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Teaching Students to Identify, Document, and Assess Internal Controls

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Abstract

Accounting graduates today need to think critically and evaluate information effectively (Freeman, 2018, citing AICPA, 2016). In particular, accountants need to identify and document business processes and evaluate the associated internal controls. Reflecting these trends, the AICPA (2020) has significantly increased CPA exam coverage of business processes, risk identification, and internal control mapping. This semester-long case, in which students identify and flowchart a business process, uses experiential learning in three areas: internal controls, business-process analysis, and system documentation/flowcharting (Garnsey et al., 2019). It addresses the four key components of experiential learning: Do, Think, Reflect, and Apply; and includes practice in written and oral communication skills (Butler et al., 2019). Unlike many case studies that provide written process narratives, this case requires students to interact with an actual process owner. This interaction helps students develop interpersonal communication skills. Instructors can use this case at the undergraduate or graduate level in either an accounting information systems (AIS) or audit course.

Keywords
Internal controls, business processes, experiential learning

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AIS and audit course instructors have long recognized the importance of teaching business process flows and internal controls. Recent CPA exam changes have increased its coverage of related topics, including business processes, risk identification, and internal control mapping (AICPA, 2020). The CPA exam now emphasizes analysis and evaluation skills more than memorizing facts (AICPA, 2020). These changes reflect practitioners' input about their need for newly licensed CPAs to understand clients' business processes at a deep level.

Techniques commonly used in accounting courses, such as lecture and problem demonstration, tend not to lead to deep learning (Turner & Baskerville, 2013) or the higher-order thinking skills students need to identify risks and controls (Boyce et al., 2001; Freeman, 2018). Thus, we constructed this case to encourage students to think critically and use active and experiential learning methods as they undertake the activities required (Ahmed, 2019; Freeman, 2018; Boyce et al., 2001; Butler et al., 2019). The Accounting Education Change Commission (AECC, 1990) states that students should learn by actively participating in learning. Standard 4.3 of the AACSB accreditation guidelines recommends using experiential learning to provide hands-on experience (AACSB, 2020).

This case is a form of experiential learning that can help students prepare for the CPA exam's task-based simulations (Tysiac, 2016). It exposes students to an actual business-process owner and company. For many of our students, this case provides a first glimpse past the textbook world of debits and credits and into the realistic gathering, using, and transforming accounting information.

Literature Review

Experiential Learning

Kolb and Kolb (2005) describe experiential learning as a recursive process of experiencing, reflecting, thinking, and acting. Butler et al. 2019, refer to these cycles as "do, reflect, think, and apply" (p. 13) and argue that case studies can provide experiential learning in accounting courses.

Boyce et al. (2001) further note that accounting students' learning styles predispose them to use surface learning strategies such as rote memorization. They argue that case studies incorporating experiential learning can expose students to ambiguous and complex decision-making experiences that require judgment derived from deep learning experiences.

Accounting systems researchers have developed a variety of experiential learning activities to use in their courses; for example, Lehmann and Hao (2020) present four short cases to help students in AIS or auditing courses gain experience working with an internal control framework. Lee and Sawyer (2019) developed a case in which students test information technology general controls over user access management. Davis et al. (2017) provide a case in which students complete internal control evaluations. Raval and Raval (2019) offer a case in which students identify and evaluate revenue cycle controls.

Soft Skills

Boyce et al. (2001) examine instructors' use of case studies in accounting education specifically to develop what they refer to as generic (soft) skills, including interpersonal skills, written and oral communications skills, problem-solving skills, conceptual/analytical and critical skills, and judgment and synthesis skills; they conclude that accounting case studies seldom require students to use soft skills or critical thinking; instead, they help students acquire knowledge or develop technical skills (Boyce et al., 2001).

To develop students' soft skills, cases should have them "select and justify the approach they take" rather than simply being given task instructions (Boyce et al., 2001, p. 28). Requiring oral class presentations can help students develop public speaking, listening, and comprehension skills.

Learning Objectives

The case promotes deep learning by providing a learning experience in which students identify a real-world business process and then document and evaluate it. The assignment requires four written deliverables and a final group presentation and addresses all four steps in the experiential learning process (do, reflect, think, and apply).

In this case, students first reach out to an actual business and select one of its business processes to understand and evaluate. They identify controls in that business process (do), document their understanding of those controls using flowcharting software (reflect), use judgment to evaluate those controls (think), present their results to their peers (think), and recommend improvements to the business owner (apply). Thus, in this case, students will:

- LO 1: Demonstrate interview skills by gathering information in a realistic business setting
- LO 2: Identify the tasks, procedures, and personnel in a business process
- LO 3: Identify applicable controls and recommend improvements in a professional manner
- LO 4: Develop written and oral communication skills
- LO 5: Document a business process using flowcharting tools

The Case

We designed the case to simulate a typical, real-world interaction: a supervisor assigns a task to an employee, who must complete it with limited supervision. The case begins with general, intentionally ambiguous instructions and moves forward with ongoing instructor (playing the role of supervisor) assistance as needed. This experiential learning case aims to simulate a realistic accounting job task, including interviewing a client and presenting results verbally and in writing.

Initial Activities

To begin the case, students form groups of four or five. Each group must identify an organization and select one of its business processes to evaluate. Students first meet with the instructor during the third week of the term to brainstorm how to find a business organization. We usually discuss how to use networking connections (such as internships, part-time jobs, on-campus jobs, and family connections) in this activity. For this assignment, our students have used family firms, local restaurants, grocery stores, university departments, and even a driving range. We also allow students to use not-for-profit organizations. After this initial meeting, teams prepare their first written deliverable, a one-page planning memo, and submit it within one week.

Drafting and Revising the Flowchart

Next, after the information-gathering meeting(s), students deconstruct the chosen process into crucial components, departments, and controls. They use this information over a three-week period to prepare a draft flowchart, the second deliverable. The instructor provides feedback after the submission of the draft flowchart. Students can submit multiple iterations of the flowchart for instructor review as needed.

Often, students need to add additional detail, address potential errors in the process, or consider internal controls. Usually, one or two revisions are sufficient.

Assessing Internal Controls and Presenting Recommendations

Students then assess the adequacy of the controls in the selected process and recommend improvements. They communicate these recommendations in class during a 15–20-minute presentation during the final exam period, along with an overview of the company and a description of the processes and controls analyzed.

Summary Document

Students also submit a written summary (1,000–1,500 words) of their work and a final flowchart. This document resembles an auditor's management recommendation letter and briefly describes the process reviewed, identifies key controls, and recommends improvements. The PowerPoints show the same information in a format appropriate for presenting findings and recommendations to management. The main elements of the case include:

1. Initial Consultation. Brief discussion with the instructor, including the choice of company and process selected
2. One-page Planning Memo. Identifies the group members, the company, the individual(s) to be interviewed, and other work plan details
3. Draft Flowchart. Documents the process using flowcharting software chosen by the students in consultation with the instructor; includes key steps and internal controls; identifies personnel by title
4. PowerPoint Presentation (with Presenter Notes). Sufficient to support a 15–20-minute presentation; should include company background and identify the process to be investigated, controls, and recommendations for improvements
5. Summary Document. Provides the same information as the PowerPoint (but constructed as a formal document); a final flowchart version; names of personnel responsible for each control and whether each control is preventive, detective, or corrective; internal control weaknesses; and recommendations

The Appendix includes a detailed student handout for the case. It includes an overview of the case and establishes due dates for course deliverables.

Implementation Notes

Instructors can use this case in AIS or auditing courses at the graduate or undergraduate level. We have used it in both online and face-to-face modalities. Although the online format created some communication challenges, the finished product was of comparable quality to what students produced in the face-to-face modality.

Adjusting the Timing of Deliverables to Course Topics

Instructors can schedule case deliverables to coincide with the coverage of the related topics in class. For example, covering flowcharting and other documentation techniques before the due date for the draft flowchart would make sense. We make the final deliverables due at the end of the term, which allows us to cover the COSO internal control model and major transaction processes before students must identify internal control improvements. To help instructors accomplish this timing in their courses, we provide Table 1, which shows prerequisite topics for each case element.

Table 1
Prerequisite Topics for Case Elements

Deliverables	Recommended Prerequisite Topics
Initial Consultation	Initial class discussion regarding the assignment
Draft Flowchart	System Documentation Techniques / Flowcharting COSO and Internal Controls Controls for Information Security General and Application Controls
15–20-minute PowerPoint Presentation, Final Flowchart, and Summary Document	Revenue Cycle: Sales to Cash Collections Expenditure Cycle: Purchasing to Cash Disbursements Production Cycle Human Resources Management and Payroll Cycle General Ledger and Reporting System

Unlike most case studies, which provide written process descriptions, this case requires students to interact with real business process owners. Thus, this case requires that students communicate effectively to correctly identify, document, and assess the business process and the related internal controls.

Repeated Interactions With the Instructor

The case instructions are intentionally high-level to challenge students. Accordingly, repeated interaction with and feedback from the instructor is essential. Feedback gives students direction and focus, especially regarding the scope of work. We find that students are inclined to take on either too much or too little. A scope that is too broad (the entire company) or too narrow (a bank deposit) will lead to an unsuccessful outcome. We designed the case's limited written instructions, augmented by instructor feedback, to provide a realistic environment where informal supervisor guidance is the norm.

The in-class time required for this case includes an initial discussion during the first or second class period and the student presentations, which we use instead of a final exam. We plan one formal 20-minute initial meeting for each group. Reviewing and responding to each flowchart revision generally takes 20–30 minutes. We typically handle student questions before or after class, by email, or during regular office hours. We grade the presentation in real-time and the summary document using the time we would use to grade final exams. We provide additional implementation guidance in the Teaching Notes.

Adapting the Case to Include Other Learning Objectives

Instructors can adapt this case to meet other learning objectives or requirements. For example, requiring students to set up and run the initial consultation as a business meeting with a formal agenda would help students acquire the skills of planning and running such meetings. Having students submit a list of interview questions for review and approval before meeting with the client could help students improve their interviewing skills. To evaluate students' professionalism and communication skills, the instructor could contact process owners interviewed by students and ask for direct evaluations of the students with whom they worked. Finally, instructors can adjust elements of the case to meet the objectives of an existing department, college, or university experiential learning requirement.

Efficacy

Student Feedback

We have used this case during nine semesters with over 150 undergraduate students at a small private university. We administered a post-completion survey to solicit student feedback in three of those semesters. We received 13 responses, which indicated students felt the case helped increase their understanding of business processes, internal controls, and flowcharting. The survey also showed that students felt the case helped reinforce textbook content. Students also supplied open-ended comments in the survey, including the following:

- Learning about internal controls and the use of flowcharts helped my understanding of business functions a great deal. Without the semester-long project, I wouldn't have been able to correlate [the] actual business processes of a particular system to the material discussed in class. Overall, the AIS project is something I consider when walking into a new store or learning about a new business. It changed the way I look at a company.
- The semester-long project evolved with the material learned [through] the semester. The project was more interesting with thinking about the different aspects of the class material. Class instilled a foundation. The project was [a] practical application of the material.
- Seeing all the other presentations really helped as well. It showed that not every business will have the same process, controls, or documentation. Also, other groups ended up thinking of things differently than my group and it just showed that there is not one way to go about this project. I not only learned by working with my group but by listening to what the other groups came up with.
- I think the final project made me understand a lot better what controls must be implemented into a real company/business. I understood now that at times [businesses] don't even understand processes and controls[;] therefore, I believe that maybe that's what keeps some [businesses] from being successful; at times [businesses] need better controls to maximize their profits, budgets, and inventory. I think this project was a good eye-opener because as I mentioned, [businesses] often might be struggling prior to being introduced to controls and processes.
- Overall, I enjoyed the project and feel like the real-world example added greatly to my understanding of the business process. It could have been a more informational experience had our group [chosen] a more structured business but the general understanding was there.

We believe the student comments reflected an improved understanding of all three categories of business processes, internal controls, and system documentation (in the form of flowcharts). Students liked the practical application of the material and learning that different companies successfully achieve internal control using various means.

Practitioner Feedback

We also solicited feedback from local accounting practitioners. They felt the case would help students improve their interview skills, ability to document evidence and conclusions, and familiarity with accounting processes and systems.

Conclusion

This case provides a hands-on opportunity for students to learn about business processes and internal controls in an authentic setting with the level of guidance they will likely experience during the first few years of their careers. We use the case to encourage students to take initiative and learn from the process as much as the final product. Partly for this reason, we do not grade the interim deliverables but emphasize learning from the continual, instructor-provided feedback.

In our experience, students report working the case to be transformative. Their initial desire for specific instructions fades as they find themselves developing insightful and often creative recommendations for business process improvements.

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Appendix

Internal Control Case

Deliverables are due throughout the term and on the day of the final. In groups of no more than four, identify a company or organization and interview a representative about one of their key business processes or transaction cycles. Processes might include purchasing/cash disbursements, sales/cash collections, or payroll. To identify a candidate, consider companies where a team member has worked or organizations in which a team member has participated. After the meeting, document the process, identify relevant controls, and recommend process improvements. You might have follow-up questions after the interview, so arrange politely for that possibility. The case is worth 150 points, 15% of your total grade.

Table A1
Timeline and Deliverables

Step	Deliverable	Due	Description	Points
1	Initial consultation	Week 3	Each group schedules a brief discussion of the case with the instructor that is a brainstorming session to help identify the company and business process to and to answer student questions. Students are responsible for scheduling this meeting.	10
2	One-page planning memo	Week 4	The planning memo should document the members of your group, the name of company and specific individuals you will interview, the process(es) you will document, and other details pertinent to your plan.	20
3	Draft flowchart	Week 7	The team submits a draft flowchart created using flowcharting software. The flowchart should include key steps, key controls, and must identify personnel by titles (not names). The instructor reviews the draft and provides feedback to be incorporated into the summary document in Step 5.	20
4	PowerPoint presentation, including PPT file and notes	Exam Week	Professional-level presentations (10-12 slides, 15-20 minutes) should include company background, details of the system or process you researched, along with pertinent controls and suggestions for improvement. The written deliverable includes a copy of the slides, including the Presenter Notes section in the PowerPoint file. The notes should include enough information such that someone could give this presentation in your absence. It should not be a novel, but brief key points and expansion on those points is helpful.	50
5	Summary document	Exam Week	The summary document should: • Briefly describe the company, process, and steps in the process. • Include a final version of the flowchart. • Identify key controls in the process. • Identify personnel (by title) responsible for each control. • Identify the type of control (preventive, detective, or corrective). • Identify any control weaknesses and make recommendations as appropriate. • Be 1,000–1,500 words long.	50

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