**Teaching the key principles of evidence-based management through the analogy of how students study and why**

* **Introduction**. Provide a brief introduction that establishes a need for this type of exercise and identifies the target usage. Include potential course applications and explain for whom the exercise is designed: early undergraduate, late undergraduate, graduate, etc.; traditional, non-traditional, cross-cultural, etc.).

I teach my organizational behavior courses through an evidence-based management lens. The objective of this course is to give students the tools and knowledge to implement organizational practices based on the best available evidence. I have students read the 2006 HBR article by Pfeffer & Sutton. Every semester students have the same question: If there is all this evidence on effective management, why do managers not use this knowledge? The explanations provided in the article (there is too much evidence, not enough good evidence, evidence doesn’t quite apply etc.) often don’t resonate well with my students. In an effort to find a way to explain it with something that they can personally relate to no matter the extent of their professional experience, I started using this exercise. It helps my student relate evidence-based management with their own approach to study and learn (something all of them can relate to).

This exercise works for undergraduate and graduate students with or without work experience.

* **Theoretical Foundation/Teaching Implications**. Briefly specify the relevant background literature that the exercise is based upon and how your session contributes to effective teaching and learning in the field of management.

Research (Ambrose et al. 2010; Carey, 2015) has shown that students understand and learn concepts better if they can personally relate to them. The concept of evidence-based management is not very relatable, particularly for students who have no or limited professional experience. Relating the concept of evidence-based management to something all students have experienced (learning and studying) helps them better understand the benefits and challenges of implementing evidence-based management.

* **Learning Objectives**. Specify the learning objectives for the exercise by articulating the expected changes in knowledge, attitude, or skill that are associated with participation in the activity. What teaching topics are relevant to your session?

Objectives:

* To develop an understanding of the principles and challenges of evidence-based management.
* To increase motivation to become a more evidence-based manager.
* **Exercise Overview**. Provide an overview of the activity/exercise, including the logistics of running the exercise (e.g. timing, materials, class size), the flow of the exercise, variations or alternate applications, debriefing guidelines (e.g. questions to ask, how students generally respond). The goal is to give the reviewer enough information so that they understand what the activity is that you plan to present in your session.

Logistics:

* any class size
* students work individually or in pairs
* undergraduate – graduate
* 30 to 45 minutes
* Students have read the 2006 HBR article on evidence-based management by Pfeffer and Sutton prior to this session.

Steps:

* 1. I ask the students to take a few minutes individually (or with a partner) to list all the concrete things they do to study and learn new material. I assure them that this activity is related to our discussion of course material. I do not tell them from the beginning that this activity will help them understand the challenges of evidence-based management. I want them to discover this for themselves.
	2. I then write those responses on the board. Some of the ones usually mentioned include: reading the textbook, reviewing/re-reading the textbook and notes, taking good notes, studying with a friend, looking at problem’s solutions, quizzing myself, highlighting, solving problems, cramming the day before a test, etc.
	3. I then ask them “why do you do what you said you do to study?” I write the responses on the board. The reasons are very similar across student groups. The main ones are:
		+ it worked in the past (I did get admitted to college),
		+ that is what I have always done,
		+ my teacher/parent/friend said that it is a good idea
		+ I do this because it worked for my friends/siblings, etc.
	4. Then I ask: Have you ever looked for research on effective studying/learning to help you learn better? Why? Why not? I point out that what we know about how the brain works and how best to learn has dramatically improved over the last 5 to 10 years, and we continue to learn more about how the brain works every day.

Many students usually respond with a “No”. I then ask “Why not?” Usual responses: didn’t know about it, what I do worked for others so I just do that, don’t have time, didn’t know where to look, there is so much info out there, it is difficult to figure out which is true, etc. I then relate all of these responses to the challenges someone faces who wants to become an evidence based manager. They are the same: It is difficult to figure out what is reputable evidence, there is so much advice about how to manage more effectively out there, etc. We then discuss the 2006 HBR article on evidence-based management.

* 1. I then dive into a discussion of where evidence comes from, a general discussion on how organizational behavior research is conducted, how to assess the credibility of sources, etc. This then leads into a discussion of the benefits of engaging in evidence-based management. I relate it back to how they study. I discuss that even though how they studied up to now seems to have worked (they got admitted to college after all), if they apply better studying/learning strategies based on evidence (some are listed in the handout), it will make them more effective. They will save time and still learn more and better. I usually ask them that if I could give them strategies that will save them time and effort while still being able to learn and be successful in their courses if they are interested. Every student says yes, including those for which what they are currently doing to study/learn is working for them. I then briefly go over the 10 Rules for Good Studying (handout). Many are surprised to learn that many of their study habits like re-reading, highlighting, cramming etc. are counterproductive and a waste of time and effort. I then relate this back to the benefits of applying evidence-based knowledge when implementing organizational practices.

Observations:

I found that relating the challenges of evidence-based management to the way students study and how they figure out how to study creates Aha moments. This seems to be most helpful particularly for students with limited work experience. Relating the approach of evidence-based management to something they have personally experienced for a long time (how to study) makes the message much more tangible and relatable. Students do remember this analogy throughout the semester and they seem to have a better grasp of the reasons why we have such a gap between what we know are more effective ways to manage (e.g. that most employees prefer autonomy) and what managers actually do (e.g. so many of my students have experience with micromanagers).

Students are also very interested to learn more about how to study more effectively without wasting time and energy on activities that are counterproductive. I refer them to the resources listed and particularly also the coursera course on Learning How To Learn.

* **Session Description.** Provide an overview of what you will actually do in the MOBTS conference session. Include a timeline for the session and how participants will be involved. Remember, reviewers are looking for participant engagement in these sessions.
	1. I will explain the reason for this exercise (to help students understand the challenges of becoming an evidence-based manager (5 minutes)
	2. I will then go through an abbreviated version of the exercise so participants can experience what students go through. I will ask “list all the things you do to study and learn new material”, “why do you do what you just listed?”, Have you ever looked for research on effective studying/learning to help you learn better? Why? Why not? I then relate the answers do these questions back to the challenges of evidence-based management. (20 minutes, including Q&A)

I will hand out the 2 pages “10 Rules of Good Studying/ 10 Rules of Bad Studying” by Barbara Oakley.

* 1. Discussion of my experience with this activity in graduate and undergraduate Organizational Behavior courses (5 minutes, including Q&A)

References

Ambrose, Susan A.; Bridges, Michael W.; DiPietro, Michele; Lovett, Marsha C.; Norman, Marie K. 2010. *How Learning Works*. 7 Research-Based Principles for Smart Teaching. Josey-Bass.

Boser, Ulrich. 2017. *Learn Better*: Mastering the Skills for Success in Life, Business, and School, or How to Become an Expert in Just About Anything. Rodale Books.

Carey, Benedict. 2015. *How We Learn*: The Surprising Truth About When, Where, and Why It Happens. Random House.

Eyler, Joshua R. 2018. *How Humans Learn*: The Science and Stories Behind Effective College Teaching. West Virginia University Press.

McGuire, Saundra Yancy. 2018. *Teach Yourself How to Learn*: Strategies You Can Use to Ace Any Course at Any Level. Stylus Publishing.

Oakley, Barbara. 2014. 10 Rules for Good Studying/ 10 Rules for Bad Studying (handout, attached)

Pfeffer, Jeffrey; Sutton I. Robert. “Evidence-Based Management”. Harvard Business Review. January 2006, p. 63-74.

Massive open online course (MOOC): Learning How To Learn: Powerful mental tools to help you master tough subjects. <https://www.coursera.org/learn/learning-how-to-learn>

10 Rules of Good Studying

By Barbara Oakley, PhD, PE

**1. Use recall.** After you read a page, look away and recall the main ideas. Highlight very little, and never highlight anything you haven’t put in your mind first by recalling. Try recalling main ideas when you are walking to class or in a different room from where you originally learned it. An ability to recall—to generate the ideas from inside yourself—is one of the key indicators of good learning.

**2. Test yourself.** On everything. All the time. Flash cards are your friend.

**3. Chunk your problems.** Chunking is understanding and practicing with a problem solution so that it can all come to mind in a flash. After you solve a problem, rehearse it. Make sure you can solve it cold—every step. Pretend it’s a song and learn to play it over and over again in your mind, so the information combines into one smooth chunk you can pull up whenever you want.

**4. Space your repetition.** Spread out your learning in any subject a little every day, just like an athlete. Your brain is like a muscle—it can handle only a limited amount of exercise on one subject at a time.

**5. Alternate different problem‐solving techniques during your practice.** Never practice too long at any one session using only one problem‐solving technique—after a while, you are just mimicking what you did on the previous problem. Mix it up and work on different types of problems. This teaches you both *how* and *when* to use a technique. (Books generally are not set up this way, so you’ll need to do this on your own.) After every assignment and test, go over your errors, make sure you understand why you made them, and then rework your solutions. To study most effectively, handwrite (don’t type) a problem on one side of a flash card and the solution on the other. (Handwriting builds stronger neural structures in memory than typing.) You might also photograph the card if you want to load it into a study app on your smartphone. Quiz yourself randomly on different types of problems. Another way to do this is to randomly flip through your book, pick out a problem, and see whether you can solve it cold.

**6. Take breaks.** It is common to be unable to solve problems or figure out concepts in math or science the first time you encounter them. This is why a little study every day is much better than a lot of studying all at once. When you get frustrated with a math or science problem, take a break so that another part of your mind can take over and work in the background.

**7. Use explanatory questioning and simple analogies.** Whenever you are struggling with a concept, think to yourself, *How can I explain this so that a ten‐year‐old could understand it?* Using an analogy really helps, like saying that the flow of electricity is like the flow of water. Don’t just think your explanation—say it out loud or put it in writing. The additional effort of speaking and writing allows you to more deeply encode (that is, convert into neural memory structures) what you are learning.

**8. Focus.** Turn off all interrupting beeps and alarms on your phone and computer, and then turn on a timer for twenty‐five minutes. Focus intently for those twenty‐five minutes and try to work as diligently as you can. After the timer goes off, give yourself a small, fun reward. A few of these sessions in a day can really move your studies forward. Try to set up times and places where studying—not glancing at your computer or phone—is just something you naturally do.

**9. Eat your frogs first.** Do the hardest thing earliest in the day, when you are fresh.

**10. Make a mental contrast.** Imagine where you’ve come from and contrast that with the dream of where your studies will take you. Post a picture or words in your workspace to remind you of your dream. Look at that when you find your motivation lagging. This work will pay off both for you and those you love

Ten Rules of Bad Studying

By Barbara Oakley, PhD, PE

Avoid these techniques—they can waste your time even while they fool you into thinking you’re learning!

**1. Passive rereading**—sitting passively and running your eyes back over a page. Unless you can *prove* that the material is moving into your brain by recalling the main ideas without looking at the page, rereading is a waste of time.

**2. Letting highlights overwhelm you.** Highlighting your text can fool your mind into thinking you are putting something in your brain, when all you’re really doing is moving your hand. A little highlighting here and there is okay—sometimes it can be helpful in flagging important points. But if you are using highlighting as a memory tool, make sure that what you mark is also going into your brain.

**3. Merely glancing at a problem’s solution and thinking you know how to do it.** This is one of the worst errors students make while studying. You need to be able to *solve* a problem step‐by‐step, without looking at the solution.

**4. Waiting until the last minute to study.** Would you cram at the last minute if you were practicing for a track meet? Your brain is like a muscle—it can handle only a limited amount of exercise on one subject at a time.

**5. Repeatedly solving problems of the same type that you already know how to solve.** If you just sit around solving similar problems during your practice, you’re not actually preparing for a test—it’s like preparing for a big basketball game by just practicing your dribbling.

**6. Letting study sessions with friends turn into chat sessions.** Checking your problem solving with friends, and quizzing one another on what you know, can make learning more enjoyable, expose flaws in your thinking, and deepen your learning. But if your joint study sessions turn to fun before the work is done, you’re wasting your time and should find another study group.

**7. Neglecting to read the textbook before you start working problems.** Would you dive into a pool before you knew how to swim? The textbook is your swimming instructor—it guides you toward the answers. You will flounder and waste your time if you don’t bother to read it. Before you begin to read, however, take a quick glance over the chapter or section to get a sense of what it’s about.

**8. Not checking with your instructors or classmates to clear up points of confusion.** Professors are used to lost students coming in for guidance—it’s our job to help you. The students we worry about are the ones who don’t come in. Don’t be one of those students.

**9. Thinking you can learn deeply when you are being constantly distracted.** Every tiny pull toward an instant message or conversation means you have less brain power to devote to learning. Every tug of interrupted attention pulls out tiny neural roots before they can grow.

**10. Not getting enough sleep.** Your brain pieces together problem‐solving techniques when you sleep, and it also practices and repeats whatever you put in mind before you go to sleep. Prolonged fatigue allows toxins to build up in the brain that disrupt the neural connections you need to think quickly and well. If you don’t get a good sleep before a test, NOTHING ELSE YOU HAVE DONE WILL MATTER.