

# **Critical thinking skills and teaching accounting: a comparative study**

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## **ABSTRACT**

Professors and students are being overwhelmed by the volume of materials in accounting textbooks. New pronouncements are constantly being issued by professional organizations. How should educators convey all of this new information to students? To prepare students for the profession, it is imperative that students are able to learn new concepts using a consistent framework. Thus, all concepts should be presented to students via the ABCs of accounting teaching model. “A” is for Allocation, “B” is for Book Valuation, and “C” is for Classification. This allows students to comprehend new material without getting bogged down into the weeds of details rules and procedures. Thus students are able to learn more material and professors are able to focus on teaching the critical thinking skills that the marketplace demands. The purpose of this paper is to convey the authors use of the ABCs of teaching accounting model. This paper gives the result of one Historically Black Colleges and University (HBCU) teaching the ABCs of accounting model teaching strategy relative to the HBCU performance on the Certified Public Accountant (CPA) exams. The results were mixed and further research is needed.

Keywords: critical thinking skills, ABCs of accounting, HBCU, CPA exam

## **INTRODUCTION**

Since 2010, the authors have been on the faculty of a HBCU located in Georgia. The authors are the only full-time faculty, thus are responsible for teaching all accounting courses. Failure rates have average thirty-five (35%) percent. Failure is defined as students receiving a grade of “D” or “F”. This failure rate was unacceptable, thus a search begin to explore ways of reducing this rate without compromising the academic rigor required to become an accountant.

This study explores a teaching model designed to improve student critical thinking skills. What adjustments to a classroom lesson plan and teaching strategy are useful to improve interpersonal communication, creativity, reasoning and analytical abilities? Does improvements in interpersonal communication, creativity, reasoning and analytical abilities require abandoning the traditional teaching model? Critical thinking includes analyzing, conceptualizing, reasoning and evaluating. Research finds that these skills can be developed in learners if teaching strategies evolve beyond memorization. Accounting graduates are expected to possess a healthy dose of critical thinking skills. This study will explore a teaching model reflective of cognitive thinking. Cognitive teaching increases the need to compare, contrast, group, and memorize relevant accounting concepts. The literature argues that students have considerable difficulty in solving problems that are slightly different than those presented in the classroom, even though the same concepts is being covered . The Pathways Commission has called for improvements in curriculum and accounting teaching techniques (Bloom, 2013). The quality of future accountants will be shaped by a need for improvement in critical thinking skills. The purpose of this paper is to convey the authors result of using the ABCs of accounting model.

## **SINGNIFICANE OF THE PROBLEM**

The accounting profession requires more creativity and innovative thinking in order to be competitive. Much of the literature argues that teaching models that require students to memorize accounting rules and procedures fail to cultivate critical thinking in problem solving. The Bedford Committee (1986) asserts that the traditional accounting lectures fail to stimulate creativity and innovative thinking. Thus student are not educational ready to enter the profession. The Pathway’s Commission finds that accounting programs are overly invested in outmoded models. Bloom (2013) finds that students increasingly exhibit difficulty solving complex problems.

The goal of teaching should always embrace a pedagogy designed to discover a higher order of thinking. Higher order critical thinking can be achieved if the teaching approach gets it right. Such is the pursuit of this study. The five step process for developing higher level critical thinking skills (Limbach, 2008) are:

- Step 1 - Learning Objective
- Step 2 - Teach through Questioning
- Step 3 - Practice before Assessment
- Step 4 - Review, Refine and Improve
- Step 5 - Provide Feedback and Assessment of Learning.

## LITERATURE REVIEW

Singer and Wiesner (2013) suggest that high schools teach basic accounting rules and procedures, thus allowing colleges to focus on critical thinking skills. In a study by Almunais (2014), the author found factors such as homework, peer interaction, and emphasis on science versus humanities had a strong impact on higher level thinking in accounting. A study by Kitaoka (2011), an economics professor, suggested that teachers using the traditional chalk and talk may not help students to develop good problem solving skills. Kitaoka suggested alternative methods designed to increase teacher-student communications along with context rich problem solving. Findings from this study show an increase in student performance. An increase in communications motivates a student to actively participate in the learning process.

In 1989, Brigham Young University (BYU) faculty decided that their accounting students were often required to memorize code sections or FASB pronouncements. Faculty lectures were primarily based on traditional content competencies. Concept applications were limited to textbook problems and instructors had little time to focus on the conceptual foundation of accounting or real world relevance. In 1994, BYU decided to modify its lecture for accounting courses (Albrecht, 1994). Writing skills were stressed in selected classes and more emphasis on oral communications skills. BYU sought to enhance the skill-based competencies' required in the accounting curriculum. The faculty decided to focus on nine expanded competencies in addition to content competencies (Albrecht, 1994).

The BYU faculty realized that they were inexperienced in teaching such skills and that significant development would be necessary. The nine competencies can be grouped into five categories as follows:

- Written Communication
  1. Ability to present views in writing.
- Oral Communication
  2. Ability to present views through oral communication.
  3. Ability to listen effectively.
- Group Work and People Skills
  4. Ability to understand group dynamics and work effectively with people.
  5. Ability to resolve conflict.
  6. Ability to organize and delegate tasks.
- Critical Thinking
  7. Ability to solve diverse and unstructured problems.
  8. Ability to read, critique, and judge the value of written work
- Working Under Pressure
  9. Ability to deal effectively with imposed pressure and deadlines,

As the new curriculum was developed, these nine expanded competencies became part of the focus of each day lesson plan. Each four-hour block emphasized one or more of these competencies. In addition to the technical content, the grading system was redesigned to weight the technical content and the other competencies equally. The revised curriculum also incorporated changes to the student evaluation system.

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Once the competencies were measured, student performances were summarized into a single course grade. BYU 24-semester credit hours of accounting curriculum was divided into six four-credit hour courses. These courses were scheduled as following:

fall semester

- Accounting Information Systems
- Intermediate Financial Accounting I
- Financial Statement Auditing

Spring semester

- Cost and Management Accounting
- Intermediate Financial Accounting II
- Fundamental of Taxation.

The new accounting curriculum at BYU represented a major structural change from the traditional accounting education ([www.byu.edu](http://www.byu.edu)). In summary, the reactions of the vast majority of faculty, students, and other stakeholders who studied or participated in the revised curriculum were positive. Indeed, the benefits seem to far outweigh the costs. Fast forward, the National Association of State Board of Accountancy report on the performance of candidates on the CPA exam ranked BYU second in the nation by pass rate (83.4%) for 2012 and first in 2013 with a pass rate of 84.2% for large accounting program. This is a definitive metric of the success of the BYU program.

Some observers have suggested that BYU, a private, religious-based institution has been able to make these significant changes because of its unique faculty and student body. The authors are not convinced that the developments require such specific circumstances. The crucial variable for success does not seem to be a unique demography--but rather a willingness to change coupled with patient work.

## **ABCs OF ACCOUNTING**

To improve the performance of students and to reduce the failure rate of students at this HBCU, the authors start using the ABCs of accounting model of teaching. To prepare students for the profession, it is imperative that students are able to learn new concepts using a consistent framework. This allows students to comprehend new material without getting bogged down into the weeds of details rules and procedures. Thus, topics are presented to students via the ABCs of accounting model. The meaning of this acronym are:

- “A” is for Allocation;
- “B” is for Book valuation; and
- “C” is for Classification.

The “A” (allocation) concept is used to explain the relationship between the balance sheet and the income statement. It teaches students that all items on the balance sheet will be allocated to the income statement at some future date. For example, inventory and cost of goods sold are similar and building and depreciation are similar. These are costs that must be allocated from the balance sheet to the income statement under the accrual basis of accounting. Thus FIFO and LIFO are just the mechanics of completing this allocation process. The same can be said of straight-line and double-declining balance methods of depreciation. The goal is to teach students

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the allocation concept and not the mechanics. Afterward, students can apply the “allocation” concept to the other balance sheet and income statement accounts without getting bogged down into the weeds of details rules and procedures. Thus students are able to learn more material and professors are able to devote more time on developing critical thinking skills.

The “B” (book valuation) concept is used to explain the valuation bases used to measure transactions, historical cost or fair value. Accounting textbooks use terms such as historical cost, amortized cost, present value, discounted cash flows, and fair value as separate valuation basis. Students are often confused and misled into thinking that these are different valuation basis and not just a variation of historical cost or fair value. Once students understand the book valuation concept, students can easily applied it to other measurements without further explanation, thus students are able to learn more material and professors are able to devote more time on developing critical thinking skills.

The “C” (classification) concept is used to explain that accounting information would be meaningless to creditors, investor and others without proper classification. Proper classification enhances the decision-making process. It teaches students to classify accounts into the following categories: asset, liability, equity, revenue (gain), and expense (loss). Thus, when a new account is introduced in the textbook, students can immediately classify that account. For example, if an account is classified as an asset or liability, students know immediately that the account would be on the balance sheet and subject to the allocation concept. In addition, students are further instructed to sub-classify these assets or liabilities as current or noncurrent. A similar classification is taught for revenue and expense accounts using the multiple-step format of classification. Thus again, when students are able to understand the classification of an account, students are able to learn more material and professors are able to devote more time on developing critical thinking skills.

The acronym continues with the “Big D” for disclosure. To insure transparency to all parties, students are taught that all significant allocation, book valuation, and classification issues must be disclosed. Thus, teaching techniques has involved over the past five years. It has evolved from teaching less rules and procedures to more emphasis on concepts.

This paper also proposes greater use of digital instructional support platforms to reinforce conceptual learning through homework assignments while classroom interaction emphasizes higher order critical thinking while connecting the dots to the concepts assigned. The increased student to faculty communication is structured to develop higher ordered thinking (Newman, 2008). Today’s student embrace of digital technology offers an opportunity to maximize learning concepts while yielding additional time for class communication. Digital innovations are still in its infant stage. Accounting curricula will surely benefit from increased integration of instructional technology.

This paper evaluates the correlation of the ABCs of accounting concept of teaching to student performance on CPA exams at a HBCU. Just like BYU, this new accounting teaching technique represented a major structural change from the traditional accounting education. Again, some observers might suggest that a HBCU might have a unique faculty and student body. Again, the authors are not convinced that this is the case. The crucial variable for success does not seem to be a unique demography--but rather a willingness to change coupled with patient work.

## CPA EXAM RESULTS

The ABCs of accounting model involves preparing students for the new technological era of e-commerce and the attributes that students must have to be successful. Student must have academic competencies of technical, analytical, conceptual, and communications skills along with other behavior competencies of professional image, judgment, assertiveness, teamwork, and leadership to be successful in the marketplace. The goal was to develop these higher level critical thinking skills.

The CPA exam is an external metric that can be used to evaluate the effectiveness of the ABCs of accounting model. This is a uniform exam given on a worldwide basis to identify those individuals who processes the basic competencies to be called a CPA. The CPA exam consists of the following four sections:

- AUD- -Auditing and Attestation
- BEC- -Business Environment and Concepts
- FAR- -Financial Accounting and Reporting
- REG- -Regulation.

This study seeks to determine a correlation between the ABCs of accounting model and the performance on the CPA exam from this HBCU, for the years 2012 to 2013. Some average baseline demographic information about this HBCU is presented below:

- University enrollment- - 4,400 students
- College of business- - - 770 students
- Accounting majors - - - 125 students
- Accounting graduates - - 20 students.

The smaller number of accounting majors and accounting graduates allowed the faculty to give individualized attention to students to enhance their critical thinking skills. This has resulted in smaller number of students sitting for the CPA exam, an external metric to evaluate the effectiveness of the accounting program at this HBCU.

### SUMMARY PERFORMANCE

Year	Candidate Total	Sections Total	Percent Pass	Average Score
2012	7	13	53.9%	70.8
2013	14	29	27.6%	57.8

### SECTION PERFORMANCE

	Total Events per Section				Percent Pass		Percent Pass	
	AUD	BEC	FAR	REG	AUD	BEC	FAR	REG
2012	3	0	6	4	66.7%	0.0%	33.3%	75.0%
2013	14	7	3	5	14.3%	28.6%	66.7%	40.0%

The summary performance shows that the number of HBCU students sitting for the CPA exam increase from seven in 2012 to fourteen in 2014, a one-hundred percentage increase. The total sections taken also increase by over one-hundred percentage from 2012 to 2013. However, the percent pass decrease by forty-nine percent from 53.9% to 27.6%. The average score also decrease by eighteen percent from 70.8 to 57.8%.

The section performance was also mixed for these HBCU students. The percentage increase on the BEC and FAR section of the CPA exam, but decrease on the AUD and REG section of the exam. However, each section of the CPA exam was passed by a student.

The results are hopeful that this HBCU is moving in the right direction to improve the critical thinking skills of its accounting majors that is reflective by their performance on the CPA exam. As an added benefit, the failure rate has been reduced from thirty-five (35%) to twenty (20%) percent, again, a step in the right direction.

## **CONCLUSION**

This study explores the ABCs of accounting model that improves critical thinking skills. Critical thinking increases the need to compare, contrast, group, and memorize relevant accounting concepts. The literature argues that students have considerable difficulty in solving problems that are slightly different than those presented in the classroom, even though the same concepts is being covered . The quality of future accountants will be shaped by a need for improvement in critical thinking skills.

This study also sort to determine a correlation between the ABCs of accounting concept teaching model and performance on the CPA exam from a HBCU for the years 2012 to 2013. The summary performance shows that the number of ASU students sitting for the CPA exam increase from seven in 2012 to fourteen in 2014, a one-hundred percentage increase. The total sections taken also increase by over one-hundred percentage from 2012 to 2013. However, the percent pass decrease by forty-nine percent from 53.9% to 27.6%. The average score also decrease by eighteen percent from 70.8 to 57.8%. The section performance was also mixed for these HBCU students. The percentage increase on the BEC and FAR section of the CPA exam, but decrease on the AUD and REG section of the exam. However, this HBCU had students passing each section of the CPA exam. More data points are needed to fully evaluate the effectiveness of the ABCs of accounting concept.

There are many studies conducted over the years about learning and teaching techniques. Instructors have used the conceptual approach for learners to satisfy outcomes measurement over the centuries. This study espouses the use of the ABCs of accounting approach to teaching accounting. Research suggest a review and reengineer of lesson plans to maximize learning is needed. The question becomes what changes are required in order to improve upon the ABCs model. An instructor enters a classroom with a lesson plan that is reflective of the accounting curriculum. Then there is an interaction with various student's learning style. Research has shown that no single teaching model will optimize student learning for all students but the ABCs of accounting model is a step in the right direction.

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