

An immersive learning experience utilizing essential technology in accounting education

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ABSTRACT

Effective utilization of mission-critical technology is an essential skill for modern business professionals. Technology is arguably a dominating presence in the lives of today's business students. However, familiarity and skill with **business-specific** technology is at best an insignificant part of the everyday experience of most incoming students – and they often lack sufficient opportunity to hone business-specific technology related skills to the level of competency expected by the business community. Consequently, opportunities to significantly develop such skills, even in legacy technologies such as Excel, are called for. This case provides a unique contribution to the case study literature as it aims to create an immersive experience in Excel. Students use Excel cell referencing to complete the steps of the accounting cycle and create the main financial statements.

Keywords: immersive learning, accounting education, technology, Excel, scenario-based learning

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INTRODUCTION

Advanced technology utilization and deployment is an essential skill for current and future business and accounting students (Ellis, 2023; PWC, 2023). As the interaction of humans and technology advances, the educational institutions must continue to train students on technologies to respond to the advancing needs of the industry (Shiohira, 2021). Students often begin their education without the necessary requisite technology skills and require significant development even in legacy technologies such as Excel (Daff, 2021). This case provides a unique contribution to the case study literature as it aims to create an immersive experience in Excel. Students use Excel cell referencing to complete the steps of the accounting cycle and create the main financial statements.

LITERATURE REVIEW

Recommendations and guidance offered by the American Institute of Certified Public Accountants (AICPA) and the National Association of State Boards of Accountancy (NASBA) have had a significant impact on efforts to enhance accounting education in the United States. Such guidance from the industry's leading professional organizations is intended to ensure that future accountants are equipped with the essential competencies to effectively meet the evolving demands of the profession (AICPA & NASBA, 2021; Behn, 2012). While recommendations from these bodies encompass a comprehensive perspective on essential competencies, they have increasingly emphasized the significance of technical proficiencies for prospective accountants. This emphasis is aimed at facilitating a productive engagement between emerging accountants and the rapidly evolving technological landscape within the field. Notably, the post-2008 era has witnessed substantial advancements in technology across diverse domains, thereby intensifying the intersection of human capabilities with technology in virtually every facet of human endeavor. The scholarly domain devoted to the study of this interaction is commonly denoted as Human-Computer Interaction (HCI), which is primarily concerned with examining the manners in which individuals engage with information, technologies, and tasks, particularly within the realms of business, management, organizational, and cultural contexts, as articulated by (Zhang et al., 2002; Zhang & Li, 2004).

In 2012, a focus group commissioned by the American Institute of Certified Public Accountants (AICPA) determined that Microsoft Excel garnered the highest degree of utility within the realm of accounting education. This assertion was substantiated through a study conducted by Daff (2021), which involved interviews with professionals in the accounting field aimed at assessing the requisite proficiency levels in Excel expected of accounting graduates. Furthermore, a comprehensive poll conducted by Sharma and Wright (2023), comprising participation from accounting faculty members across various universities in the United States, revealed noteworthy insights. Notably, this survey disclosed that among accounting faculty Microsoft Excel emerged as the most common technological tool utilized in their courses. Consequently, this case study underscores Microsoft Excel as the predominant technological resource employed within accounting and provides the framework for creating an immersive, contextualized learning experience for students to develop their skills.

CASE STUDY

Learning Objectives

After completing this case, you will be able to use Excel to:

- Record basic transactions to balance the accounting equation.
- Transform transactions to basic journal entries in an accounting system.
- Record adjusting entries for accrual-based accounting.
- Create an adjusting and post-closing trial balance.
- Create the main financial statements.
- Evaluate a firm's financial performance, position, and cash flow.

Data and Financial Information

Everything the students need to solve the case assignment is included in the Excel file template that is available from the authors at _____.

Software

The case uses Microsoft Excel to complete the assignment. Most students can access a free version of Microsoft Excel available through their university at [Free Microsoft Office 365 for Schools & Students | Microsoft Education](#).

Prerequisites

Students should have a basic understanding of Microsoft Excel. If students are not familiar with the basic commands in Excel, a brief lesson should be provided to facilitate the execution of cell referencing and absolute referencing within and across tabs in an Excel file and cell functions such as the summation function. The authors provide students with a brief introduction video that explains the case and illustrates the use of cell referencing within and across tabs.

There are several terms that are presented during the case. The authors use the *Accounting Stuff* (Hearle, 2023) open resources available on YouTube (see links to web-related resources in the Excel file).

Background Information and Case Instructions

Case Scenario Background:

Charleston AI Sales Solutions (CAISS), Inc. is a startup business that develops innovative point of sale (POS) solutions that allow customers to walk in, take what they need, and walk out without having to stand in line waiting to be checked out.

The firm is owned and operated by Russell Young, a budding entrepreneur with expertise in business intelligence systems and business process software. Russell has invested his personal savings of \$500K to launch the firm.

You have been asked to create and record the accounting transactions in the general journal and prepare the financial statements for the first month of operations.

Step 1: Open the Excel Template.

Step 2: Read the directions provided on tab one. Complete each tab in the order shown (from left to right). You will use answers from the first tab to complete the second tab, and so on. Review the chart of account tab to familiarize yourself with the various accounts, their descriptions, categories, and debit/credit rules.

- First tab: balance the accounting equation and record accounting transactions, period journal entries and adjusting journal entries for the first month of operations.
- Second tab: create the adjusted trial balance.
- Third tab: create the income statement.
- Fourth tab: create the statement of retained earnings.
- Fifth tab: create the balance sheet.
- Sixth tab: create the statement of cash flows.
- Seventh tab: create the post-closing trial balance.
- Eighth tab: interpret the company's financial position, performance, and cash flow.

Work through the assignment until you encounter an issue and have a question you need answered. Review the posts on the assignment discussion board to see if someone else has had a similar question and read any responses. The more questions/answers that get posted the better but be efficient! If you find the answer to your question, post a quick response, and keep going. Once you hit an issue not posted on the discussion board, post a question, and wait for an answer from another student or your instructor. Proceed until you finish the tabs and obtain all 'check' answers on each tab of the Excel file.

Step 3: Review your posts and ensure that you have engaged sufficiently to obtain a good score. Your instructor is evaluating your ability to collaborate and advance your own learning and the learning of others in the class. At a minimum, ensure that you have posted a message related to what you have learned and what you have struggled with in completing the Excel assignment. Include your main take-aways, challenges that you had (or have) with the steps, areas you need(ed) help with, and insights you gained by engaging with the material (readings, articles, videos), with your class, and the software (Excel). Respond to others to help them along or further your own understanding of the material. Be an active and engaged learner.

You are expected to make at least three posts but feel free to post as often as you like. Remember to review the Discussion Board Grading Rubric to gain insights and ensure you obtain the best scoring for the assignment. The rubric is available within the Excel file for quick reference.

Your instructor will be available on the discussion board to help coach and guide you through the assignment.

CASE TEACHING NOTES

Introduction & Implementation Guidance

The case requires students to analyze transactions, prepare journal entries, create an adjusting and post-closing trial balance, and the main financial statements. Students are required to use cell referencing and absolute referencing within and across tabs within the Excel file and to generate basic formulas to summarize and derive totals for the various financial statements.

This case was included in a required MBA prerequisite course that provides students with an introduction to accounting and finance topics (a leveling course). The case is included as an

assignment in the first module of instruction and is used as a formative learning exercise. Although the case could be taught in any environment, the case was piloted in an online environment, and a discussion board was utilized as a learning space to support students as they completed the assignment. Students were encouraged to post questions about challenges they encountered and to engage with other students and the instructor to complete the case. Initially, students were hesitant about using the discussion board as a tool to work through the answers. After using the discussion board and engaging with other students to solve the case, many expressed how valuable it was to their learning experience. Students acquired confidence as they shared challenges and helped each other learn. A community of learning emerges as students engage with the material and complete the assignment. In a class of approximately 30 students, over 150 discussion board posts were made, and the learning environment was very engaging, productive, and supportive. One student posted,

“This discussion board is a tremendous help, and it is the first time that I have had a class that allows students to help each other. It is an extremely useful tool, and it directly correlates with a lot of jobs.”

Students could post screen shots and collaborate to solve problems and troubleshoot more challenging areas. Students in this class had a range of skills and professional experiences. Some students had a background in business, other students had no background in business or accounting. The discussion board allows students to build their confidence, and for students with more experience, an opportunity to demonstrate their leadership. Here is another related post,

“Coming from a communications background, I had limited experience with Excel and had never taken an accounting class. After completing this assignment, I can now begin to appreciate how essential Excel is in this field.”

Efficacy

Students were asked to complete a ten-question survey following the completion of the case. Below are the questions and the aggregate responses.

1. As a result of this assignment, my ability to identify and describe the main accounting principles has improved.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	17	3	1	0	0
%	81%	14%	5%	0%	0%

2. As a result of this assignment, my ability to complete the steps of the financial accounting cycle, including financial statement creation has improved.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	16	4	1	0	0
%	76%	19%	5%	0%	0%

3. What did you like most about this assignment?

- I enjoyed working with other classmates via the discussion board to answer each other's questions. It allowed for more interaction and collaboration with classmates than I expected.
 - I really enjoyed learning the breakdown of how to work a balance sheet and income statement.
 - The concept that everything is in balance. It is a neat way to think about life.
 - I had to pick everything up for myself. Forced me to learn something.
 - Skills through Excel. This is something I struggle with, so finishing an assignment all the way through while learning the formulas really helps!
 - I really like how the discussion board is set up in this class. As opposed to posting general information about the topic as you do in other courses, you post problems you are encountering. Your classmates help explain how to work through these problems using the material related to that week. I feel like this makes it easier to understand coming from someone who just learned the material with you and can break it down in a way that can be easily understood.
 - I like that there is guidance on how to do certain cells which helps make it easier for the future rather than spending a ton of time trying to find the answer.
 - I liked the discussion posts the most.
 - I did feel that setting the tone for the class with this assignment has made the following instruction more effective.
 - Relating it to your own personal finances along with being able to communicate with the classmates to complete the assignment.
 - The hints/notes prevented me from getting too far ahead with an error, it allowed me to make sure I was on the right track throughout.
 - I was able to relate all my Excel skills and learnt a lot from financial aspects, particularly COGS et al that I can relate to my work as well.
 - I enjoyed the discussion board conversations. I have never seen value in online class discussion boards before this class.
 - Could relate to knowledge.
 - I enjoy being able to reference the discussion board for any snags I might have!
 - This assignment helped me to understand the foundations of accounting and financial statements.
 - Correlation to some work I have done this year in a new role.
 - I really enjoyed utilizing the discussion board to resolve any issues I ran into and to help others as they ran into problems. I also enjoyed the slight challenge of the assignment itself and it being a hands-on way to tie together our learnings for the week.
 - Excel assignment was a great intro and summary of accounting/finance principles for someone (like me) with no prior background.
4. For this assignment, where did you run into problems and how could the assignment be improved to reduce the number of problems you had with this aspect of the assignment?

- My main problem came when understanding which accounts would be credited or debited and was associated with a positive or negative entry into the transaction statement. The assignment was designed well, and this problem is only a lack of my own understanding to improve on.
- Learning to use cell reference.
- My biggest problem was understanding which category really fell into assets or liabilities.
- The problem was all mine. The terms debits and credits were engrained in my head, and I had to learn to think about them differently.
- Everything was very straight forward. Maybe references to where to find formulas in the book?
- I ran into issues when it came to understanding the Excel application itself. I am unsure of how the assignment itself could be improved to help reduce these problems. Maybe in addition to the cell referencing video, a basic video of Excel and its functions.
- Carefully reading the information provided while working through Excel.
- none, the hints, notes, and checks are immensely helpful.
- I was following the hints to complete my assignment, had no problems. Moreover, the assignment was an easier task to complete.
- I did not really run into any serious issues with the assignment.
- Getting started was tough! However, this is expected with my minimal exposure to accounting (so not much could be changed).
- Getting used to cell referencing across tabs.
- The biggest issue I have is identifying which numbers should be reflected as a negative value.
- The main issue I ran into on the Excel Module 1 assignment was comprehending whether the expenses should be listed as a positive or negative in the transaction log. Thanks to help from others on the discussion board, I was able to resolve and understand my issue. I do not know that there is anything that could be done to prevent this. For me, I had to go back to the extra materials provided and the discussion board, so just continuing to encourage.
- Understanding the positive/negative values associated with profits/expenses.

5. This assignment was a realistic assignment.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	19	0	1	1	0
%	90%	0%	5%	5%	0%

6. I believe the information I learned from this assignment will be useful to me in my future career endeavors (and/or graduate school).

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	17	3	1	0	0
%	81%	14%	5%	0%	0%

7. This assignment was at the right level of complexity for a graduate-level introductory course in accounting/finance.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	16	3	1	1	0
%	76%	14%	5%	5%	0%

8. I recommend that the assignment is assigned to students in future semesters.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	16	3	1	1	0
%	76%	14%	5%	5%	0%

9. As a result of this assignment, my ability to use Excel has improved.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Count, n=21	15	3	3	0	0
%	72%	14%	14%	0%	0%

Several improvements were made to the Excel template based on student feedback and instructor interpretation of student challenges. Drop down boxes were added to the transactions (for selecting account names), =If statements were added to the transactions tab to help students balance out each transaction, hints and detailed instructions were added to many of the cells, and the chart of accounts tab was expanded to include account descriptions. A short video was created to show students how to use and create cell referencing and absolute referencing across tabs. These improvements have been adopted in the final case template provided with this case.

Solution

A solution of the Excel template is available from the authors by emailing _____.

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