Evidence-based Decision Making for Human Services Leaders

Course Syllabus
2022

COURSE CONTEXT
Over the past decade the responsibilities of leaders and managers in not-for-profit organisations have changed significantly: now they are often invited to take a seat at the executive table and participate in solving complex organisational problems. At the same time, most traditional models and new 'cutting edge' solutions often fail to deliver on what they promise. This leaves them with a profound challenge: how can we stay away from trends and quick fixes, and instead use valid and reliable evidence to support the organisation?

In response to this problem the idea of evidence-based decision-making has evolved, with the goal of improving the quality of decision-making by using critically evaluated evidence from multiple sources - organisational data, professional expertise, stakeholder values and the scientific research literature. While this sounds sensible and straightforward, gathering, understanding and using evidence is challenging in many ways and requires a set of specific skills. This executive course will develop your evidence-based skills and enhance your understanding of how an evidence-based approach can be used to support organisational decision-making.

COURSE DESIGN
This advanced course uses a blended learning approach that integrates e-learning modules that can be completed online with workshops that can be attended in person. In addition, this course takes a problem-based approach: starting point are the practical issues (problems/opportunities) typically encountered by not-for-profit managers rather than the body of knowledge produced by academics.

COURSE INTRODUCTION
The specific skills this course aims to develop are: (1) critical thinking and reasoning; (2) identifying and gathering of the best available evidence; (3) critical appraisal of evidence; and (4) applying evidence of different forms to decision-making. In the process of developing these skills the focus will be on evidence from scientific research.

LEARNING OUTCOMES
On completion of this course, participants should be able to:
   • Assess the extent to which claims (made by managers, leaders or consulting firms) are supported by evidence
   • Acquire, critically appraise and apply evidence from multiple sources to support organisational decision-making
   • Conduct a Critically Appraised Topic (CAT) (optional)

CERTIFICATE
Upon completion of the course, each participant will receive an executive education certificate from Carnegie Mellon and the Center for Evidence Based Management (CEBMa).

OVERVIEW OF COURSE SESSIONS

Session	Form	Topic	Date
1	E-learning	Module 1: The Basic Principles of Evidence-Based Management	
2	E-learning	Module 2: ASK Critical Questions about Problems and Solutions	
Workshop	Face to screen	Official welcome of participants, introduction to the course Introduction to evidence-based decision making. Reflection on learning, questions, translation to practice	26 April 2022 4-6pm
3	E-learning	Module 3: ACQUIRE Evidence from Practitioners	
4	E-learning	Module 4: APPRAISE Evidence from Practitioners	
Workshop	Face to screen	Reflection on learning outcomes, questions, translation to practice	May 24 4-6pm
5	E-learning	Module 5: ACQUIRE Evidence from the Scientific Literature *(see optional)*	
6	E-learning	Module 6: A Short Introduction to Science	
7	E-learning	Module 7: APPRAISE Evidence from the Scientific Literature	
Workshop	Face to screen	Reflection on learning outcomes, questions, translation to practice	July 12 4-6pm
8	E-learning	Module 8: ACQUIRE Evidence from the Organisation	
9	E-learning	Module 9: APPRAISE Evidence from the Organisation	
10	E-learning	Module 10: ACQUIRE Evidence from Stakeholders	
11	E-learning	Module 11: APPRAISE Evidence from Stakeholders	
Workshop	Face to screen	Reflection on learning outcomes, questions, translation to practice	16 August 4-6pm
12	E-learning	Module 12: AGGREGATE Weigh and Pull Together the Evidence	
13	E-learning	Module 13: APPLY Incorporate the Evidence into Practice	
14	E-learning	Module 14: ASSESS Evaluate the Outcome of the Decision Taken	
Workshop	Face to screen	Final reflections on learning outcomes, questions, translation to practice	13 Sept. 4-6pm

E-learning 1	Module 1: Evidence-based decision-making, the basic principles
Learning objectives	Summarise the basic principles of evidence-based management; Explain why we need evidence-based management; Explain what counts as evidence; Determine which sources of evidence were consulted; Assess (in general terms) the quality of evidence; Determine whether the 'best available' evidence was used in a decision-making process; Correct common misconceptions about evidence-based management.
Assessment	After completing the module, take the assessment quiz
E-learning 2	Module 2: Asking critical questions
Learning objectives	Identify (hidden) claims/assumptions regarding a practical issue; Determine whether an (assumed) problem is sufficiently clear; Determining whether there is sufficient evidence to support the (assumed) problem; Determine whether the preferred solution is sufficiently clear; Determine whether there is sufficient evidence (from multiple sources) to support the preferred solution.
Assessment	After completing the module, take the assessment quiz
Workshop	**Official Welcome** **Reflection on learning outcomes, questions, translation to practice**
Description	During this session the participants will be welcomed by the lecturers - course objectives, modules, sessions and the optional Critically Appraised Topic (CAT) assignment will be discussed, and a general introduction to evidence-based decision making will be provided. In addition, we will discuss: How do you make decisions? How do managers, leaders and policy makers typically make decisions? How are decisions made within your organisation? How can evidence- based decision making be applied within your daily practice? What are the limitations of evidence- based decision making? Finally, we will discuss the learning outcomes of modules 1 and 2 and answer questions.
Assignment 1	Please think about your answers to the following questions: • Think about a management- or policy decision that was made within your organisation, preferably one you were involved in making (or observed closely). What was the decision-making process? What evidence was available?
Assignment 2	• Take a policy paper, project proposal, strategy document or change plan from your organisation - read the paper and determine the three most critical assumptions. • Suggest ways to evaluate these assumptions.

E-Learning 3	Module 3: Acquire, evidence from practitioners
Learning objectives	Determine the evidence to be acquired from practitioners; Determine how to prevent selection bias when acquiring evidence from practitioners; Determine the best method(s) to acquire evidence from practitioners; Determine whether bias could have affected evidence from practitioners; Formulate clear, unambiguous, and unbiased questions.
Assessment	After completing the module, take the assessment quiz
E-Learning 4	**Module 4: Appraise, evidence from practitioners**
Learning objectives	Assess whether a given person's professional experience is valid and reliable; Grade the trustworthiness of a person's professional experience; Recognize how system 1 thinking influences valid and reliable professional expertise; Determine whether a decision is based on system 1 or system 2 thinking; Recognize common cognitive biases; Identify ways cognitive biases can be overcome; Critically appraise evidence from practitioners.
Assessment	After completing the module, take the assessment quiz
Workshop	**Reflection on learning outcomes, questions, translation to practice**
Description	During this session we will discuss the learning outcomes of modules 3 and 4 and answer questions.
OPTIONAL E-Learning 5	**Module 5: Acquire, evidence from the scientific literature**
Learning objectives	Determine the most relevant online research database(s) given the question; Determine whether a journal is peer reviewed; Determine the most important PICOC terms; Search the Internet for relevant alternative and/or related terms; Search Google Scholar for related or broader academic terms; Test search terms to identify terms that yield the most relevant results; Apply Boolean operators to specify a search query; Use the history function to combine search queries; Apply methodological filters to identify meta-analyses and/or longitudinal/controlled studies; Narrowing search results by adding additional PICOC terms; Limit a search result by limiting the date range.
Assessment	After completing the module, take the assessment quiz
E-Learning 6	**Module 6: A short introduction to science**
Learning objectives	Assess whether a study has been conducted according to the scientific method; Recognize pseudo-science; Assess whether a statistically significant finding is of practical relevance; Assess whether methodological bias may have affected the results; Determine whether confounders may have affected the results; Assess whether a placebo effect may have affected the results; Identify moderators or mediators that may have affected the results; Distinguish quantitative research methods from qualitative research methods; Determine a study's research design; Efficiently read a research paper.

Assessment	After completing the module, take the assessment quiz
E-Learning 7	**Module 7: Appraise, evidence from the scientific literature**
Learning objectives	Assess the impact of an effect size; Assess whether a statistically significant finding is of practical relevance; Assess whether a confidence interval is sufficiently narrow; Assess whether an outcome was measured in a reliable way; Distinguish cause-and-effect questions from non-effect questions; Determine a study's research design; Assessing whether a study's research design is appropriate given the research question (methodological appropriateness); Summarizing a study's main findings, weaknesses, and overall trustworthiness.
Assessment	After completing the module, take the assessment quiz
Workshop	**Reflection on learning outcomes, questions, translation to practice**
Description	During this session we will discuss the learning outcomes of modules 5, 6 and 7 and answer questions.
E-Learning 8	**Module 8: Acquire, evidence from the organisation**
Learning objectives	Acquire evidence from the organisation in a valid and reliable way. Explaining the difference between descriptive and inferential measures. Distinguishing data, from information and evidence. Determining where to find relevant organisational evidence. Explaining the importance of organisational evidence. Classifying data based on their added value. Determining whether the data concerns operational data, metrics, KPIs or benchmarks. Distinguishing 'normal' data from Big Data. Identifying potential barriers to acquire organisational evidence. Determining what types of organisational evidence are available and where they are kept. Determining what organisational evidence to acquire.
Assessment	After completing the module, take the assessment quiz
E-Learning 9	**Module 9: Appraise, evidence from the organisation**
Learning objectives	Determine whether a logic model was used to collect and analyse evidence from the organisation; Assess whether organisational data are relevant; Identify steps in the collection and processing of data that could introduce risk of inaccurate data; Determine whether contextual information is missing; Determine whether there could be measurement error; Assess whether there could be a small number problem; Determine whether a metric is a good representation of the data; Interpret a metric's standard deviation; Assess whether a graph represents the data in a valid and reliable way; Interpret a correlation or regression coefficient; Determine whether a correlation- or regression coefficient is practically relevant; Assess whether there are outliers that may distort the evidence; Assessing whether range restriction may have affected the evidence; Assess whether a confidence interval is sufficiently narrow.
Assessment	After completing the module, take the assessment quiz

E-Learning 10	**Module 10: Acquire evidence from Stakeholders**
Learning objectives	Acquire evidence from relevant stakeholders in a valid and reliable way. Identifying the most relevant stakeholders. Determine which stakeholders could be affected by a decision. Determine which stakeholders could affect a decision, its implementation, or its outcome. Identifying and assessing evidence from stakeholders. Identifying and distinguishing different types of stakeholders.
Assessment	After completing the module, take the assessment quiz
E-Learning 11	**Module 11: Appraise evidence from Stakeholders**
Learning objectives	Assessing whether evidence from stakeholders is representative of the population from which it is drawn. Explaining why stakeholders' subjective feelings and perceptions should be taken into account. Determining whether relevant stakeholders can freely express their views and feelings regarding a (proposed) decision. Determining whether the evidence from stakeholders is sufficiently representative. Determining the practical and/or ethical impact a decision may have on stakeholders. Determining whether there could have been selection bias in the way evidence from stakeholders was obtained.
Assessment	After completing the module, take the assessment quiz
Workshop	**Reflection on learning outcomes, questions, translation to practice**
Description	During this session we will discuss the learning outcomes of modules 8, 9, 10 and 11, and answer questions. In addition, we will discuss: Based on what you have learned, how will you now make decisions within your organisation? How can you apply evidence-based decision-making within your daily practice? What are the limitations of evidence-based decision-making within your organisations? What do you need from your organisation to make better (evidence-based) decisions? What could you do to support evidence-based decision-making within your organisation? What are the limitations of evidence- based decision-making with stakeholders? What could you do to support evidence-based decision-making with stakeholders?
E-Learning 12	**Module 12: Aggregate Weigh and Pull Together the Evidence**
Learning objectives	Apply Bayes rule to determine whether the available evidence supports a claim, assumption, or hypothesis. Aggregating evidence from multiple sources and calculating the probability of a hypothesis. Updating the probability of a hypothesis when new evidence comes available. Assessing the impact of a prior probability. Explaining what proof, evidence, chance, and 'conditional' probability means. Calculating the impact of the likelihood of the evidence. Estimating the likelihood of the evidence: $P(E|Htrue)$ and $P(E|Hfalse)$.
Assessment	After completing the module, take the assessment quiz

E-Learning 13	Module 13: Apply, Incorporate the evidence into practice
Learning objectives	Use the PICOC method to determine whether the evidence applies to the organisational context; Determine whether a decision/intervention gives you the biggest bang for your buck; Assess the level of risk inherent in a decision/intervention; Identify ethical issues that need to be considered; Determine whether (and if so, how) the evidence is actionable; Determine whether moderators need to be taken into account; Determine, given the type of decision at hand, how and in what form the evidence can be applied.
Assessment	After completing the module, take the assessment quiz
E-Learning 14	Module 14: Assess, Evaluate the outcome of the decision taken
Learning objectives	Identify the type of decision (to be) made (routine, non-routine, or novel/hyper complex); Determine whether a decision was executed as planned; Assess an outcome using the "gold standard" method; Assessing an outcome using quasi- or non-experimental methods; Suggest ways to improve the validity and reliability of an outcome assessment; Assess whether an outcome was measured in a reliable way; Assess whether indirect and intangible costs were taken into account; Assess the (unintended) consequences of a decision on stakeholders.
Assessment	After completing the module, take the assessment quiz
Workshop	Reflection on learning outcomes, questions, translation to practice
Description	During this session we will discuss the learning outcomes of modules 12, 13 and 14 and answer questions. We will have final reflections on learning outcomes, questions and translation to practice. We will also discuss the requirements (and time investment) for the optional modules.

Optional 1	E-session: CATs and REAs- question formulation, search strategy, critical appraisal
Description	During this session we will discuss the added value of CATs, Rapid Evidence Appraisals (REAs), and discuss the stages of both.
Assignment 1	Read the McKinsey case and answer the questions
Assignment 2	Conduct a CAT on a topic relevant to your organisation and present your findings in a short report. More detailed instructions will be provided during the session along with examples of CATs and REAs.
Optional 2	E-session: Presentation of your CAT
Description	Each participant gives a 10-minute presentation of the outcome of his/her CAT; official hand-out of certificates. This is also an opportunity for you to draw up an action plan to apply & implement the learned principles to an issue/problem relevant to your own organisation. During the session, you will receive feedback and support from the course leaders.