Contemporary managers are heavily swayed in their thinking and decisions by habit, fads, convention and unrealistic levels of confidence. Practitioners of evidence-based management (EBMgt) learn to rethink their approaches to information in order to make more effective decisions. EBMgt means making decisions based on best available evidence with special emphasis on relevant scientific findings and unbiased organizational facts. It involves active use of decision practices that reduce bias and judgment errors and give due consideration to ethical concerns. This mini course is designed to promote your understanding and use of EBMgt principles. It guides you in developing the skills and knowledge needed to identify, access, and use quality evidence in making better decisions.

The instructor is committed to pursuing an evidence-based approach to the course itself. Scientific evidence strongly supports the effectiveness of participation in learning activities (Ambrose et al., 2010; Armstrong, 2010; Tough, 1971). Your success in this course will entail actively using evidence-based processes and practices.

**COURSE TOPICS**

- What It Means to be an Evidence-Based Manager
- Finding, Interpreting, and Using Scientific Evidence as Managers (Critically Appraised Topics or CATs)
- Creating Valid Organizational Information from Raw Data
- Making it Easier to Use Evidence as a Manager: Logic Models, Decision Aids and Communities of Practice
- Decision Awareness: Types of Managerial Decisions and Evidence-Based Processes
- Planning Your On-Going Development as an EBMgr

**LEARNING GOALS**

- This class is intended to help you apply the seven steps of evidence-based practice to evidence from four sources professional expertise, scientific literature, organizational data and stakeholder perspectives. (See EBP STEPS FRAMEWORK)

**BEHAVIORAL NORMS:**

I. YOU AND THE INSTRUCTOR SHARE RESPONSIBILITY FOR LEARNING

Real learning means changing how we think and act. Not surprisingly, people often resist information that conflicts with their current beliefs (Armstrong, 2010; Batson, 1975). You can expect that this class will challenge your beliefs with scientific findings that you have never seen before. Your job is to actively question your own beliefs (and others’ including the instructor’s), critically appraise the available evidence, and ask yourself under what conditions you might use this information, and if not why not.
Our class format incorporates evidence-based features of natural learning, including:

A. SETTING LEARNING GOALS.
Establishing learning goals for your EBMgt practice can help overcome the disappointing tendency that students have to forget much of what they learn within months after completing a course (e.g., Bacon and Stewart, 2006, found that half of the knowledge from a course on consumer behavior was lost in 13 weeks).

Your instructor will help you think about and set your personal learning objectives for this class. Looking to your future as a professional evidence-informed practitioner, this EBMgt course will conclude with discussion and formulation of learning objectives for your future EBMgt practice.

B. OBTAIN RELEVANT FEEDBACK AND REFLECT ON IT TO MAKE GAINS IN LEARNING AND PERFORMANCE. Class members will keep learning (b)logs and provide periodic assessments in which they describe their progress. Completing assignments including the learning (blog) on time permits timely feedback on your work. Feedback promotes the accuracy of what you have learned. Assessments that provide relevant feedback are more useful and informative regarding what is actually learned than faculty ratings of students and student ratings of faculty (Clayson, 2010; Ofir, Chezy & Itamar Simonson, 2001; Roth et al., 1996). To focus course feedback on learning, course grades will be based on demonstrated learning. There is no curve.

II. PREPARATION, PARTICIPATION, REFLECTION

A. BEFORE EACH CLASS: PRIME THE PUMP BY COMPLETING ALL SCHEDULED READINGS, ASSIGNMENTS, AND UPDATING YOUR LEARNING DIARY.
Prior to each class, you are expected to have completed all readings and to have updated your learning diary (below). Assigned readings should be completed prior to the class for which they are specified. Readings will be briefly reviewed via cold calling and discussion to check for understanding at the beginning of each class. Be prepared to answer questions regarding the readings and more importantly to ask them.

B. IN CLASS: BE FULLY PRESENT. Absolutely no in-class email, websurfing, or texting. Your instructor will tell you when it is okay to open your laptop and for which tasks. If you must text your BFF, please go outside. Attention is required for learning—thus we need your mindful presence (Langer, 1989).

C. AT END OF EACH CLASS: REFLECT ON WHAT YOU HAVE LEARNED. WHAT QUESTIONS REMAIN? HOW MIGHT THESE BE RESOLVED? Make note of all these reflections in your learning diary. Share your ideas for improving our learning with instructor (email, in-class, FTF meeting)—consistent with in-class discussion of After-Action Reviews.

III. ETHICS: ALL WORK TurnED IN MUST BE ORIGINAL AND YOUR OWN. All information sources used are to be cited (documents, websites, people). Please ask your instructor if you have any questions about appropriate citation or academic conduct.

READINGS

Assigned Articles and Cases: provided in class or on-line via Blackboard.
Supplementary Resources: For our Critically Appraised Topics or CATs, see page 4 (and your own professional development), I encourage you to become familiar with original sources of research relevant to management, especially those available electronically through ABIInform, ProQuest, and Web of Science.

N.B. If you are off-campus when you try to access CMU’s electronic library, you will need to do so via the CMU Cisco portal.

SOME RECOMMENDED BOOKS: If you are serious about practicing evidence-based management, certain book may be especially valuable for your personal library …

E.A. Locke: *The Handbook of Organizational Behavior: Indispensible Knowledge for Evidence-Based Management*. New York: Wiley. 2nd ed. 2009. Our class addresses the process of EBMgt practice, while the Handbook presents the actual findings (content) that pertinent to common organizational decisions.


GRADING

I. INDIVIDUAL WORK

A. Participation (20 points): Contributions in the form of attendance, constructive input to class discussions, posting queries and replies to our course BBoard, and turning in “one-pagers” as requested. A variety of ungraded “one-page” assignments count toward participation credit. If they are completed, you will be one step further along on your personal journey toward enlightenment. What an incentive system.

N.B. Talking is not the same as participating, since excessive talking without offering useful ideas is disruptive.

B. Learning Logs (30 points)—*Keep your logs in our course’s Googledocs folder*. A learning log is not so much a record of what you have read. Instead, it contains what you have learned and critically reflected on. It is unique to you and what you write is neither right nor wrong. Try to make it an authentic record of your personal learning experiences in this class.

Studies show that ‘good’ learners organize their learning, set their own goals, seek practice opportunities and monitor and evaluate themselves effectively (Condrey, 1977; Langer, 1989; Tough, 1971). To develop these strategies, people need to become aware of themselves as
learners and of the factors that influence their learning. One way to raise awareness is by keeping a learning log or diary (Learning How to Study Again, C. Dawson, 2004). It not only encourages reflection and preserves valuable insights, but can reveal attitudes and beliefs hindering learning.

**WHAT TO WRITE?**

- **Be sure to post your learning goals at the top of each diary entry.**
- What did I read? Do? Observe?
- How do I feel about this? What assumptions have I been making that I now realize?
- What was my experience with a class exercise or assignment?
- How could I put what I learned into practice? How might I use this in the future?
- How does these insights or experiences relate to my learning goals?

**EXAMPLES OF LEARNING EXPERIENCES YOU MIGHT WRITE ABOUT:**

- Ideas that came to you while reading course articles
- Class discussion points that resonate with you
- Playing internet detective—so what evidence have you turned up about what works (or not)?
- Searching for evidence to develop answers to a practice question
- Working with your study group
- *Raising the issue “what’s the evidence” outside of our class—special points for bringing up in class what happened when you asked this question at work, school, or elsewhere during our mini term.*
- Anytime you re-read your previous diary entries and learn something new.

These are just a sample—whenever and however you learn something relevant to EBMgt during this course, write about it. Frequency of entries and quality of reflections are important. Document length is not.

Your Learning Log will be graded based on:

1. Links made between class experiences and your **learning goals**
2. Reflections on your **assumptions/feelings** related to EB practices—do these make EB mgt harder or easier to apply?
3. Ways you might **use an EB practice** now or in the future

II. GROUP WORK (N=2-3 PEOPLE PER GROUP)

*CAT: Critically Appraised Topic I & II*  
1. Due 11/16 & II Due 12/7 (25 points x 2) In your career you will face challenging decisions. Important decisions may make it worthwhile to obtain the best available evidence in determining the proper course of action. Your group will choose a managerial question about which to gather scientific evidence. Please do so in consultation with the instructor. (Such a question might be something like these. When are distributed teams more likely to perform effectively? Would pay-for-performance work in our company? When is investing in workforce training most likely to be financially beneficial?) You will also be given examples of real CATs that companies have used to stimulate your thinking.
Your task is to evaluate relevant, best available management and social science research to answer your question (3-4 pp.). Sources used should be annotated in an appendix, per examples given in class. (Appendices do not count toward total length of paper.) Cite all sources you relied upon in drawing your conclusions and explain your search strategy for finding them.

GRADING YOUR CAT

The grading criterion for this assignment is how effectively you marshal the best evidence from the array of relevant research. In addition to using an effective search strategy, a quality CAT integrates the evidence across studies so that you appreciate the big picture regarding what the evidence supports, what it does not, and aspects of your question for which apparently there is no evidence. (If your report merely states what each study says, you will lose points for not integrating the findings into an overall assessment. See the CAT examples provided.)

THE QUALITY OF EVIDENCE IN SCIENTIFIC RESEARCH
(WHEN YOUR QUESTION IS “WHAT WORKS?”)

PLEASE USE THIS EVIDENCE HIERARCHY TO EVALUATE
THE STUDIES INCLUDED IN YOUR CAT

A+ BEST QUALITY: 1) Meta-analyses of research studies, 2) Systematic reviews of research articles

A HIGH QUALITY: 1) Well-controlled longitudinal field studies, 2) randomized controlled interventions, 3) Multiple quasi-experimental studies

B MODERATE QUALITY: 1) Cross-sectional studies, 2) Controlled case comparisons.

C-D DEPENDS ON USE & STATE OF KNOWLEDGE: Case studies and other descriptive research lack controls to rule out the effects of other co-occurring factors. Their value depends on the content/focus of the study relative to the state of knowledge existing at the time. Descriptive studies can be valuable in uncovering problems (supports, barriers, context) in implementing organizational practices (cf. in-class discussion of POEMS, that is, Practice-Oriented Evidence that Matters). Such studies can help identify previously unknown practice phenomena and form the basis of new theory (e.g., Wresniewski & Dutton’s AMR paper on job crafting is a nice example). In other situations, case and descriptive research can be considered lower quality.

F LOWEST QUALITY (NON-EVIDENCE-BASED): 1) Expert opinion (e.g. WSJ, Ladies Home Journal) or consultant hype, 2) Non-expert opinion including newspaper articles and other journalistic reports, pop management books (unless adhering to Rousseau’s Rule #1), etc. and, 3) Standard, so-called “best” or popular practices.
CLASS SCHEDULE

October 26: CLASS #1 WHAT IS EBMgt?

ADVANCE READING
Rousseau: “Envisioning Evidence-Based Management”
Course Syllabus

TOPICS
Overview Syllabus/Goals
What is EBMgt?

IN-CLASS
Discuss the reading with respect to these questions:
1) What are the key PRACTICES evidence-based managers use?
2) What kind of EDUCATION (training or learning) do managers need to be able to engage in evidence-based practice?
3) How are the practices and education of evidence-based managers DIFFERENT from the norm ("business as usual") today?

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HOMEWORK TO PREPARE BEFORE NEXT CLASS…..

I. Go on-line to http://oli.cmu.edu/ and complete Evidence Module 2 (instructions in class)

II. PREPARE ONE-PAGER #1 TO TURN IN CLASS #2: What’s the Evidence for…?
Check out whether scientific evidence exists for the effectiveness of a popular management practice. We will choose one in class (e.g., Balanced Scorecard, 360 feedback, Lean management.).
   1. Use ABIinform (on-line via Hunt Library).
   2. Search only PEER REVIEWED articles (check that box)
   3. Try to find at least THREE papers related to the practice.
   4. Write up a one-page summary of how you searched, the articles you found, and what conclusions you draw from their findings. Be sure to indicate your conclusions that is, “Is there evidence that the practice or model is likely to be effective or useful?” Tell us how you arrived at this conclusion.

III. BRING YOUR FAVORITE MANAGEMENT BOOK TO CLASS—be ready to tell us how come it’s your favorite!
November 2: CLASS #2 EVIDENCE SOURCES, QUALITY AND THE SEARCH PROCESS

DUE TODAY: One-Pager #1 and Completion of OLI EBMgt module 2

ADVANCE READINGS
Zanardelli: “At the intersection of the Academy and Practice at Asbury Heights”
Wagner: “Smart people doing dumb things: The case of managerial incompetence”

IN CLASS TASKS:
Syllabus Test
Report--Reflections on Your OLI Module 2 Experience
Report--What you learned from your first evidence search
Case: Riverview Healthcare—reading given in class.

HOMEWORK TO PREPARE BEFORE NEXT CLASS…..

Go on-line to http://oli.cmu.edu/ and complete Evidence Module 3. Note this will take you approximately 3 hours to complete. Please do take time with it as you will learn a lot and it makes later issues much easier to understand.
November 9  CLASS #3 EVIDENCE QUALITY, THE SEARCH PROCESS—AND YOUR CAT

DUE TODAY: Completion of OLI EBMgt module 3

ADVANCE READINGS
Barends, Rousseau & Briner: “CEBMa guidelines for critically appraised topics in management and organizations”

TOPIC CATs

EVIDENCE QUALITY

Evidence of Effect vs No Evidence vs Evidence of No Effect

Research Design Issues: evidence of cause & effect or just relationship?

Searching for Quality Evidence
  How do you assess causality without conducting a true experiment?
  Strength of effects and consistency across studies

Threats to validity of findings
  Confounding (Unmeasured variables/ External trends)
  Bias (Recall bias, Lead-time and length bias)

Threats to legitimacy of findings
  Publication and reporting bias
  Misrepresentation: Misleading for profit/ Misleading for belief

Meta-analyses and Systematic Reviews

IN CLASS TASKS:
Report: Reflection on Your OLI Evidence Module 3
November 16: CLASS #4 TURNING ORGANIZATIONAL DATA INTO INFORMATION AND KNOWLEDGE

DUE TODAY CAT #1

ADVANCE READING
Astor, Morales, Kiefer & Repenning, “What problem are you trying to solve? An introduction to structured problem solving”
Davenport: “Make better decisions”
Davenport, Harris & Morison: “How to manage your data for more effective general management”

SUPPLEMENTAL READING
Donaldson: EBMgt using organizaitonal facts”

TOPICS
Your CAT process
Business Analytics
  Improving Data Quality & Usefulness
  Making Decisions Using Organizational Information and Knowledge
  How To Evaluate the Quality of Organizational Evidence

IN-CLASS
Feedback on your Learning Logs
Each team reports on the process and findings from CAT

CASE:
RBGlobal (A) -- discussion questions at bottom of case

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HOMEWORK TO PREPARE FOR NEXT CLASS One-Pager #2

Identify and describe a decision aid or tool that you or someone you know has used. Examples might include a checklist used to guide action or make a decision, a logic model used to organize information about a problem, a formula or model used to guide a decision. etc etc.

1. What’s the purpose of the tool? How is it used?
2. What’s the evidence of the value and validity of the tool?
3. Describe the user, background and training needed to use tool.
4. The strengths and weaknesses of the tool (in the way it is used).
   How might use of such a tool be improved?
1. November 30: CLASS #5 DECISIONS, TYPES, PROTOCOLS & ROUTINES

DUE TODAY: One-Pager #2

ADVANCE READING
Yates: “Let’s Go With It: Decision neglect”
Gawande: “Checklist”
Taleb, Goldstein & Spitznagel: “Six mistakes executives make in risk management”

TOPICS
Decision Awareness vs Decision Neglect
Decision Types: Routine, Complicated, Complex
  Effective approaches to three different types of decisions
Logic Models and Cardinal Decision Rules
Checklists and logic models for evidence use in decision making

IN-CLASS
Feedback on CAT#1
After Action Review FILM
December 7: CLASS #6 BUILDING EBMGT-SUPPORTIVE WORK SETTINGS/
YOUR CAREER AS AN EVIDENCE-BASED MANAGER

DUE TODAY: CAT2

ADVANCE READING
Rousseau & Barends: “Becoming an evidence-based HR manager”

TOPIC
Creating an EBMgt Culture
   From Management Evidence to Tools and Practices
   Decision Supports: Institutionalizing Evidence-Based Practices
   Procedures/Protocols/Tools/Artifacts

TOPICS
Learning how to learn: Debriefing experiences with CATs

Charting Your Route Along the Novice-to-Expert Pathway
   Developing Expertise over Your Career…

IN-CLASS
Team Report Out
Assessments of Learning Outcomes
Letter to Self: “Future Me”

EXTRA CREDIT (2 additional points for completing on-line module by December 14)

Analyzing Organizational Data—OLI pilot test (approximately 90 minutes)

FINAL ITERATION OF LEARNING LOG DUE December 14
REFERENCES

Rousseau’s rule #1: “Never trust truth claims made without references.” This leads directly to the corollary, “Check at least some of those references.”


