

# Teaching Accounting Students to Think Critically by Engaging Them in the Classroom

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## Abstract

This article seeks to help faculty learn ways for accounting professors to incorporate teaching critical thinking based on research by Stephen Brookfield, a well-published expert in the field of critical thinking education. The paper will focus on how Brookfield's research on teaching critical thinking can change the traditional accounting classroom where students passively cover content to a classroom where students engage within the content so that they develop the critical thinking skills necessary to effectively work in the profession. The authors will present three teaching methods that professors can implement in their classrooms to begin to teach students critical thinking skills. The value of this piece is in simple changes accounting faculty can make in their classroom to help students shift from sitting passively in class to more enhanced learning with higher order thinking skills. These skills will better prepare students for the accounting profession.

Keywords: critical thinking, accounting education, active learning, Brookfield

## Introduction

The accounting profession is a fast-paced, constantly changing environment, and the roles and responsibilities of those in the field have evolved over time. Industry is pleading with universities to supply them with students who can think critically about data by analyzing and evaluating it for strategic use. Critical thinking and problem-solving abilities are imperative for today's students and future accounting professionals as employers desire graduates who demonstrate higher-level skills including application, analysis, and evaluation (Vien, 2021). While the traditional lecture method of teaching accounting has not proven conducive to teaching the critical thinking skills that employers are demanding, many professors struggle with learning how to teach content in a way that does develop the critical thinking skills that the accounting industry desires.

The purpose of this article is to help professors identify strategies they can use in the accounting classroom to enhance accounting students' critical thinking skills—skills desperately needed in the accounting profession today according to industry. The authors will provide a brief description of the skillsets the accounting industry desires as well as what is now tested on the CPA exam. The article will also explain some of the reasons that some professors are resistant to change. The authors will then focus on how professors can use Stephen Brookfield's research on teaching critical thinking to change the traditional accounting classroom where students passively cover content to an active classroom where students engage within the content so that they develop the critical thinking skills necessary to effectively work in the profession. The value of this piece is in the simple changes accounting faculty can make in their classroom to help students shift from sitting passively in class where they listen to and memorize

content to an engaging classroom with more enhanced learning of both content and skills. Professors will take away methods to incorporate teaching critical thinking based on the research by Stephen Brookfield, a well-published expert in the field of critical thinking education (Brookfield, 2012).

## Literature Review

### *What Skill Sets Do Employers Want in Accounting Students?*

From rapidly changing technology to the increased number of accounting standards since the codification, future CPA's and CMA's must be willing to move quickly to learn new ideas and embrace the changing business environment where their clients operate. Burke and Gandolfi's (2014) research respondents speak to the changing role of the CPA from twenty-five years ago. One stated that "today we are required to be more familiar with all aspects of the client's business and not just a ...bookkeeper, but someone who can accurately provide assistance with the clients' overall business needs" (Burke & Gandolfi, 2014, p. 344). CPAs are now more integrated in the day-to-day business juggling a great number of tasks that are not taught in the accounting classroom (Burke & Gandolfi, 2014).

As a result of the changing professional landscape, current accounting students must build competencies as much as a knowledge bank of facts. The CPA profession is facing a "competency crisis" in terms of a wide gap between what is taught in accounting classrooms and what is needed in terms of competencies for professional success (Brewer et al., 2014, p. 30). Another of Burke and Gandolfi's (2014) research respondents emphasized the need for research, application, technology and business simulations. He stated that his accounting education experiences had "too much memorization of rules and regulations," and needed "more doing and less memorizing" (p. 344). Foundational competencies such as communication, quantitative, analytical thinking & problem solving, interpersonal, and technological should be integrated throughout the accounting curriculum and business core (Brewer et al., 2014).

Turner et al. (2011) further make the argument that accounting education should focus on critical thinking skills and other higher order cognitive skills due to the constantly changing content for accountants to learn. They reference the large number of changes in tax law and also the immense changes to Generally Accepted Accounting Principles (GAAP) and Generally Accepted Auditing Standards (GAAS) over the most recent years. Compared to 1980, there are three times as many pages in the IRS code, four times as many accounting standards, and five times as many audit standards (Neely & Donnelly, 2020). Turner et al. (2011) posed the question, "Will their tax education be out of date before the ink dries on their diplomas or they sit for the tax section of the CPA exam?" (p. 41). With the constant update in GAAP, GAAS, and the Internal Revenue Code, students must be able to conduct competent research and apply it as well to adapt to advancing technology. Turner et al. (2011) further state the following:

higher education should provide the students with an environment to become proficient in using whatever tools at their disposal so that they may be confident in finding answers to new rules and laws and to question all rules to ensure that each meets the conceptual framework within which these same rules and laws were created...Our future professionals and leaders will be stratified by their ability to adapt and to incorporate this new mode of operation as second nature. (p. 43)

The accounting profession made the case for a different kind of accounting education to the American Institute of Certified Public Accountants (AICPA), and they responded.

### *How Did the AICPA Respond to Industry's Request for Change in the Accounting Profession?*

In 2011, the American Accounting Association (AAA) and the AICPA created the Pathways Commission on Accounting Higher Education. Their purpose was to "study the future structure of higher education for the accounting professional and develop recommendations for educational pathways to engage and retain the strongest possible community of students, academics, practitioners, and other knowledgeable leaders in the practice and study of accounting" (Behn et al., 2012, p. 595). They noted that accountants now face an increasing volume of complex

information to interpret, process, review, and report upon, and therefore, future accountants need to receive an education that prepares them for their new challenges and responsibilities (Behn et al., 2012). They saw the need for a change, and although they did not have any control over accounting curricula in universities, they did have control over the CPA exam. They made the decision to update the CPA exam in hopes that it would “encourage an updated curriculum” in universities (Turner et al., 2011, p. 42).

The AICPA Board of Examiners updated the content, structure, and design of the exam, and it was unanimously approved in February 2016. The first exam with the new structure was administered in April 2017. The changes to the exam were comprehensive with the emphasis changing from testing students’ abilities to remember and understand with some application to higher level skills. Memorizing with only some application skills is no longer enough to pass the exam. Students now must remember, understand, apply, analyze, and evaluate data to be successful CPA candidates. Interestingly, the CPA exam is not the only exam that moved to a competency-based approach to testing. The Chartered Global Management Accounting (CGMA) exam also changed to this approach. According to Noah (2016) in *Accounting Today*, “There’s little doubt that competency-based approaches are where education is moving” (para. 4).

The CPA exam was updated again in January 2024 in conjunction with the CPA Evolution Initiative. The format and content of the new exam tests further enhanced competencies relevant to today’s accounting professionals, including the impact of technology (Roessner, 2023). The new exam also added new disciplines and higher complexity geared to the changing accounting landscape. The new exam updated the Audit (AUD), Regulation (REG), and Financial (FAR) sections and created choices for candidates for the fourth section. Candidates can choose between Information Systems and Controls (ISC) to address technology and cybersecurity, Tax Compliance and Planning (TCP) to address more complex tax planning issues, and Business Analysis and Reporting (BAR) to address advanced technical accounting topics and data analytics. The overall updated exam tests students’ abilities to not only grasp knowledge, but also to apply it at a deeper level by identifying issues, analyzing data, and evaluating alternatives. Critical thinking, professional judgment/skepticism, and problem-solving are all areas of emphasis (Bakarich et al., 2021). For example, in the REG section, rather than giving exam candidates a list of information needed to prepare a tax return, the task-based simulations provide links to multiple documents for students to reference. Candidates must discern which data is relevant, analyze the data, and determine how to use it to complete the tax questions or tax return. In the AUD section, rather than asking students to define the different types of audit opinions, the task-based simulation will present students with a scenario where they have to determine the appropriate type of audit report to issue given those facts and circumstances.

As evidenced in the CPA exam modifications over the last decade, the AICPA advocates for a skills-based curriculum versus the former knowledge-based curriculum because the body of knowledge and the accounting profession are changing so rapidly. Through collaboration of accounting professionals and educators, the AICPA in its Pre-certification Core Competency Framework identified core competencies that are needed by all students entering the accounting professional which are vital to future success including decision making, strategical/critical thinking, problem solving, and the ability to research, evaluate, analyze, and interpret data (American Institute of Certified Public Accountants [AICPA], 2018). This framework which calls for the teaching of competencies challenges the traditional methods of teaching accounting.

### ***Are Traditional Lecture-based Teaching Methods Adequate for Teaching the New Skills Demanded by the Profession?***

For many years, the accounting profession has called for a change in the way accounting classes are taught. As early as 1990, the Accounting Education Change Commission (AECC) recognized accounting education was not keeping up with the pace of the profession. As such, educators were encouraged to teach students learning strategies and skills needed to lay the groundwork upon which life-long learning could be built (Accounting Education Change Commission [AECC], 1990). According to Schleifer and Dull (2009), the AECC challenged accounting educators to “reform the traditional approaches to teaching accounting” and for educators to “help students become independent learners and to develop their student’s critical thinking skills” (p. 340). The lecture has traditionally been used to teach students content, which has oftentimes resulted in teaching them to memorize rules and

regulations. However, given the ever-expanding body of literature and standards, this is not practical. Today, students must develop real-world skill sets through research and application (Burke & Gandolfi, 2014). Developing these skills is difficult to do through lecture-based pedagogy. Conventional teaching cannot adequately prepare accounting students for the rapidly changing business environment (Albrecht & Sack, 2001). The traditional lecture, which is a one-way dissemination of information, does not prepare students for interactive on-the-job learning (Kumar & Lightner, 2007). In the wake of the Enron scandal and collapse of Arthur Andersen, Marie Force interviewed Albrecht and Sack to discuss their thoughts as to whether this crisis had or would impact accounting education. In the interview with Force (2002), Steve Albrecht made the following statement:

If you think about it, for years the way we have taught accounting is to use a textbook, lecture about the chapters and assign the problems at the end of the chapters. When the students couldn't work the problems, they looked for a similar example in the text and "copied" the answer, albeit with different numbers. What we really have been doing using this teaching method is teaching students how to copy. It's not surprising that when they find themselves performing audits, they do what we have taught them how to do—they copy last year's working papers. I'm sure it is not this bad at many schools, but there is far too much of this kind of teaching going on. (para. 8)

The Pathways Commission on Accounting Higher Education made several recommendations for universities, accounting departments and accounting faculty. They emphasized that "creating effective learning experiences is a vital part of accounting educators' work, critical to achieving the values of a learned profession, and should be part of the peer-review process, faculty-development plans, reward systems, and other recognitions and incentives" (Behn et al., 2012, p. 598). The lack of exposure to realistic scenarios does not prepare students for how to deal with the unpredictability of the accounting world.

Coram (2005) studied the differences in passive and active learning outcomes. Students remember only 10% of what they read and 20% of what they hear, but what they remember increases tremendously when active methods are used (Coram, 2005). They remember 70% of what they discuss and 95% of what they demonstrate or explain to someone else (Coram, 2005). Moreover, STEM courses have witnessed an increase in scores by approximately 6% with active learning methods over those with passive learning methods (Freeman et al., 2014).

### ***Why Have Faculty Resisted Teaching Skills Such as Critical Thinking?***

The accounting professional environment today's graduates will face has changed. The Pathways Commission on Accounting Higher Education has called for accounting education to teach skills in addition to content in innovative ways. Research supports active learning methods to teach both content and skills in application and evaluation. However, many accounting professors have not embraced the need to change their teaching methods to teach skills in addition to content. Data confirms instructors are clinging to passive teaching instead of embracing active learning. According to Jaschik (2018), 55% of faculty still use the conventional method in the college classroom, 27% use conventional teaching with some integrations of clickers, and only 18% are designed for student-centered learning. Freeman (2018) also found that the lecture was the most used method of content delivery among her survey respondents. If the research concludes that there are better methods of teaching accounting students to learn both content and to be able to apply, analyze and evaluate it, then why might it be that more accounting professors are not choosing to do so?

Behn et al. (2012) stated many impediments that cause accounting faculty and universities to not change their teaching methods and curricula including the following:

- Lack of faculty experience, knowledge, and development opportunities.
- Tenure processes and reviews primarily on research productivity.
- Lack of reward structures for promoting student-centeredness.
- Inability of deans and department chairs to implement change.
- Lack of understanding the importance of sound pedagogy and professional relevance.

In the interview with Force (2002), Albrecht stated that although some professors have embraced curricula change, others seem to be “more concerned about their research agendas-and probably rightly so since research is rewarded more in academia than is good teaching and curricular efforts” (para. 6). With research more highly regarded than teaching methods, many professors may not prioritize taking the time to learn new teaching methods that will engage their students in higher level thinking skills.

Still other professors may not seek to change their pedagogy due to a fear of failure. They may lack resources and support for training to understand how to teach their students skills as well as content knowledge. Most college educators teach the way they were taught and are not instinctively experts in the new and innovative pedagogies (Heinerichs et al., 2016). The AICPA Practice Analysis in 2016 elaborated that the profession was concerned about educators being prepared to teach the higher order skills that the exam now required (as cited in Freeman, 2018, p. 2).

Finally, some accounting faculty are simply convinced that the lecture is the best method to cover a plethora of mounting accounting content. In response to a research survey conducted by Freeman (2018), respondents who stated they used the lecture as their number one or number two teaching method were further questioned as to why they preferred this method. Coverage of a large amount of material was a common theme as seen in these responses: “most efficient,” “knowledge transfer,” “best method for basic content delivery,” “to assure the topic is covered,” “lecture delivers the most amount of material to be covered,” and “efficient and useful” (Freeman, 2018, p. 9). As illustrated in these respondents’ statements, many professors believe they must cover the large amount of content their students will see on the CPA exam. However, covering content through lecture is not the equivalent of learning the content or the skills now required by the profession. While the lecture is perhaps the most efficient way to teach, it is not necessarily the most effective (Grantz & Gruber, 2014).

### ***Can Accounting Faculty Begin to Embrace Active Learning to Increase Critical Thinking Skills?***

As previously stated, many accounting professors see the lecture as the most efficient way to cover a large amount of content; however, the difficulty with the traditional lecture is that it often encourages passive learning, which means that students hear the lecture being presented or they receive the information. The fact that they hear the lecture (assuming they are listening) does not mean they comprehend or can apply what they have heard. Students need to sift through content and understand how to use it. In contrast to passive learning, active learning means students create an experience with the content being taught. They do something or observe something with it, and then they reflect upon it (Fink, 2003, p. 104).

A number of reasons exist as to why accounting educators have not embraced changing methods of teaching; however, in light of the challenges ahead for present accounting students and their future careers, more accounting professors should try active learning methods in their classrooms to encourage critical thinking. The remainder of this article is based on an explanation of Brookfield’s research on critical thinking and how accounting professors can use those findings to easily implement active learning strategies that will make an impact on students’ ability to develop critical thinking skills.

### **Elements of Brookfield’s Critical Thinking Teaching Techniques**

Stephen Brookfield (2012) conducted a study to focus on what types of activities and approaches students believe help them learn to think more critically. His study analyzed data from over 1,500 Critical Incident Questionnaires (CIQ) gathered from students over 30 years (Brookfield, 2012). The CIQ includes five questions that students answered to review their learning experience on a weekly basis during a class. According to Brookfield (2012), five themes emerged regarding how students learn critical thinking. These five themes included the following: a social learning process, teacher modeled process, concrete experience, disorienting dilemma, and incremental learning in non-threatening environments (Brookfield, 2012).

Accounting professors can use Brookfield's themes for teaching critical thinking when planning and teaching their courses. In doing so, they can learn to incorporate teaching critical thinking in their classrooms. The following paragraphs will describe each of Brookfield's discovered themes in more detail. The article will then explain some teaching strategies that embody Brookfield's themes that accounting professors can implement to foster critical thinking in their accounting classrooms.

### ***Social Process***

The first theme Brookfield identified was the importance of the social learning process. Research has recognized cognitive functionality develops quicker when learners can practice with assistance (Borthick et al., 2003). The concept of the zone of proximal development (ZPD), introduced by psychologist Lev Vygotsky (1978), is the difference between what students can achieve without assistance from others and what they can do with guidance. In other words, when students must complete a task beyond their initial independent capability, they may first need guidance from someone they view as more capable. Eventually the student will be able to complete the task on his or her own as the level of assistance is decreased. As such, learning in a group setting could extend a student's zone of proximal development (Yin & Fitzgerald, 2017). According to Vygotsky (1978), working with peers is critical to a student's ability to acquire new knowledge and develop critical thinking skills.

Approximately 80% of Brookfield's (2012) study participants identified working in small groups with peer interaction as the moments when learning "really hit home" (p. 56). The "social process" where peers could ask each other questions caused them to discover their own assumptions that they had not previously questioned. Their peers' shared thoughts and ideas also caused them to consider new perspectives that they could not have understood alone. Although a professor's perspective is often valued by a student, peer perspectives can be more attractive due to a lessened power-dynamic (Brookfield, 2012). When a professor questions a student's perspective on a problem, it can be more threatening; however, when a student does so, the student may feel less threatened and be better able to articulate their responses. The social process helped them to make deeper connections between material and comprehension. However, it must be understood that the social process is not meant to allow chatty time in classes, but rather to allow time in class to explore a topic/problem by listening attentively to their peers, asking probing questions about assumptions, and offering new perspectives (Brookfield, 2012).

### ***Teachers Model the Process***

Brookfield found that modeling the process is important in helping students to develop critical thinking skills. Faculty need to walk their students through the process and demonstrate a new approach to learning. Many students do not know how to sort through the facts, determine what is relevant, identify the issues, and develop a strategy for solving the problem. Brookfield (2012) notes that students value understanding why teachers do what they do and their thought processes. They want their professors to think out loud and share their assumptions with the students and how those assumptions can be questioned and what new perspectives could be considered. Professors are not just teaching them facts or calculation, they are teaching them how to think through the facts and apply previously acquired knowledge to a new situation. The course material presented for learning becomes less random and more of a thoughtful process, and students learn to learn. Also, professors must demonstrate to students how to pose questions to one another without judgment attached (Brookfield, 2012). He gives the following examples: "Can you tell me more about ...?" "Why do you think that's the case?" "What's the most convincing piece of evidence for that view?" (Brookfield, 2012, p. 65). Showing the student how to reflect each other's thoughts for clarification is helpful. Students do not instinctively know how to accomplish this without modeling.

### ***Concrete Examples***

Brookfield's third theme to emerge in teaching critical thinking was the use of concrete examples. Students develop stronger critical thinking skills from problems structured like case studies or simulations where the basic facts of a situation are not isolated from the larger problem at hand (Brookfield, 2012). Textbook exercises tend to be fairly straight-forward, lacking a sense of realism or unpredictability. With concrete examples, there is generally not a single right or wrong answer which requires students to face uncertainties and allows for discussions of various

viewpoints. These types of problems focus on decision making and logical reasoning. When students apply their thinking to a concrete problem, they not only need to determine the answer but must also explain their assumptions and perspective using higher thinking skills.

### ***Disorienting Dilemma***

Brookfield also found critical thinking skills are developed in students who are faced with uncomfortable dilemmas or emotion-filled events that move them out of their comfort zones. He found that students repetitively stated that facing something unnerving forced them to develop new ways of thinking about it. “Unsettling classroom moments” are the ones they take with them (Brookfield, 2012, p. 71). Brookfield emphasized that professors should look for the unexpected result as the disorienting dilemma like in a case study where the outcome is completely unknown or unexpected.

### ***Incremental Learning in Non-threatening Environments***

Brookfield identified incremental learning in a non-threatening environment as his fifth theme in teaching critical thinking. He found that students prefer to have chances to practice learning in non-threatening ways before performing the learning with higher stakes. Although it is still important to let students struggle with the unknowns of a problem before providing them with assistance (as noted in previous section), professors should be there to support their students through the learning process as a ‘guide on the side.’

## **Learning Strategies to Incorporate Critical Thinking in the Accounting Classroom**

The AICPA has strongly suggested that active learning pedagogy has proven to be more effective in teaching the higher order thinking skills that the revised CPA exam aims to test. Professors can use many active learning methods to achieve the five elements that Brookfield suggested would best teach critical thinking. Think/Pair/Share embedded in mini-lectures, Case studies, and Problem Based Learning are three active learning strategies that accounting professors can quickly and easily implement in their accounting courses to encourage critical thinking.

### ***Learning Strategy 1: Think/Pair/Share***

#### **Description of Strategy**

Think, pair, share is a commonly used active learning technique that accounting professors can use to ease themselves and their students into open discussions. This strategy has four main parts: a question (problem), time for individual thought and writing/solving, time for discussion with one other student to gain further peer insight, and then time for sharing with the larger group.

Professors first ask a probing question to the class. This question could be theoretical, or it could be about a current event. It could also be about a problem to be solved. The professor then directs the class to individually formulate their answers on paper and should allow sufficient time for the students to do so. After students have reached a conclusion, the professor then asks them to turn to the person beside them and discuss answers. The professor allows time for small group discussion about the question or problem posed. The students can listen to one another, discuss potential errors in thinking, and defend their answers to the question or problem at hand. When students have to explain their thought process on a question or how they arrived at an answer to a problem, they can understand the “why” at a much deeper level. At this point, the professor can draw the small groups back to the entire class and model the process of thinking through the problem on the board all the while pausing to ask more probing questions about the problem. These questions should not only be about how to solve the problem, but also sometimes as to why the accounting standard chose this method and what the standard is trying to accomplish. Constantly asking students “why?” throughout the demonstration and giving them the time to think about it increases their critical thinking. Helping students learn why they are doing a problem in a certain way allows them to learn how to solve other problems that are not identically structured to the ones demonstrated.

Think/Pair/Share can also be used to hold students accountable for the content they were supposed to read or view outside of class. After administering a brief reading quiz at the beginning of class, students can then work in the think/pair/share method to answer a series of questions about the reading material. Some questions can be definitions, but others should require thought and debate. As previously noted, students are usually less intimidated by their peers and may be more willing to discuss possible answers than in an entire-class discussion. Knowing they will have to take a quiz and also discuss the day's material with their peers holds students somewhat accountable to their peers, which is a further motivator to be prepared for class and read the content. After their group discussions are complete, students then share the conclusions of each group with the class.

#### **How the Strategy Relates to Brookfield's Critical Thinking Elements**

This method implements several of Brookfield's elements of creating opportunities for critical thinking. Think/Pair/Share is a social process where students engage with each other about their initial individual thoughts, listen to others' assumptions, ask probing questions, and listen to new perspectives. The method can be modeled by the professor prior to engaging in the exercise, which will further help students understand how to ask questions and listen to others. The question and/or problem for the activity can be based on a concrete example such as a specific problem or current event. The disorienting dilemma may not always be possible in this method depending on the content at hand. Incremental learning is definitely possible with this method by planning questions/problems so that content is presented in the order and building complexity that the professor intends. (Vella, 2000). During the open group dialogue, the professor can interject with material students may have missed in the process.

#### **Empirical Research on Use of Strategy**

In a 2020 study by Comfort and Nwaukwa, there were significant differences in the academic achievement and retention of students taught financial accounting using specifically the think-pair-share strategy in comparison to those taught using a traditional method. Hetika et al. (2017) also found the application of the think, pair, share method improved both learning motivation and achievement in an introduction to accounting course. This activity encourages socialization in the classroom. According to Vella (2000), in-class exercises designed to engage learners in an accountable group of students triggers immediate learning, rather than a passive experience where the student may or may not look at the material again later. When students are given the opportunity to share knowledge, it increases motivation, develops critical thinking skills, and improves communication skills (Pollock et al., 2011; Marchetti, 2018). Accounting educators should give students time to think for themselves before offering a solution as this is how critical thinking is developed (Wass et al., 2011). Further, the student receives in-class assistance from peers and the instructor when needed. Students tend to flourish in learning environments with high demands and challenging tasks when appropriate support is offered (O'Flaherty & Phillips, 2015).

#### **Applicable Courses**

Think, pair, share can be used in any accounting classroom at both the undergraduate and graduate levels. It can be used for theoretical topics, problem-based topics, or research-driven topics. For example, in a principles of accounting or an advanced accounting course, the instructor can give students a problem to work on and sufficient time to work the problem on their own before pairing with another student to discuss their calculation and final answer. During this time, any discrepancies in their answers can be discussed and ideally resolved, bringing in the instructor if necessary. This allows students to identify misunderstandings and correct mistakes in a low-stakes environment. Once they have been given time to collaborate, they will then share their answer with the class where the professor can weigh in where needed.

For further example, think about the following scenario for consolidating journal entries in an advanced accounting course. Instead of simply giving a mnemonic to help students memorize types of consolidated entries, the professor can also ask students to think about the parent and subsidiary statements and what accounts should look like if they were combined. Can a parent have an investment in itself? Am I double-counting if I combine all assets, liabilities and the equity accounts? Students can individually form their answers, then discuss them in groups, and then the class can discuss them together with the professor who can now model not just what the consolidation entries are but also why.

### **Benefits of Strategy**

One benefit of Think/Pair/Share is that it encourages professors to take chances in asking questions. According to Stephen Brookfield (2012) “asking questions is at the heart of critical thinking” (p. 195). Brookfield is not referring to rhetorical questions, which many lecturers use. He is referring to questions that require students to think and formulate an answer based on their experiences with the material at hand and sometimes combined with life experiences. However, many faculty members are uncomfortable with asking open-ended questions and waiting in silence for an answer. According to Brookfield (2012), asking questions “can be an unsettling, even rebellious act. It disturbs both those being asked . . . and those in power” (p. 196). By posing a question and asking students to first think in isolation for a moment, formulate their response, and write it down, the silence problem is solved.

Another benefit is that the method engages students socially. Many students are uneasy about sharing their answers aloud with the entire class but are willing to discuss one-on-one with their peer. Within the smaller, more intimate group setting, the students have the opportunity to correct mistakes in their own individual work and are likely to feel more confident to then share their answers with the larger group. They also have a more meaningful experience associated with their individual discussions relating to the covered material. Students must be able to do much more than regurgitate information in this activity. They must understand the “why” at a deeper level in order to explain the concept to their peers. According to Vella (2000), in-class exercises designed to engage learners in an accountable group of students triggers immediate learning, rather than a passive experience where the student may or may not look at the material again later.

A third benefit is that students may pleasantly surprise professors with their ability to “cover” the majority of the main ideas in the material in a much deeper way by assimilating the knowledge on their own. Further, they typically enjoy this process rather than the professor lecturing with PowerPoint presentation, which might possibly lead to more motivation to learn and to better student evaluations.

### ***Learning Strategy 2: Case Studies***

#### **Description of Strategy**

Case studies are generally the easiest approach to incorporating the real world into the learning process. Often students are eager to attempt case studies because they incorporate real-world scenarios. Unlike textbook exercises, case studies are not always straight forward and require a higher level of thinking (Dennis, 2020). Students must take the knowledge they have gained and apply it to a variety of scenarios. They must think critically by analyzing the problem, deciding what accounting treatment makes sense in that particular situation, and use judgment in formulating a solution. This process is engaging and active learning at work.

The first step to using a case study is to locate one that incorporates the content the professor wants their students to learn and the learning objectives you want the students to achieve (Dennis, 2020). Professors can create their own cases or use ones that are already available for use. Once the case is chosen, the professor should consider modeling how to sift through the information in the beginning, how to think about the questions that are posed, how to pose further questions for inquiry, and how to find and formulate answers to those questions. Professors can easily locate problems with solutions and guidance to help them implement the problem in class with their students. Several resources for these are located at the end of this article.

If the case study includes some research-based activities, professors can incorporate the disorienting dilemma for further critical thinking. Students need to know how to research and apply the accounting standards. When the appropriate accounting treatment is unclear, accountants research the authoritative literature to develop a recommended course of action. This process is vital when dealing with new or unusual transactions. However, accounting literature can be overwhelming and confusing for students. Students often do not know where to start and give up easily when trying on their own but can have more success when guided by the instructor. Hence, it is important to teach research skills by incorporating opportunities to leave the textbook where the information is directly given and have students sift through the literature.

Current events might also serve as the basis for a case study. For example, the professor might use the collapse of Silicon Valley Bank to demonstrate the importance of an independent auditor exercising due diligence in an audit. Rather than lecturing on the steps required in the completion phase of an audit, the class can specifically discuss what KPMG should have done differently in terms of identifying subsequent events and evaluating the going concern assumption for the Silicon Valley Bank audit. Learners need context to fully comprehend new information.

### **How the Strategy Relates to Brookfield's Critical Thinking Elements**

A case study can be used to teach critical thinking using all five of Brookfield's themes. If professors assign teams to do a case study, they can cover the social aspect where students exchange ideas and perspectives. Professors can model how to work through a case study prior to assigning one or as the class works through the first one together. The case study itself provides a concrete example from which to build thoughts and ideas. Cases with disorienting dilemmas are relatively easy to locate in the resources the authors will supply at the end of this article. Incorporating ethical debates and/or ethics-based cases into classes is an excellent way to create the disorienting dilemma while teaching the accounting principles at hand. Furthermore, the case can be planned to build on the complexity of the assignments within it with assistance from peers and the professor in a low-threat environment. Therefore, all five of Brookfield's elements can be accomplished.

### **Empirical Research on Use of Strategy**

Many prior studies have evidenced the benefits of incorporating cases into the classroom. Abbott and Palatnik (2018) conducted a study regarding students' perceptions of their first financial accounting course. Several participants suggested "incorporating more real-world applications and more effectively making the connection between the business world and course content" to increase critical thinking (Abbott & Palatnik, 2018, p. 84). Pointer and Ljungdahl (1973) discussed the advantages of using cases when teaching accounting courses, noting the emphasis cases-based learning has on the decision-making process. Like Abbot and Palatnik (2018), Pointer and Ljungdahl (1973) also observed students favored this approach. Cases can also help students become lifelong learners which will benefit them as they face uncertainties in the profession (Celuch & Slama, 1999).

In a study by Bocker (1987), case-based learning was found to be more suitable than the traditional lecture-style when teaching business courses. Not only can they stimulate a desire for learning (Bocker, 1987), but cases can also help students develop soft skills, such as critical thinking, problem solving, research abilities, and communication (Samkin & Keevy, 2019). Rippen et al. (2002) also studied the use of cases in undergraduate business courses and noted it to be beneficial in the development of critical understanding of the accounting discipline. As previously discussed, cases focused on ethics can be especially useful in the development of critical thinking skills as it forces students to face uncomfortable dilemmas and grapple with uncertainties. According to Gerstein et al. (2016), using these types of cases in the accounting classroom will foster flexible thinking and problem-solving skills.

### **Applicable Courses**

Due to their ambiguity, case-based learning can be challenging for novice learning. As such, cases are more appropriate for advanced students who have a foundational understanding of accounting principles and the accounting literature. While cases can be used in any type of course, they are most suitable for auditing or intermediate and advanced financial accounting courses, all of which are typically taken during a student's junior or senior year. Cases also work best in classrooms where students can work together in groups of 2-3 students. Professors should encourage students to discuss differing viewpoints on issues, research to find the applicable accounting or auditing standards, and debate the alternative solutions. Cases can vary in terms of length and time requirement. If time restrictions are a concern, professors should consider the use of mini cases which are significantly shorter and can be completed in one class period.

### **Benefits of Strategy**

One benefit of using case studies is that they are so readily available for professors to find and use. Many textbooks have enhanced their accompanying problem sets with case studies. Another benefit is that when students can see the problem has real-world significance, it increases their motivation to understand the concepts. When students can link how to solve a problem with the real world's need to solve that type of problem, the motivation to apply the skills learned increases.

A third benefit is that case studies help students understand that there is not necessarily one correct answer. Schleifer and Dull (2009) suggest “students should understand that accounting is a discipline in which problems may not have a clear-cut solution. Real-life situations change from client to client and year to year; accounting standards and expectations change” (p. 359). When students must research their questions, they develop critical thinking skills because they are forced to deal with ambiguity. Dennis (2020) noted that “struggling to understand all the elements involved and what they mean is part of the process” (para. 5). Assessing various alternatives and making decisions is a key part of the accounting profession. Students need to be comfortable dealing with situations where there is no one right answer, or aspects of the problem are unknown. In the workplace, students will encounter situations where they do not know the answer and they will be expected to figure it out on their own (Vien, 2021).

### ***Learning Strategy 3: Problem-Based Learning***

#### **Description of Strategy**

Problem-Based learning is also a way to help students better understand textbook concepts. At the essence, problem-based learning involves students actively engaging in hands-on activities to find the solution to a problem. The terms “case-based learning” and “problem-based learning” are often used interchangeably, but there are differences. Cases are generally retrospective, looking at a set of facts and determining “what went wrong.” In comparison, problem-based learning is forward looking. Students dissect information to identify issues, with the goal of formulating possible solutions or outcomes.

Problem-based learning does not necessarily need to be complex; however, learning can be enhanced with the use of technology. Simulations can be a simple example of problem-based learning and only require the creation of a fictitious situation that depicts some aspect of reality. Examples include working through the accounting cycle for an intermediate financial accounting course using general ledger software, reviewing audit evidence and performing mock interviews with audit clients, or researching tax laws related to a specific situation and proposing advice to a tax client. Simulations can also be on a much larger scale, such as using an integrated computer-based business simulation in an accounting capstone course.

#### **How the Strategy Relates to Brookfield’s Critical Thinking Elements**

Like the previous two strategies, problem-based learning is grounded in the concepts identified in Brookfield’s research. While students can work on problems independently, learning is elevated when placed into groups thus incorporating the social process. Not only do they have to formulate their own responses, but they must present their findings and consider alternative viewpoints of their peers. Students will formulate a deeper understanding of the material as they defend their positions.

Problem-based learning can often be challenging for students. Thus, it is beneficial for the professor to model the process of working through a simulation with the class before assigning one for the students to work without guidance. Simulations are based on realistic scenarios faced by accounting professionals, thus providing students with a concrete example. If the problem or series of problems are presented in incremental complexity with guidance in the classroom, the professor can create a non-threatening environment where critical thinking skills can thrive.

#### **Empirical Research on Use of Strategy**

Research supports the implementation of problem-based learning to boost critical thinking skills. A study by Mardi (2021) found the application of problem-based learning in accounting education to be quite effective in building critical thinking skills. Mardi (2021, pg. 212) said “Problem based learning is the interaction between stimulus and response, a relationship between two directions of learning and the environment. The environment provides input in the form of problems while the brain interprets it and enlarges the problem for further investigation, assessment, and analysis until a solution is reached. In this process, students develop critical thinking skills needed for solving the problem” (p. 212). Hansen (2006) studied the use of problem-based learning in the accounting classroom and found it to be an effective way to motivate students to think critically and solve complex real-world problems. Hansen (2006) specifically noted that realistic problems act as a catalyst to spark the acquisition of new knowledge through

research, as all the information needed is not given in the problem and students often do not have sufficient knowledge to solve the problem immediately. Kumar and Natarajan (2007) also noted the benefits of using this strategy including an increase in higher order thinking skills and an authentic method of building knowledge.

### **Applicable Courses**

Accounting professors can begin utilizing problem-based learning as early as the introductory accounting class by having students create a basic set of financial statements for their dream business. The results may be messy, but the process of having to build their own chart of accounts and think about the business process will be much more meaningful than working textbook problem after problem. Intermediate classes can build on the process by allowing students the opportunity to take the books entirely through the accounting cycle. Finally, students in advanced classes can be asked to analyze a set of financial data of a real entity and prepare a financial plan to present to the class. With problem-based learning, the format and timing of the exercise can vary greatly. It can be completed in one class period, in isolated phases, or span over the entire semester.

### **Benefits of Strategy**

One benefit of problem-based learning is that again there are plentiful resources. A basic textbook question can easily be converted into a problem-based learning activity (see resources section below). Another benefit is that they also help students deal with ambiguity. Springer and Borthick (2004) state that “if [students] are to perform at the higher levels of thinking the profession has identified, students need to learn to solve the new, ill-structured problems that will arise in practice” (Section Introduction, para. 2). Gurses et al. (2007) notes problem-based learning activities foster critical thinkers due to the self-direction of students, as well as the need to integrate a variety of knowledge from multiple sources, including both the accounting literature and knowledge acquired in previous courses.

Finally, problem-based learning also teaches skills. According to Fink (2003), problem-based learning is excellent to give to student teams. They must read the problem, and then they must decide what the issues are and what information and ideas they need to solve it. They find the information they need, evaluate it to see if it seems to answer the question, and then they present it (Fink, 2003). Rather than content just being “covered,” it is put into practice while critical thinking and communication skills are developed.

### **Barriers to Implementation**

As with any new approach to teaching, there are barriers to implementation of these strategies. However, the authors believe the benefits outweigh the challenges and have offered some quick solutions to combat some of the most common barriers including class-time limitation, student resistance, and the subjective nature of the activities.

#### ***Time Limitation***

One challenge often encountered is time restrictions. The reality is class time is limited and accounting educators are overwhelmed by the need to make sure students are exposed to all the content they will eventually be tested on. This fact is a common reason lectures are used to cover the material that will be tested. However, the traditional lecture in general is not a “social process,” but rather a one-directional dissemination of facts. To truly incorporate any of these methods effectively, the accounting professor will need to embrace the mentality that meaningful learning requires both understanding the content and applying it in a social context. The first step in incorporating a more active and social process of learning in the accounting classroom is to minimize the use of lecture (not necessarily omit it completely) and rethink the use of in-class time.

One simple solution to address this issue is to consider moving the dissemination of some of the basic knowledge outside the classroom. This does not mean lectures have to be removed all together, but professors who intend to try to teach some critical thinking skills to their students will need to hold students accountable for at least some of the content outside of class through assigned readings, assigned review of PowerPoint slides, or watching pre-recorded lecture videos. Students can perform lower levels of cognitive work, namely acquiring and comprehending facts and

knowledge, on their own before class, which can free up class time for active learning strategies with social interaction and two-way discussion of more complex topics.

According to Larsen (2015), the movement of the lecture outside the classroom allows for the creation of a unique learning space where students can stretch their thinking while working collaboratively with peers and the instructor. Many videos on content are now already available by textbook authors and other social media if the professor does not want to create the content themselves. It is difficult for professors to let go of the control of the lecture and content coverage, but by letting go of at least some of it, they leave room in the classroom to help students apply the content and learn it more deeply.

### ***Student Resistance***

Student resistance can be encountered regarding both the pre-class work and the engagement during class. For students to fully engage in the learning strategies during class time, they must come to class prepared. That means they must have reviewed the assigned content and be familiar with the material in order to apply the knowledge to the in-class activity. To overcome this obstacle, it is strongly recommended to hold the students accountable for the pre-class work. As discussed with the first learning strategy, this can be as easy as a short reading quiz at the beginning of class or having students debate a series of questions about the material.

### ***Subjective Nature of Activities Could Impede Learning***

The intent of all three suggested learning strategies is to build critical thinking skills. As such, all of the previously described activities are subjective in nature. Students will be dealing with various unknowns and uncertainties. Many accounting students like knowing there is a “right answer” and prefer not to be pushed outside their comfort zone. Students can quickly become frustrated when utilizing the learning strategies and this may impede their learning.

As Brookfield discussed, it is important to create a non-threatening learning environment. Jaffe et al. (2019) also claimed one of the most important aspects of fostering critical thinking is the creation of a safe learning space in which students feel they have the freedom to explore without fear of being wrong. To help create this type of environment, the focus should be on analysis and decision making, not purely on the end result. Additionally, the stakes should be low. Although some points may need to be attached to the exercise, simply as an incentive to participate, they should be minimal, or grading should be flexible. Students should be rewarded for their logical reasoning instead of a right vs. wrong answer.

Because socialization is a key component of Brookfield’s research, students are going to be working together, wrestling with questions, discussing various perspectives, and possibly even exposing their own learning gaps (Jaffe et al., 2019). It is important they feel respected during these discussions. Professors should set ground rules and explain the importance of civility in the classroom. They should also adjust the classroom to their learners. Some students are more comfortable with these learning strategies than others. As professors get to know their students, they will need to find a balance between “spoon feeding” answers and abandoning their students to learn on their own. Ideally, professors should gently nudge their students for ideas with probing questions to achieve the desired level of difficulty while students still feel supported (Jaffe et al., 2019).

### **Resources**

There is a wide assortment of resources available to college professors to assist with the implementation of these strategies. The authors have included a few examples of resources to help professors implement the learning strategies discussed in this paper.

### ***Current Events Topics for Learning Strategy 1***

- Wall Street Journal's Weekly Review allows professors to register to receive weekly newsletters from the Wall Street Journal. Each email is customized to highlight three of the week's top articles for the selected discipline. In addition to the article, you will receive 3-5 questions to help integrate into lesson plans. Visit the following website for more information: <https://education.wsj.com/instructors/>. The website includes additional tools for instructors, such as online quizzes related to WSJ articles and critical thinking resources.

### ***Case Studies for Learning Strategy 2***

- Deloitte Foundation Trueblood Case Studies include a wide variety of case studies focused on complex accounting and auditing issues. Cases are available in PDF format with password protected solutions for faculty. Cases cover over thirty different topics and new cases are added annually. Visit the following website for more information: <https://www2.deloitte.com/us/en/pages/noindex/shruti-test/trueblood-case-studies-deloitte-foundation-new.html>
- EY Academic Resource Center provides professors with free resources to prepare students for the accounting profession, including videos, lecture notes, case studies, data sets, and analytical workbooks. Materials touch on a large array of topics including tax, audit, financial accounting, ethics, cybersecurity, and much more. Visit the following website for more information: [https://www.ey.com/en\\_us/about-us/ey-foundation-and-university-relations/academic-resource-center](https://www.ey.com/en_us/about-us/ey-foundation-and-university-relations/academic-resource-center)
- KPMG University Connection provides professors with materials that can be incorporated into accounting classrooms, including slides, video series, case studies, class activities and other virtual learning experiences for students. Topics include basic accounting skills (accounting, tax, and audit), as well as ethics, critical thinking, data analytics, other skills development (Excel, flow charting, etc.). Visit the following website for more information: <https://www.kpmguniversityconnection.com/for-faculty>
- AICPA Academic Resource Hub is designed for accounting educators to aid in academic instruction. This resource offers an assortment of case studies designed for beginners through advanced students. Topics include financial accounting, managerial accounting, audit, fraud/forensic accounting, tax, ESG, and others. Website allows professors to filter by content type, topic, technical skill, and skill level. Visit the following website for more information: <https://www.thiswaytocpa.com/segmented-landing/academic-resource-hub/>
- Issues in Accounting Education is a quarterly journal published by the American Accounting Association. This journal regularly publishes case studies with solutions designed to be incorporated into an accounting classroom. Visit the following website for more information: <https://publications.aaahq.org/iae>

### ***Problem-Based Learning***

- AICPA Academic Resource Hub is designed for accounting educators to aid academic instruction. This resource offers simulations designed for beginners through advanced students. Topics include attestation, financial accounting, and managerial accounting. This website allows professors to filter by content type, topic, technical skill, and skill level. Visit the following website for more information: <https://www.thiswaytocpa.com/segmented-landing/academic-resource-hub/>
- Problem-Based Learning Development can be accomplished with the help of the following article written by Hansen (2006). In this article, Hansen explains how a basic textbook question can be adapted into a problem-based learning activity. Hansen, J. (2006). Using Problem-Based Learning in Accounting. *Journal of Education for Business*, 81(4), 221-224.
- Problem-Based Learning Example can be found in the following article from the Journal of Accountancy newsletter. In this article, Pozo (2019) demonstrates the use of problem-based learning in an audit course. Visit the following website for more information: <https://www.journalofaccountancy.com/newsletters/extra-credit/accounting-class-problem-based-learning-project.html>

### *Critical Thinking*

- [AICPA Critical Thinking Resources](https://www.thiswaytocpa.com/segmented-landing/critical-thinking/) provides professors with a teaching guide to critical thinking, as well as links to Journal of Accountancy articles related to critical thinking in the accounting classroom. Visit the following website for more information: <https://www.thiswaytocpa.com/segmented-landing/critical-thinking/>

### **Call to Action**

According to Schleifer and Dull (2009), “Accounting professionals must be lifelong learners and critical thinkers” (p. 339). The accounting profession “has challenged” professors to ensure that graduates understand “how to learn and maintain the skills, knowledge, and professional orientation needed for success in the accounting profession” (Schleifer & Dull, 2009, p. 339). If the accounting profession wants accounting graduates to be life-long learners, then modeling a life-long learning mentality is a must for professors. Accounting faculty should keep up with new standards and be the life-long learners that they expect their students to be. They need to keep up to date on technical standards, current educational research on the best methods to teach accounting content and also learn how to teach cognitive skills.

It takes time to think about and produce assignments that are not simply reiterations of text. This investment of time is a cost to professors who see their time more rewarded in research and professional service. However, Vella (2000) poses some very thought-provoking questions that readers should consider. Vella (2000) asks, “What does it cost to teach without ensuring that learning takes place? What is the price of adult learners’ failing to grasp essential skills, knowledge, and attitudes? Also, what does it cost to teach without inviting critical thinking and creativity?” (p. 12). Most professors chose this profession because of their desire to help others learn their craft. They should ponder Vella’s questions above and ask themselves if the methods they are using are truly helping students learn.

### **Conclusion**

The accounting profession is changing quickly. Students seeking this career will need to be adaptive to change and need higher level skills such as the ability to think critically, analyze and evaluate information (AICPA, 2018). They will need these abilities to first pass the exam to enter the profession and then to pursue a successful career in the profession.

Some college and university professors have been slow to change their teaching methods for a variety of valid reasons including what is valued in the tenure and promotion process as well as engrained beliefs about the need to cover material in class. However, accounting faculty should consider that content covered in lecture is not the equivalent of content learned, applied, analyzed, and evaluated. Stephen Brookfield has presented thorough research concerning teaching critical thinking skills to students. This paper allows accounting professors to use his research to improve their abilities to teach critical thinking skills to accounting students. By implementing small and simple changes in their classrooms, accounting faculty can begin to incrementally transform their accounting classrooms into competency building opportunities for their students and better prepare them for success in the current accounting profession environment.

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