

Using Reflection and Collaborative Learning Exercises to Enhance Student Learning in an Accounting Course: An Application of Constructivism Learning Theory in Business Education

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Objectives: In constructivism learning theory, learning is the process of students' integrating new information with existing knowledge. Reflection and social interactions are emphasized by constructivist philosophy. This paper introduces innovative teaching tools supported by the constructivism learning theory and describes the application of these tools in an accounting course.

Methods: The author applied two specific assignments in both online and in-person sections of the same accounting course throughout the semester. Students' feedback was collected at the end of the semester regarding the effectiveness of the assignments on enhancing their learning experience.

Results: Students' feedback demonstrates the benefits of applying the assignments in the course. The feedback is categorized to show different dimensions of the benefits perceived by the students.

Conclusions: The two assignments, which are the application of constructivism learning theory, are beneficial to student learning in an accounting course. They are helpful for students' self-reflection, peer interaction and knowledge retention. Accounting and business instructors are suggested to incorporate these formative assessments in teaching to not only enhance student learning experience in the course, but enhance their overall educational experience in pursuing a degree in business administration.

Key Words: Constructivism, Reflection, Collaborative Learning, Formative Assessment, Instructional Strategies

Introduction

Constructivism represents an instructional approach based on

the notion that learning is the product of mental construction, that is, students construct knowledge in their minds. From the perspective of constructivism, students learn by integrating new information with their existing knowledge. Instead of passively absorbing information, learners construct knowledge from activities and reflections (Garmston & Wellman, 1994). The constructivist view of learning considers learners as "active agent in the process of knowledge acquisition" (Olusegun, 2015). The constructivist philosophy also emphasizes the importance of social interactions, such as student-to-student interaction, in knowledge construction (Shuell, 2001).

This case report introduces two innovative assignments sup-

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ported by the constructivism learning theories and describes the application of these assignments in an accounting course. Accounting courses are essential in business curriculum and are usually commented by business students as “boring” and “challenging”, using innovative teaching methods in accounting courses not only enhances students’ learning experience in accounting subject, but enhance their overall educational experience in pursuing a degree in business administration.

Literature Review

Prior studies explore the application of constructivist theory in business education. Ekpenyong and Edokpolor (2016) suggest that constructivist methods in this field include problem-based learning, inquiry activities, and dialogue that promotes critical thinking and analysis. They conclude that these approaches can enhance effective teaching and learning in business education. Dziubaniuk and Nyholm (2021) investigate effective teaching methods for sustainability and business ethics in undergraduate business courses. Their findings indicate that students value interactive learning, such as assignments and discussions, which help them apply theoretical concepts to real-world situations. The study emphasizes the importance of engaging students in personalized, constructive learning to enhance their future career readiness. Lee, Long, & Visinescu (2016) demonstrate that specific constructivist approaches, including collaboration and the integration of different subjects, have positive effects on learning outcomes in the field of business intelligence. Kayii and Akpomi (2022) recommend constructivist approaches in entrepreneurship education. They advocate for policies promoting collaboration between small business entrepreneurs and research institutions to leverage research findings for sustainable technological development.

Prior research also emphasizes the importance of applying constructivist principles in accounting education. Pereira and Sithole (2019) recommend that educators shift from traditional teacher-centered approaches to more participatory, student-centered methods to enhance student engagement and performance in accounting education. They stress that learning should be an active, engaging process where students construct knowledge based on their prior experiences rather than passively receiving information. Musundwa (2024) highlights that adopting constructivist principles can significantly enhance the educational experiences of underrepresented students, ultimately leading to improved academic outcomes in accounting education.

Case Description

Motivation

Learning accounting is crucial for business education because accounting is the language of business. Accounting provides the foundations for understanding financial statements, including income statement, statement of stockholders’ equity, balance sheet and statement of cash flows. This knowledge is essential for decision makers such as investors, creditors and managers to make informed decisions about investment opportunities, resource allocation, pricing strategies and cost control. Besides, learning accounting helps students understand the inner-working of business entities, thus effectively evaluating the success of business strategies and identifying areas for improvement. Furthermore, accounting is closely related to other areas in business such as finance, marketing and management. Learning accounting enables business students to connect accounting knowledge with other business subjects and utilize accounting information to assess business issues such as investment, financial planning, marketing campaigns, customer relations, etc. The importance of accounting in business education motivates educators to develop innovative instructional strategies to enhance student learning in accounting courses. Prior studies describe methods to enhance students learning in accounting courses, examples include small group approach (Benis, Brody, & Johnson, 1976); analysis-of-diagnostic-exam driven learning cycle (Shoulders & Hicks, 2008) and practical real-world examples of earnings management (Faello, 2016). Inspired by constructivism learning theories, the author developed two innovative teaching assignments, interactive learning reflection and collaborative learning exercise, and applied them in an accounting course for both in-person and online sections.

Method

Two innovative assignments (described below) were used in an online section and an in-person section of the same accounting course throughout the semester. Assignments were in the same format for both sections, which were taught by the same instructor. Students’ feedback was collected at the end of the semester using a survey. The case study was conducted in an institution located in Northern California in the United States. Students are all accounting majors and in their sophomore year. Most of them are from Northern California area.

Assignment #1: Interactive Learning Reflection on Increased Knowledge

Accounting knowledge is cumulative, students learn a similar list of topics in intermediate accounting courses compare to

what they learn in introductory accounting courses, but the course content is much more in-depth and requires high-level thinking. This assignment requires students to reflect on the new information they acquire in each chapter, link the incremental knowledge they learn in the chapter to what they have learned in introductory accounting courses, think about why the incremental knowledge is important, and share their perceptions with their peers. This learning reflection exercise is done on the discussion board, where students post their reflections and can view/comment on their peers' reflections.

This exercise is consistent with constructivism theory in which students learn by integrating new information with old knowledge. By linking the new accounting knowledge that they learn in intermediate accounting to the old knowledge they learn in introductory accounting, learners reflect on what incremental knowledge they learn for each topic and why the incremental knowledge is meaningful. Constructivism also underscores social interactions such as student-to-student interaction in knowledge construction (Shuell, 2001), learning is considered as a process that requires the development of conceptual structures through reflection and abstraction (von Glasersfeld, 1995). The assignment design of posting reflections on the discussion board enables students to view and comment on the reflections of other students, thus motivating them to interact with peers and learn from each other.

Example: Chapter 8 (Inventories: Measurement) Reflection

What are the incremental knowledge regarding inventories that you have learned in chapter 8 compared to what you learned in introductory accounting?

Why learning the incremental knowledge on inventories is important?

There is no right or wrong answer. No length requirement for your response. The purpose of this question is to help you reflect on your learning experience and improve on future performance by analyzing what you have learned and how far you have come. You are encouraged to reply to your classmates' responses after posting yours.

Sample Student Response:

"I have learned a lot more about periodic vs perpetual accounting in this class compared to intro accounting. Intro accounting focused a lot more on periodic than perpetual, so it is nice to dive a bit deeper into that. It is a little confusing for me learning how to calculate the correct COGS (cost of goods sold, noted by the author) with perpetual, but I am getting better with practice."

Assignment #2: Collaborative Learning Exercise ("Learning Buddy")

This assignment requires students to talk with a classmate, discuss learning strategies, and then share their discussed learning strategies on the discussion board. Students may easily feel isolated in their learning process, a "learning buddy" makes them feel connected to others and motivates them to study.

This exercise is a more direct application of social interaction, particularly student-to-student interaction, in the course. Consistent with constructivists' view, social interactions are important in knowledge construction and students are active in constructing their own knowledge (Shuell, 2001).

Example: "Learning Buddy" Discussion

Talk with one of your classmates, discuss about how each of you prepare for the exam, write down your review strategies after your discussion. This is a forum that helps you interact with your peers and learn from each other on how to prepare for the exam.

Sample Student Response:

"Before the exams I normally study by making quizlets and flashcards to go over the concepts. I also review the homework problems to look at examples and then look in the textbook for additional practice problems to work on. The thing that I think works the best is looking at the homework and practice tests."

Findings

The students' comments on both assignments are helpful for instructors to learn about the effectiveness of the assignments on learning and appropriately integrate them not only in accounting courses but in other business courses.

Students' Comments on Assignment #1: Interactive Learning Reflection on Increased Knowledge

1) Reflection assignments were helpful for self-reflection

"It made us recall previous information or make new mental connections." (online)

"The discussion made me realize what more we're actually learning in comparison to intro." (in-person)

"It adds depth to the comparison of our earlier classes to the one we are currently taking and gives insight to what others have learned as well." (in-person)

"This allowed me to really think about what I was learning and put it into words." (in-person)

"It makes you go back and think about what you've done and see others interpretation of the assignment." (in-person)

“The learning reflection discussion board has helped me reflect on what I have learned.” (in-person)

2) *Reflection assignments were helpful as students can see others' reflections and interact with peers*

“The reflection discussion gave me an opportunity to really consider the content we covered and see the main points that others took away as well.” (online)

“It was good to see what other students put for their reflections.” (online)

“Learning reflection is great because you can get different viewpoints from other peers.” (online)

“I think having to post a discussion is good and allows us to interact with other classmates.” (online)

3) *Students are willing to use reflection activity themselves for knowledge retention*

“It was good to have this to maybe help understand some things I was struggling with.” (online)

“I do understand that reflections are a way for the students to think back to previous instances of dealing with the chapter's material. For me, I didn't really remember much, so the only thing I could do was go over how I understand the subject at that very moment.” (in-person)

Students Comments on Assignment #2: “Learning Buddy” Exercise (Collaborative Learning)

1) *The “learning buddy” exercise was helpful for interacting with peers*

“I think this helped me because it got me to talk to other classmates. The person I did these assignments with ended up being incredibly helpful and super supportive whenever I had questions or was struggling throughout the entire semester. That was really nice to have especially in an online class.” (online)

“Got to meet new accounting majors.” (online)

“Getting to interact with someone else is great because you see how others study and things we have in common.” (online)

“It is always nice to see what others use to study with I always wonder if I am using the best method so to know others study habits is helpful.” (in-person)

“This was effective since we were able to see others and how they prepare for an exam.” (in-person)

2) *The “learning buddy” exercise was helpful for gaining new strategies of studying*

“It was a good way to see different study habits and test them out.” (online)

“This assignment provided me with useful strategies to succeed in the class through collaboration and crowd intelligence. It also built on the foundation of support developed in the beginning of the semester.” (online)

“I definitely gained new ways of studying for this class.” (online)

“It is once again a helpful “pit stop” for us as students in the class. For example, it may help students discover new methods to improve on results for examinations/homework.” (online)

“Get to know about different study methods.” (in-person)

“I saw various ways to try studying that I wasn't doing.” (in-person)

“I learned different study strategies that I hadn't done or considered before.” (in-person)

“I was able to see other ways to study and learn the material.” (in-person)

3) *The “learning buddy” exercise was helpful for reflecting on how to study*

“I did enjoy this one. It's important to analyze HOW you're going to study. Setting up a roadmap to the way one is going to study can help out in a big way. It can help jumpstart the thought process so that you can envision the act better in your head.” (in-person)

Students' Expectations and Suggestions from Mid-Survey

A mid-survey was conducted in the current semester. Besides reporting similar benefits to those described above, students also expressed their expectations and suggestions for future assignments in the rest of the semester. The results indicate that even completing one or two assignments is beneficial to student learning. Besides, the suggestions are helpful for instructors to refine the assignments.

1) *Benefits*

“The writing assignment prompts the students to critically analyze their knowledge and look at how their understanding has grown, making connections and reinforcing the learning process.”

“I think that it helps me better understand the material discussed in class as well as the additional information learned from classmates' discussion responses.”

“I think it is effective because it helps me reflect on what I learned. I have to go back and read to make sure what I am writing is the correct information. It also makes me think about it conceptually versus mathematically.”

“When I do the reflection on new knowledge, it helps reinforce what I learned during the week. After completing the

homework for the week, doing the reflection is basically a summary of what new concept I practiced which then helps solidify the new information.”

2) Suggestions

“Maybe something that asks more about ethics and what you should do in certain situations.”

“... do 3–4 discussion posts with regards to ethics in relation to the current chapter or subject. I personally like this as it connects our study to the real world and makes you have to actively think outside of the journal entries and numbers.”

Statistical Results

The majority of students participated in the survey, which used a 5-point Likert scale (1: very ineffective; 2: ineffective; 3: neutral; 4: effective; 5: very effective) to rate the assignments’ impact on enhancing their learning experience. Students also provided written comments. The “reflection on increased knowledge” assignment received an average rating of 3.64, with 88% of comments being positive (e.g., “helpful”, “good method”, “eye-opening”). Similarly, the “learning buddy” assignment received an average rating of 3.84, with 90% of comments being positive (e.g., “helpful”, “effective”, “gained new ideas”). The percentage of positive comments exceeds the percentage of “very effective” and “effective” ratings for both assignments. This discrepancy occurred because some students who rated “neutral” still provided positive feedback.

Discussion

Students’ comments such as “make new mental connections” and “add depths” are consistent with the intention of applying constructivism learning theory, which allows students to learn by integrating new information with their existing knowledge and construct knowledge in their mind. Learners are active agents in the process of knowledge acquisition (Olusegun, 2015). Student comments such as “succeed in the class through collaboration and crowd intelligence” and “getting to interact with someone else” is consistent with constructivist’s emphasis of the importance of social interactions, such as student-to-student interaction, in knowledge construction.

While there is no generalizable empirical evidence provided in this case report, there are some differences in students’ feedback regarding these assignments between the in-person and online sections. 5-point Likert scale is used for the questions regarding effectiveness of the assignment on enhancing learning experience, 1 is not effective at all, 5 is very effective. The effective rating of the “interactive learning reflection on increased

knowledge” is higher for in-person students than that for online students, possibly because the assignment also encourages in-person students to have in-person discussions with the instructor and/or classmates about the new knowledge learned in each chapter. The effective rating of the “learning buddy” exercise is higher for online students than that for in-person students, possibly because the assignment provides an opportunity for online students to interact with each other, which they don’t have during asynchronous online learning.

Conclusion

This case report describes the application of constructivism learning theory in business education by introducing two innovative assignments. The first assignment is “interactive learning reflection on increased knowledge”, which requires students to reflect on the new information they acquire in each chapter, link the incremental knowledge they learn in the chapter to what they have learned in introductory accounting courses, think about why the incremental knowledge is important, and share their perceptions with their peers. This learning reflection exercise is done on the discussion board, where students post their reflections and can view/comment on their peers’ reflections. The second assignment is a collaborative learning exercise named “learning buddy”, which requires students to talk with a classmate, discuss learning strategies, and then share their discussed learning strategies on the discussion board. These assignments are used in an accounting course taught by the same instructor for both online and in-person sections. Students report positive feedback on both assignments. The perceived benefits are consistent with the intention of applying constructivism learning theory, which allows students to learn by integrating new information with their existing knowledge and construct knowledge in their mind. They are also consistent with constructivist’s emphasis of the importance of social interactions, such as student-to-student interaction, in knowledge construction.

In accounting classes, summative assessments are widely used such as exams and projects, which evaluate learning outcomes at the end of the course and are usually heavily weighted in grading. The assignments introduced in this case report, especially the reflection exercise, are formative assessments which are assigned throughout the semester and aim to enhance student learning experience (Theall & Franklin, 2010). The results of the study also imply the advantages of maintaining a balance between summative and formative assessments in accounting education.

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