USING REAL DATA APPLICATIONS TO ENHANCE THE ENGAGEMENT, SATISFACTION, AND CONFIDENCE OF ACCOUNTING STUDENTS: AN EXPLORATORY STUDY

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Abstract

The main objective of this research was to determine whether using *real data* in the classroom could enhance the learning experience for accounting students. Forty-eight students participated in this study and provided self-reported information on their level of engagement, satisfaction and confidence - using *real data* (internal or external information created by organizations for stockholders). Students acquired access to companies' financial information through companies' public websites. There was an overall positive experience in working with *real data*. Over 80 percent of participants reported that using *real data* had increased

their learning satisfaction, engagement and confidence and 92 percent recommended using real company financial data over examples from the textbook. We discuss the implications of this study, suggest further research and provide practical recommendations on how to apply *real data* in the classroom as a method of enhancing the overall student experience.

Keywords: accounting education; accounting students, experiential learning; fidelity; real data.

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INTRODUCTION

Future employers expect accounting graduates to possess the ability to analyze data, apply professional judgment and to see “the big picture” in order to provide right information at the right time for making financial decisions, which creates a competitive advantage for clients and businesses students will serve (Tatikonda, 2004; Gamage, 2016; Riley, Cadotte, Bonney, and MacGuire, 2013). In the current job market, accountants spend less time preparing standardized reports and more time analyzing, interpreting and providing information for decision-making (Cory and Pruske, 2012; Institute of Management Accountants (IMA), 2016; Robert Half, 2016). Modern technology has made information preparation easy and inexpensive (Albrecht and Sack, 2001). Accounting graduates should be able to explain not only current numbers, but also predict future events to meet investors’ expectations (Albrecht and Sack, 2001). In order to acquire those skills, accounting students require more exposure to real company data (Boyce, Williams, Kelly and Yee, 2001; Baldwin, Pierce, Joines, and Farouk, 2011; Barr and McNeilly, 2002; Hart Research Associates, 2013).

This paper has two main goals: first, to investigate the concept of fidelity in accounting education (increase working in an environment close to that of the workplace) by using real companies’ financial information/data

in teaching. Fidelity is a measure of the realism (Alessi, 2000; Hays and Singer, 1989; Feinstein & Cannon, 2002; Adamson, 2015) of our teaching approach. Using the fidelity concept could help to bridge the gap between theoretical knowledge and practical application which has been problematical for most professions (Morgan et al., 2006). Second, this paper investigated the impact of using real data in teaching on students' engagement and learning satisfaction by using real company financial data as part of assignment for undergraduate accounting students. After completion of assignment, students were asked to complete a survey based on their experience. Participants were asked about impact of working with real data on their learning engagement, confidence and satisfaction on students as a result of this assignment.

RELATED LITERATURE

Real company financial data (real data) can be partially defined as internal or external information created by organizations for stockholders. Examples of real company data can include Management's Discussions and Analysis (MDA), Annual Reports, and Statistical Information Package, which are often published on the company's website (for example, <https://www.manulife.com/en/investors/results-and-reports.html> for Manulife 2019 results).

Real data application as part of the teaching process could facilitate fidelity and realism in teaching and could reduce the gap between academia and practice. The concept of fidelity is not new and has been used for many years in pilots, nurses and nuclear reactor operators training (Hertel and Millis, 2002). Hays and Singer (1989, p. 50) defined simulation fidelity as "the degree of similarity between the training situation and the operational situation which is simulated." Feinstein and Cannon (2002, p. 426) define fidelity as "the level of realism of a simulation presented to the learner."

Application of *real data* can assist students to visualize business situations and see the results of manipulating variables in a dynamic environment. Students can gain insight into the interaction of variables within an organization (Feinstein and Cannon, 2001). According to Lovelace, Eggers, and Dyck (2016), student-centered experiential learning could also motivate student learning and replicate dynamic and interdependent workplace environments (Bell, Kanar and Kozlowski, 2008; Salas, Wildman and Piccolo, 2009, Ballou, Heitger, and Stoel, 2018) and result in higher transfer of learning to the workplace (Goodman and O'Brien, 2012). Howieson (2003) encouraged faculty to introduce more real-world experience in accounting teaching to prepare students for the new business reality with focus on value-added activities such as analysing and interpreting financial information and providing recommendations for appropriate courses of action. *Real data* application in teaching could help to develop what Bloom's Taxonomy (1956) refers to as the higher-order skills of analysis, synthesis, and evaluation. Although other publications have referenced the use of *real data* (Misch and Galantine, 2009; Grimm and Blazovich, 2016), we are not aware of any research that specifically measures the impact of using *real data* for accounting students on the following three constructs: *Student Engagement*, *Student Satisfaction*, and *Student Confidence*.

Our review of related research indicates the importance of having positive Student Engagement, Student Satisfaction, and Student Confidence. We believe that the enabler of these three constructs is the application of *real data*.

Hao, Yunhua and Weney (2018, p. 517) defined student engagement as "students being actively involved in their learning tasks and activities." Pike (2014) noticed significant increase in the popularity of student engagement assessments over the past fifteen years. Learning improves when a student is inspired by something or shows genuine interest in something. Learning engagement is essential in developing student's critical thinking skills (Lovelace, Eggers, and Dyck, 2016) which are

extremely important for future employment. As mentioned, early student-centered experiential learning enhances student comprehension and application of real data in accounting teaching, which we believe could positively impact student engagement.

Chang and Chang (2012) defined learning satisfaction as the perceived level of joy and fulfilment after completion of learning activities. Topala and Tomozii (2014) compared learning satisfaction with work satisfaction.

Gryka, Kiersma, Frame, Cailor, and Chen (2017, p. 303) defined confidence as “students’ perceived ability to learn or perform a specific task” or students’ internal belief in their accuracy (Renner and Renner, 2001). Confidence can impact student performance. If students are confident with a task, they will perform better than students who are not as confident (de Vries, Dijkstra, and Kuhlman, 1988).

RESEARCH QUESTIONS

Although other publications have referenced the use of *real data* (e.g., Misch and Galantine, 2009; Grimm and Blazovich, 2016), we are not aware of any research that specifically measures the impact of using *real data* for accounting students on the following three constructs: *Student Engagement*, *Student Satisfaction*, and *Student Confidence*. Our review of related research indicates the importance of having positive Student Engagement, Student Satisfaction, and Student Confidence. We believe that the enabler of these three constructs is the application of *real data*. Hence, our research questions about engagement, satisfaction, and confidence are as follows:

Q1: What effect does the application of real financial data in an assignment have on accounting students’ perception of learning engagement?

Our assumption is that including more real financial data in teaching could increase students engagement in course, which we define as: “more

interest and time spent on assignments from students, having personal connection with subject and understanding how what is covered in class and part of assignments could potentially help with future career or relevant to their job search after graduation.”

Q2: What effect does the application of real financial data in an assignment have on accounting students’ perception of learning satisfaction?

Our assumption is that including more real financial data in teaching could increase student’s satisfaction in course, which we define as: “feeling confident with students’ ability to complete learning task with high quality and efficiency.” Using real data in teaching also could be linked to more deep learning compared to surface learning and provide an environment for active learning (Tan, Satin, and Lubwama, 2013; Turner and Baskerville, 2013, Vendrzyk and Bagranoff, 2018)

Q3: What effect does the application of real financial data in an assignment have on accounting students’ perception of confidence?

Our assumption is that including more real financial data in teaching could increase students’ perception of confidence in course, which we define as: “feeling comfortable to complete assigned tasks and not be afraid to try new tasks as students were able to build transferrable skills to work with real financial data.”

RESEARCH DESIGN AND METHOD

Participants

Participants are accounting students at the bachelor’s level who have sound knowledge in accounting and Finance. Fifty students participated in this study from two sections (25 students in each class). Fourth-year undergraduate accounting students were provided with financial information from a real company to complete a Corporate Finance course

assignment. The assignment consisted of two parts: the preparation of certain elements of a financial plan for a selected company and the presentation of results to the Board of Directors (in this case to the instructor).

Incentive Scheme

The assignment was worth 13 percent of the final grade, consisting of 3 percent for the group presentation and 10 percent for the final project submission. Marks were assigned to evaluate students on the following: accuracy, analysis, relevant information, and presentation of financial information. After completion of the assignment, students were asked to complete a survey based on their experience. To incentivize participation, students were offered a \$10 gift card for participation in this survey.

This assignment required significant effort and time commitment from students related to industry research and analysing real financial data. Appendix 2 includes more details regarding the assignment requirements and rubric. Students were provided with examples of selected companies' financial results, presentations from companies' websites and were required to follow a selected company presentation format for consistency. This approach provided an opportunity for students to create a report comparable to an industry standard presentation format.

All students worked with the financial information of the same company in order to keep the level of financial information complexity and volume of work for each group consistent. This approach also provided manageable workload for faculty as they provided guidance and feedback to students. The instructor selected a large local company for three reasons. First, the company was recognizable and professional connections existed between the company and the instructor. It was thought that some students could plan to work for this company after graduation and/or have friends or family members working for the selected company. This approach allowed students to relate to the company on a personal level and perhaps use some information gained from the assignment for

their potential future interviews with the company. Second, the company was selected for its size. This large company provided an opportunity for students to use large *real data* sets, with financial information including details for different business units and geographical locations. Our intention was to provide an opportunity for students to experience “information overload” and, as a result, to understand the importance of finding and presenting relevant information. Third, the instructor had prior professional experience with the selected company and was able to share relevant past work experiences with students, which was beneficial in making this project more real for students.

Students created a simplified financial plan for each business unit and geographical location, as well as for the company overall. In addition, students compared the base company results with those of a major competitor. The competitor company was selected by the instructor. Students were required to work on this project as a group of three and present results of their work to the instructor, who played the role of a member of the company’s Board of Directors. Students answered questions about their presentation and explained related calculations with reference to the source data. Students also analyzed current and future trends in the economy and industry that could impact base company performance. Each group presentation and discussion were completed in 20 minutes. All groups worked with the same companies for this project and individual time was scheduled for each group to present their findings to the instructor only. The instructor provided feedback to all students in order to improve their final submission. The final assignment submission included PowerPoint slides from the presentation and Excel files with all calculations and references to the original data from the selected companies. Students had a week to make final edits prior to their final report submission. Students were provided with support and feedback at various milestones. In addition to the feedback that students received during their presentation, the instructor provided an overview on how to work with a large amount of real financial data, how to focus on relevant information and how to understand differences between

GAAP and non-GAAP reporting. Students had the opportunity to ask questions and clarify assignment requirements and their approach to data analysis and the presentation format.

Students were provided access to the companies' financial information through companies' public websites. After completion of the assignment, students were asked to complete a survey based on their experience. The survey was administered outside of classroom time, over the course of two weeks after completion of assignment. A link to the online survey tool was provided to students in order to complete the survey. Forty-eight students of 50 (96 percent) completed the survey.

Students were asked about the impact of working with *real data* on their learning engagement, satisfaction and confidence. In developing the survey questions, a literature review was completed with a focus on these constructs. Survey questions utilized by Misch and Galantine (2009) and Lovelace, Eggers, and Dyck (2016) formed the basis of the questions created for the study. In addition, the authors had reviewed related business practice engagement and satisfaction surveys.

The authors decided to utilize both cognitive and affect-based attitudinal questions (Cooper and Schindler, 2014). Both cognitive and affect questions often require a statement of direction (whether positive or negative) regarding a particular object (in this case it would be the incorporation of real data and its impact). To minimize the impact that direction can have on a participant's response, all questions utilized a 5-point Likert-type balanced scaling approach (Cooper and Schindler, 2014). The balanced scaling approach was utilized to ensure that scaling itself would allow students the freedom to equally choose a positive, negative or neutral response. A 5-point Likert scale was used, which allowed students to indicate the extent to which they agreed or disagreed with statements regarding their level of engagement, satisfaction and confidence with using *real data*. Survey questions were pre-tested with other faculty in order to find any potential issues, such as unclear language or if the survey completion time was significantly longer than anticipated.

Appendix 1 includes survey questions for which students had provided self-reflective qualitative comments about their experience working with real data in addition to 5-point Likert scale questions. This study received ethical approval from the Research Ethics Board of the institution where the study was completed.

RESULTS AND DISCUSSION

Students Perceptions of Learning Engagement

Table 1 “Student Perceptions of Learning Engagement” provides a breakdown of the survey results of students’ perceptions of learning engagement using the Likert-scale format (see web appendix for tables).

PREVIEW COMPLETE

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CITATION INFORMATION

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WEB APPENDIX

A web appendix for this case is available at: <https://dx.doi.org/10.15239/j.brcadvje.2020.04.01.wa04>