Ethical Decision Making Measure (EDM)

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Description

The Ethical Decision Making Measure (EDM) is a scientifically validated assessment tool developed by Dr. Michael Mumford and his colleagues at the University of Oklahoma that measures ethical decision-making in a variety of fields. Respondents are asked to answer a series of multiple-choice questions about a series of short scenarios, and there are pre and post tests available.

Body

Home Page: http://ethics.publishpath.com/ (archived website)

What it Measures: The EDM measures an individual's ability to make ethical decisions which have the potential to impact others and to which field-specific standards of conduct apply.

Format: This assessment tool is usually delivered as a pre and post test. It consists of a series of discipline-specific scenarios followed by multiple choice questions. The test usually takes about 45 minutes, and can be administered using a scantron or bubble form.

Disciplines It Assesses:

- Biology
- Social Sciences
- Health Sciences
- Physical Sciences, Engineering
- Scholarship (e.g., History, History of Science, Philosophy, Languages)
- Performance (e.g., Architecture, Art, Music)

Audience: Undergraduate and graduate students

Use Notes: Has been used to assess both ethics courses and training initiatives in the life, physical and social sciences as well as the humanities.

Access/For More Information: The EDM measures for different disciplines, as well as information about using the assessment tool, background information on its development and further articles on its current use is available for free [here](#) (archived website). The University of Oklahoma development team charges a fee to score the tests to ensure the integrity of the data and ensure that doctoral students have time to clean the data, score the measures and provide the summary report.

Associated References

[Antes, A. L., Brown, R. P., Murphy, S. T., Waples, E. P., Mumford, M. D., Connelly, S., & Devenport, L. D. (2007). Personality and ethical decision-making in research: The role of perceptions of self and others. Journal of Empirical Research on Human Research Ethics, 2, 15-34.](#)
This study examined basic personality characteristics, narcissism, and cynicism as predictors of ethical decision-making among graduate students training for careers in the sciences. Participants completed individual difference measures along with a scenario-based ethical decision-making measure that captures the complex, multifaceted nature of ethical decision-making in scientific research. The results revealed that narcissism and cynicism (individual differences influencing self-perceptions and perceptions of others) showed consistently negative relationships with aspects of ethical decision-making, whereas more basic personality characteristics (e.g., conscientiousness, agreeableness) were less consistent and weaker. Further analyses examined the relationship of personality to metacognitive

reasoning strategies and social behavioral response patterns thought to underlie ethical decision-making. The findings indicated that personality was associated with many of these social cognitive mechanisms which might, in part, explain the association between personality and ethical decisions.

Brock, M. E., Vert, A., Kligyte, V., Waples, E. P., Sevier, S. T., & Mumford, M. D. (2008). Mental Models: An Alternative Evaluation of a Sensemaking Approach to Ethics Instruction. *Science & Engineering Ethics, 14*(3), 449-472. doi:[10.1007/s11948-008-9076-3](10.1007/s11948-008-9076-3)

The current effort assesses a novel curriculum that focuses on metacognitive reasoning strategies researchers use when making sense of day-to-day professional practices that have ethical implications. The evaluated trainings effectiveness was assessed by examining five key sensemaking processes, such as framing, emotion regulation, forecasting, self-reflection, and information integration that experts and novices apply in ethical decision-making. Mental models of trained and untrained graduate students, as well as faculty, working in the field of physical sciences were compared using a think-aloud protocol 6 months following the ethics training. Evaluation and comparison of the mental models of participants provided further validation evidence for sensemaking training. Specifically, it was found that trained students applied metacognitive reasoning strategies learned during training in their ethical decision-making that resulted in complex mental models focused on the objective assessment of the situation.

Johnson, J. F., Bagdasarov, Z., MacDougall, A. E., Steele, L., Connelly, S., Devenport, L. D., & Mumford, M. D. (2014). "Improving ethical knowledge and sensemaking from cases through elaborative interrogation and outcome valence." *Accountability in Research* **21 265–299.**

The case-based approach to learning is popular among many applied fields. However, results of case-based education vary widely on case content and case presentation. This study examined two aspects of case-based education—outcome valence and case elaboration methods—in a two-day case-based Responsible Conduct of Research (RCR) ethics education program. Results suggest that outcome information is an integral part of a quality case.

Kligyte, V., Marcy, R. T., Waples, E. P., Sevier, S. T., Godfrey, E. S., Mumford, M. D., & Hougen, D. F. (2008). Application of a Sensemaking Approach to Ethics Training in the Physical Sciences and Engineering. *Science & Engineering Ethics, 14*(2), 251-278. doi:[10.1007/s11948-007-](10.1007/s11948-007-)

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One ethics education approach that shows some promise in improving researchers' integrity has focused on the development of ethical decision-making skills. The current effort proposes a novel curriculum that focuses on broad metacognitive reasoning strategies researchers use when making sense of day-to-day social and professional practices that have ethical implications for the physical sciences and engineering. This sensemaking training has been implemented in a professional sample of scientists conducting research in electrical engineering, atmospheric and computer sciences at a large multi-cultural, multi-disciplinary, and multi-university research center. A pre-post design was used to assess training effectiveness using scenario-based ethical decision-making measures. The training resulted in enhanced ethical decision-making of researchers in relation to four ethical conduct areas, namely data management, study conduct, professional practices, and business practices. Broad implications of the findings for ethics training development, implementation, and evaluation in the sciences are also discussed.

Mumford, Michael D., Shane Connelly, Ryan P. Brown, Stephen T. Murphy, Jason H. Hill, Alison L. Antes, Ethan P. Waples, and Lynn D. Devenport. (2008). A Sensemaking Approach to Ethics Training for Scientists: Preliminary Evidence of Training Effectiveness. *Ethics & Behavior, 18*(4), **315-339. doi:[10.1080/10508420802487815](#)**

In recent years, we have seen a new concern with ethics training for research and development professionals. Although ethics training has become more common, the effectiveness of the training being provided is open to question. In the present effort, a new ethics training course was developed that stresses the importance of the strategies people apply to make sense of ethical problems. The effectiveness of this training was assessed in a sample of 59 doctoral students working in the biological and social sciences using a pre–post design with follow-up and a series of ethical decision-making measures serving as the outcome variable. Results showed not only that this training led to sizable gains in ethical decision making but also that these gains were maintained over time. The implications of these findings for ethics training in the sciences are discussed.

Mumford, Michael D., Lynn D. Devenport, Ryan P. Brown, Shane Connelly, Stephen T. Murphy, Jason H. Hill, and Alison L. Antes. (2008). "Validation of Ethical Decision Making Measures: Evidence for a New Set of Measures." *Ethics & Behavior* **16 (4): 319-45. doi: [10.1207/s15327019eb1604_4](#).**

Ethical decision making measures are widely applied as the principal dependent

variable used in studies of research integrity. However, evidence bearing on the internal and external validity of these measures is not available. In this study, ethical decision making measures were administered to 102 graduate students in the biological, health, and social sciences, along with measures examining exposure to ethical breaches and the severity of punishments recommended. The ethical decision making measure was found to be related to exposure to ethical events and the severity of punishments awarded. The implications of these findings for the application of ethical decision making measures are discussed.

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