them when they tell us, 'Here is what the evidence says can be done to minimize the odds of getting this disease.'"

Also, I insist that students provide answers to the issues we discuss based on the readings. That way, I don't get involved in their anecdotes and contexts about which I know nothing. I love to spot an article in the newspaper and require the class to offer solutions based on the readings that they were assigned to read.

By the way, the Wexley method of coming in as a confused VP of a local business and then administering what are tantamount to pop quizzes that have to be answered in layman's terms can work for young professors, too. One of my former PhD students was getting terrible teaching ratings in his first few years of teaching. So I suggested he "pull a Wexley"—pick a local company, become its VP, look confused, and *pop quiz* them on the material. His ratings that semester skyrocketed. Every day was in essence a pop quiz day, and the students were suddenly engaged in the subject matter. Today, he is among the top teachers at his business school.

What tips or tricks can you share for how you remain current in your knowledge of emerging management evidence?

It's pretty straightforward—I stay on top of the scientific journals in my field, a few practitioner-focused periodicals such as *Forbes*, and material put out by the Society for Human Resource Management (SHRM). Beyond that, I have been lucky to teach in my business school's executive nondegree program since I was 28. I keep my ears wide open to that audience. This gives me a golden opportunity to see what the real issues are that are troubling this group in their individual work settings, and it provides me direction for where I can discuss evidence-based management principles that are most relevant to them, as well as meaningful research avenues for my PhD students and me to pursue.

Any final thoughts?

In some ways, I feel that there is a danger in trying to put too much structure on "the way" of teaching evidence-based management, when doing so may not be necessary. From my perspective, I think that the whole evidence-based idea is taking tried-and-true concepts and explaining it in words that people can relate to. And then getting managers and MBA students to continually think about how they can apply these principles in their personal lives and on the job. For example, I consistently ask students, "Where do you hope to get a job? Okay, tell me how you think you're going to use this information once you get that job?" The key is for them to internalize these principles, rather than memorize them solely for examination purposes.

You know, I used to get asked by our associate dean, "Why did you give so many As?" My answer was, "Because my students are highly motivated to use the principles they learned in this course. They're not simply studying to get a high grade." The students get what is tantamount to a pop quiz in every class: "Explain to me how you are going to apply this stuff."

So that's my secret!

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Bibliographic Search Training for Evidence-Based Management Education: A Review of Relevant Literatures

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While evidence-based management training is a recent addition to management education, there is a longer history of teaching and studying evidence-based instruction in the domain of medicine. We review relevant literatures from information sciences and medical education to examine the lessons learned and explore how they can inform the design and practice of evidence-based management education. We focus our review specifically on bibliographic search training because searching academic literatures to locate the best available research evidence is central to the practice of evidence-based management. Research shows that searchers often have great difficulty developing effective search strategies and retrieving relevant information from electronic databases. Despite wide variation in research designs and training programs, studies examining the effectiveness of bibliographic search training show that training typically enhances search quality. Although the extant research is informative, on its own it provides insufficient guidance for the design of bibliographic search training. Therefore, we use a combination of our findings from the literature reviewed and Goodman and O'Brien's (2012) evidence-based instructional strategies to develop a set of recommendations for designing bibliographic search training for evidence-based management education. We also provide suggestions for future research intended to yield more precise instructional design recommendations.

Evidence-based management (EBMgt) involves thoughtfully and explicitly gathering, evaluating, and integrating the best available scholarly research evidence, local evidence (i.e., facts of the situation, organizational characteristics), viewpoints of affected parties, ethical considerations, and the practitioner's knowledge and judgment in the process of managerial decision making (Briner, Denyer, & Rousseau, 2009; Rousseau, 2012a). EBMgt has been influenced by evidence-based medicine (EBMed) and other organized efforts to incorporate scientific knowledge into everyday decision making (Rousseau, 2012a). While teaching EBMed is commonplace in medical training, explicitly developing EBMgt skills of future and current managers is a fairly recent addition to management educa-

Finally, local evidence equips managers with strong arguments for convincing other stakeholders that interventions work. At the casino chain Harrah's, managers conducted an experiment to compare the effects of different promotional packages on gambling revenue (Lal & Carrolo, 2004). Customers in the control group received a standard package worth $125 (a free room, two dinners, and $30 in chips); whereas those in the treatment group were given only $60 in chips. The revenue from the treatment group was higher, a finding that contradicted conventional wisdom at that time. Another example is that of Google's use of a data-driven approach to convince its engineers that people management indeed matters for retaining talented employees (Gavin, 2013). The opening example of Maria is also a case in point. The president of the charity will find it difficult to argue on the basis of his intuitive concerns if data collected on site from actual donors show the opposite.

In summary, both pedagogical reasons and the usefulness of local evidence for EBMgt justify teaching the skills necessary for collecting one's own causally interpretable data in one's company. A focus on producing local evidence helps students visualize EBMgt and also sharpens skills for evaluating existing evidence. Moreover, producing local evidence is a managerially useful complement to existing evidence when the latter is not sufficiently relevant to the problem at hand, lacks causal interpretability, or cannot be locally applied.

HOW TO TEACH EBMGT

We advocate using a variant of problem-based learning (PBL; Barrows, 1996), a method originally developed to teach evidence-based medicine. PBL typically opens with a case describing a problem of a patient. Aspiring doctors formulate a researchable question from the problem description (typically symptoms of a patient), search and evaluate the literature to identify quality evidence, and eventually on the basis of the evidence suggest how to treat a patient's symptoms (Rosenberg & Donald, 1995). Our approach to teaching EBMgt also starts with cases, but the patients are businesses and the symptoms are business problems. Students use an evidence-based problem-solving cycle to address these problems. This cycle is composed of four steps: first, students define the problem. Second, to analyze the problem and develop solutions, they consult and evaluate academic and other evidence. Third, they practice designing and executing experimental tests of problem solutions. Fourth, they evaluate test results and recommend which solution should be implemented.

Three theoretical arguments can be made for using cases to facilitate learning EBMgt. First, as Briner and colleagues (2009: 20) noted, EBMgt "starts with the questions, problems, and issues faced by managers and other organizational practitioners." Working on cases allows students to simulate EBMgt in vivo, which eases the transfer of learning to the real world (Hmelo-Silver, 2004). Second, with a facilitated transfer comes an enhanced motivation. Students who see the practical relevance of their learning become intrinsically motivated (Ferrari & Mahalingam, 1998). Jelley and colleagues (2012: 340–341) noted that "students are hungry for cases and real-life illustrations of managers using evidence"—an observation that we can only confirm. Third, a PBL-based approach requires active processing by students, which, as much research has shown (e.g., Prince, 2004), enhances learning. A synopsis of the first case in our course, which is based on a study by Fehr and Goette (2007), serves as an example.

Case Example

The Bike Messenger Case

A bike messenger company in Zurich, Switzerland, employed mostly students, who were paid exclusively on commission. The company's owners planned an experiment to test what effect a 25% raise in commissions would have on the revenues generated by the bike messengers. On the basis of economic theory and research, the owners believed that the raise should motivate the messengers to work more shifts per week: With a higher commission rate, work would become more attractive compared to leisure, and messengers should show more effort during each shift. What would an experimental test of that hypothesis look like?

Prior to coming to class, our students read an article on EBMgt (Briner et al., 2009) as well as two papers on compensation (Kerr, 1995; Rynes et al., 2005). They are also asked to search for other problem-relevant literature. During the class discussion, students initially focus on the business problem, which can be defined as a gap between current revenues generated by employees and desired revenues. When analyzing the compensation system and its effects on performance, students