Enhancing Student Outcomes Using Web-Based Simulations

Abstract

Enhancing student outcomes and increasing engagement in different course modalities surfaced as a major imperative for all management educators as a result of the changes brought forth by COVID-19. Using web-based simulations can emerge as a useful tool in both face-to-face and virtual courses, especially in subject areas such as Human Resource Management and Compensation and Benefits. While these courses feature specific human resources (HR) knowledge, they also emphasize critical skills necessary for everyday business interactions, teamwork and decision-making. The benefits of incorporating web-based simulations include providing a unique student experience that can enhance job prospects, a process focused on continuous reflection of student learning and assessment of knowledge, and an emphasis on collaborative and informed decision-making. Participants will assess their own level of comfort with implementing web-based simulations and will discuss potential challenges with incorporating this interactive tool in their courses.

Keywords: simulation, management education, human resources

Introduction

The purpose of this activity session is to share how web-based simulations have been used in both traditional and virtual learning environments to increase student engagement and enhance learning outcomes. Specifically, we will focus on enhancing teamwork and decision-making skills and providing insights regarding questions such as: What are the benefits of using technology such as web-based simulations? Which courses will be better suited for web-based

simulations? What are students' perceptions of the effectiveness of this teaching method? Can web-based simulations be successfully implemented regardless of class size?

Web-based simulations are useful in both junior-level and senior-level courses for undergraduate students. They are suitable for traditional students who are looking for more interactive sessions and enhanced teamwork skills, as well as for non-traditional students as simulations provide opportunities to expand their knowledge and collaboration skills in a risk-free learning environment. We have used web-based simulations in a senior-level Compensation and Benefits course in both a virtual and a face-to-face environment. Students in this course are typically HR majors, however, we also draw in a number of students from other colleges who are pursuing a management minor thus resulting in a very diverse group, allowing students the opportunity to sharpen their communication and collaboration skills. The intended outcome of this session is to encourage participants to explore technologies such as web-based simulations to increase student engagement and facilitate the application of knowledge. Participants will reflect on their own level of readiness to implement web-based simulations and will identify some potential challenges when implementing such simulations. The audience will consist of management educators interested in learning a new tool and determining how it applies to their course. This session will be helpful to those who teach Human Resource courses at all levels.

Theoretical Foundation/Teaching Implications

Scholars have been vocal about the disconnect between business education and transferable practical skills for the marketplace (e.g., Bennis & O'Toole, 2005; Mello, 2006; Quillien, 1993). Anderson, Hibbert, Mason and Rivers (2017) emphasized several existing concerns with the current state of management education and encouraged researchers to develop

innovative forms of learning that address both the turbulent environment of higher education and the turbulent business environment. Traditional classroom environments tend to avoid experiential learning (Mello, 2006), limiting the competitiveness of graduates on the job market (Bennis & O'Toole, 2005).

Lovelace, Eggers, and Dyck (2016) defined web-based simulations as "internet-based, synthetic learning environments where decisions are made within a complex and dynamic setting, and where students experience real-time information and feedback" (p. 101). Simulation based training has been adopted in both academic and corporate settings (Bell, Kanar, & Kozlowski, 2008), touting instructional benefits such as knowledge integration, a safe practice environment, enhanced feelings of presence and engagement, and potential for high degree of interactivity (Bell et al., 2008), as well as the development of critical thinking skills (Lovelace et al., 2016). More specifically, simulations have been used to supplement curricula in areas such as Entrepreneurship (e.g., Kriz & Auchter, 2016) and Strategy (e.g., Hernández-Lara, Perera-Lluna, & Serradell-López, 2019; Lovelace et al., 2016). Nevertheless, human resource (HR) education has traditionally focused on specialized HR knowledge (e.g., McEvoy et al., 2005). However, following the transition from a functional, personnel administration role to a strategic HR business partner role (Kochan, 2004), there has been a drastic change in competencies required of HR professionals (Ulrich, Brockbank, Johnson, & Younger, 2007). Consequently, educators should revise curriculum and adapt teaching methods to foster the development of key skills that would in turn inform innovation in teaching and curriculum design, resulting in experiential, active learning approaches (Washer, 2007).

In a study of three different web-based simulations by three different publishers covering the topics of business management, HR management, and Leadership and teams, Lovelace et al.

(2016) reported that to a majority of students (79%), the use of a simulation demonstrating the real-world application of decision-making was beneficial for developing critical thinking skills to "a great extent" or "a very great extent". Eighty-four percent of students also responded that the simulation provided a context where critical thinking skills could be applied to either "a great extent" or "a very great extent". Among other positive findings based on student feedback, the team-based environment, the competition with other teams, and the interactive nature of the simulation were the most helpful in developing critical thinking skills. In addition, 67% of students reported that instructor feedback was the most helpful feature in developing their critical thinking skills.

Researchers recommend several considerations for educators when implementing web-based simulations. Instructors should ask students to share their concerns with risk and insecure situations and look for solutions, motivate collaboration among the work teams and look for the best team composition when grouping students, promote more fluent communication within the teams by using different media, and understand and help students develop time management skills (Hernández-Lara et al., 2019). Additionally, instructors should provide the correct level of challenge to the students, and provide in-class explanations and supplement materials such as a users' manual to give students more knowledge to make decisions in the simulation (Buil, Catalán, & Martínez, 2018).

Learning Objectives

The authors will overview the benefits of using web-based simulations, provide recommendations for successfully implementing a web-based simulation in HR courses and different modalities, and share evidence of enhanced student outcomes. During this session participants will be able to:

1. Identify the benefits of using web-based simulations to enhance student outcomes (e.g., critical thinking skills, team communication, increased engagement).

2. Share best practices in the adoption of web-based simulations to teach diverse groups of students and a variety of courses.

3. Evaluate the feasibility of using web-based simulations in their courses, especially in an entirely virtual environment, including the pros and cons and offering suggestions for overcoming barriers such as distance, communication, etc.

4. Identify potential challenges when implementing simulations and prepare to address them before adoption of this technology.

The Activity/Exercise Overview

The session will begin by sharing some of the relevant literature on how web-based simulations have been used in the classroom accompanied by a discussion highlighting approaches to how we have changed different assignments in our courses to support student learning. Specifically, we will focus on how we have continued to adapt this simulation every semester to better prepare students and engage them in the activity. We will then demonstrate how we teach/review material and debrief the results of the simulation (we will not be showing/promoting a software product). The web-based simulation is very appropriate in courses that use the flipped classroom method or when the instructor has covered the appropriate materials in the first half of the semester and then has dedicated the remaining time of the semester to the simulation decisions and feedback debrief.

We use the HR Management simulation offered by Interpretive Simulations (e.g., Lovelace et al., 2016) and our combined experience spans over 7 years of teaching a course

using the simulation in both face-to-face and online courses with average enrollment of about 40-50 students.

Classroom Style: Traditional classroom, online classroom, or hybrid

Course Level: This activity is most appropriate for a senior-level HRM or Compensation and Benefits course. It can also be implemented in a junior-level course.

Time Requested: 60 minutes

Resources Needed: desktop computer or a laptop, access to web-based simulation, virtual conferencing tool and screen-sharing capabilities

Conference Session Description

15 minutes – Introduction and discussion of using web-based simulations

5 minutes – Discussion of potential challenges to implementing web-based simulations

10 minutes – Review of best practices for implementation. Participants will rank the feasibility of implementing these in their own classroom based on their student composition and semester duration.

20 minutes – Sample review of course content and a debrief session based on input from student teams and results

10 minutes – Question and answer session focused on how to implement this activity in the classroom

References

Anderson, L., Hibbert, P., Mason, K., & Rivers, C. (2017). Management education in turbulent times: Journal of Management Education Special Issue. *Journal of Management Education, 41*(2), 303-306.

Bell, B. S., Kanar, A. M., & Kozlowski, S. W. (2008). Current issues and future directions in simulation-based training in North America. *The International Journal of Human Resource Management, 19*, 1416-1434.

Bennis, W. G., & O'Toole, J. (2005). How business schools have lost their way. *Harvard Business Review, 83*(5), 96-104.

Buil, I., Catalán, S., & Martínez, E. (2018). Exploring students' flow experiences in business simulation games. *Journal of Computer Assisted Learning, 34*, 183-192.

Hernández-Lara, A. B., Perera-Lluna, A., & Serradell-López, E. (2019). Applying learning analytics to students' interaction in business simulation games. The usefulness of learning analytics to know what students really learn. *Computers in Human Behavior, 92*, 600-612.

Kochan, T. A. (2004). Restoring trust in the human resource management profession. *Asia Pacific Journal of Human Resources*, *42*, 132-146.

Kriz, W. C., & Auchter, E. (2016). 10 Years of evaluation research into gaming simulation for german entrepreneurship and a new study on its long-term effects. *Simulation & Gaming, 47*, 179-205.

Lovelace, K. J., Eggers, F., & Dyck, L. R. (2016). I do and I understand: Assessing the utility of web-based management simulations to develop critical thinking skills. *Academy of Management Learning and Education, 15*, 100-121.

McEvoy, G. M., Hayton, J. C., Warnick, A. P., Mumford, T. V., Hanks, S. H., & Blahna, M. J.

    (2005). A competency-based model for developing human resource professionals.

    Journal of Management Education, *29*, 383-402.

Mello, J. A. (2006). Enhancing the international business curriculum through partnership with

    the United States department of commerce: The "e" award internship program. *Journal of*

    Management Education, 30, 690-699. https://doi.org/10.1177/1052562906289049

Quillien, J. (1993). Management education: thick or thin. *International Journal of Educational*

    Management, 7, 20-21. https://doi.org/10.1108/09513549310023276

Ulrich, D., Brockbank, W., Johnson, D., & Younger, J. (2007). Human resource competencies:

    Responding to increased expectations. *Employment Relations Today*, *34*, 1-12.

Washer, P. (2007). Revisiting key skills: A practical framework for higher education. *Quality in*

    Higher Education, 13, 57-67.