Reexamining Examinations: Finding alternatives to traditional written final exams

Abstract

In this session, the facilitators encourage attendees to question the use of written final exams as are frequently used in management classes. Written exams often create significant anxiety for students, and furthermore, exams may not be as effective in assessing student performance as we believe them to be. To address some of these concerns, the facilitators provide alternatives and seek to elicit suggestions from attendees as to how they conduct meaningful end-of-course summative assessments instead of using traditional written final exams.

Keywords: Final exams, Test anxiety, summative assessment

**Introduction**

 The call to improve written examinations has been around for the past century. Ruch (1924) pointed out that:

Examinations are almost or quite as old as formal education, and formal educational methods evolve but slowly. This is as it should be, since, after all, education is one of the conserving forces in society. But the fact that this virtue of slow evolution tends at all times to become a vice, with the consequent result that the best teaching practice tends to lag too far behind the best thought and theory of the moment, would probably be admitted by most educators” (p. 1)

The use of written final examinations is a common end-of-course method for summative assessment of student learning throughout the course. However, such exams are not without issues – issues that may reflect the best thought and theory of the moment, showing that despite 99 years since Ruch’s declaration, and with ample pedagogical and andragogical theory guiding the way, the best teaching practices may still be lagging behind.

**Theoretical Foundation/Teaching Implications**

***Test Anxiety***

Final exams can cause significant student anxiety – anxiety that we feel is undue, as it can be avoided if there are other, better methods of assessing student learning. This is especially relevant with an emphasis on student mental health and when we teach about the importance of such in the management workplace. We argue that creating classroom conditions that can lessen anxiety while maintaining educational rigor are an ethical imperative of responsible management educators.

Test anxiety is a common stressor for collegiate students (Richardson, et al., 2012; Stöber & Pekrun, 2004). Test anxiety is a situation-specific anxiogenic response that derives from trait anxiety and affects evaluative situations (Zeidner,2007). Those experiencing such anxiety perceive examinations as threatening in nature, which in turn leads them to respond with heightened state anxiety (Schnell et al., 2006). Test anxiety should not be dismissed by management educators, it is relatively common, impacting between 14% and 50% of college students (Donati, et al., 2020)

 The impact that test anxiety has goes beyond merely stressing students out. It has been shown to interfere with test performance (Rothman, 2004). Thus, methods that would enable students to reduce anxiety could, in turn, increase student performance (Clinton & Meester, 2019). Clinton and Meester (2019) suggest in-class anxiety reduction exercises, while we suggest that a proactive approach that reduces anxiety by removing the stressor is a viable and preferable alternative.

***Exam Validity***

 Final examinations are often used as the ultimate summative assessment in management courses, however we challenge attendees to consider, when the last time they validated the exams they use in their classrooms.

In writing a preface to Ruch’s (1924) book, Horn wrote, “often great injustice is done both teacher and pupil by promising to measure an accomplishment by a … test which is not a valid measure of that accomplishment” (p. iv). The generally accepted criteria for good assessment include, “(1) validity or coherence, (2) reproducibility or consistency, (3) equivalence, (4) feasibility, (5) educational effect, (6) catalytic effect, and (7) acceptability” (Norcini, et al., 2011, p. 206). We ask session attendees: Do your exams contain these elements?

***Technology and Exams***

 In addition to exams creating unnecessary stress for our students, and questionable validity, there is also the specter that technology is outpacing educators’ exams. Many educators rely on textbook instructor manuals for exam questions; this is an understandable strategy, as such questions are not only convenient, but are frequently presented with specific learning outcomes they purport to measure. The challenge isn’t that these questions aren’t valid assessment items, but rather that these questions are widely available for online purchase to students whose scruples aren’t in line with the ethics we’d hope to have taught them (Savage & Simkin, 2010).

 The accessibility of ethically-questionable answers to exam questions also extends beyond online purchase. The proliferation of artificial intelligence, such as the recently released Open AI ChatGPT3 presents another novel challenge for instructors. University of Pennsylvania Wharton Business School professor Christian Terwiesch (2023) tested this technology by having it complete one of his MBA exams for an operations management examination. The results were striking, “Not only [were] the answers correct, but the explanations [were] excellent” (p. 1). This technology continues to improve, and was relatively nascent as this proposal was written, we expect as it continues to “learn” its performance (and the associated challenges for management educators) will increase exponentially.

***Alternatives to Traditional Written Exams***

 Fortunately, we don’t necessarily need to reinvent the wheel. Even in our society’s own journals there are a variety of suggestions of alternative forms of assessment, including team exams (Stark, 2006) or a combination of methods to evaluate management students that includes oral or behavioral exams, consulting teams, video feedback and more (DiStefano & Howell, 1990).

**Session Description**

During this roundtable discussion session, the facilitators will first introduce themselves, and get to know the attendees. Following this brief introduction, we will move to a group discussion (either full-room, or small groups depending on the number of attendees) about how we can evaluate student performance using alternatives to written examinations. The timeline that follows outlines our plan for this session.

***Timeline***

0.00-0.05 Introductions of facilitators and attendees

0.05-0.25 Interactive discussion (small groups possible, depending on number of attendees) about existing alternatives to written examinations attendees have used and how these address specific learning outcomes

0.25-0.45 Brainstorming (again, small group breakouts possible depending on number of attendees) new alternatives to written examinations to address specific learning outcomes.

0.45-1.00 Debrief with participants

**References**

Clinton, V., & Meester, S. (2019) A comparison of two in-class anxiety reduction exercises before a final exam. *Teaching of Psychology, 46*(1), 92-95.

DiStefano, J. J., & Howell, J. M. (1990) Multiple methods for evaluating management skill development; an integrated approach. *Organizational Behavior Teaching Review, 14*(2), 1-12.

Donati, M. A., Izzo, V. A., Scabia, A., Boncompagni, J., & Primi, C. (2020) Measuring test anxiety with an invariant measure across genders: The case of the German Test Anxiety Inventory. *Scales and Measures, 123*(4), 1382-1402.

Norcini, J., Anderson, B., Bollela, V., Burch, V., Costa, M. J., Duviver, R. (2011) Criteria for good assessment: Consensus from the Ottawa 2010 conference. *Medical Teacher, 33*(3), 206-214.

Richardson M., Abraham C., Bond R. (2012). Psychological correlates of university students’ academic performance: A systematic review and meta-analysis. Psychological Bulletin, 138, 353–387.

Rothman D. K. (2004). New approach to test anxiety. Journal of College Student Psychotherapy, 18, 45–60

Ruch, G. M. (1924) *The Improvement of the Written Examination.* Scott, Foresman, and Company. Chicago, IL.

Savage, A. and Simkin, M.G. (2010), "Ethical concerns about the online sale of instructor-only textbook resources", Jeffrey, C. (Ed.) Research on Professional Responsibility and Ethics in Accounting (Research on Professional Responsibility and Ethics in Accounting, Vol. 14), Emerald Group Publishing Limited, Bingley, pp. 213-231

Schnell, K., Ringeisen, T., Raufelder, D., & Rohrmann, S. (2015). The impact of adolescents' self-efficacy and self-regulated goal attainment processes on school performance—Do gender and test anxiety matter? Learning and Individual Differences, 38, 90–98

Stark, G. (2006) Stop “going over” exams! The multiple benefits of team exams. *Journal of Management Education*, *30*(6), 818-827.

Stöber J., Pekrun R. (2004) Advances in test anxiety research (Editorial). Anxiety, Stress, & Coping, 17, 205–211.

Terwiesch, C. (2023) Would Chat GPT3 get a Wharton MBA? A prediction based on its performance in the operations management course. *Mack Institute – Wharton School of Business.* Retrieved from: https://mackinstitute.wharton.upenn.edu/wp-content/uploads/2023/01/Christian-Terwiesch-Chat-GTP.pdf

Zeidner, M. (2007) Chapter 10 = Test anxiety in educational contexts: Concepts, findings and future directions. In Schutz, P. A., & Pekrun, R. (eds.). Educational Psychology: Emotion in Education. Academic Press. pp. 165-184.