Journal of Accounting, Finance and Economics
Vol. 6. No. 2. September 2016 Issue. Pp. 49 – 64

Measuring the Learning Outcomes and Critical Thinking: The Case of Saudi Accounting Students

Obaid S AlMotairy*

Assessing the achievement of learning goals is essential part of every business program and school to prepare students for the future. There is an agreement among the experts that class room time should be rationalized and student should spend also their time for the critical thinking. There is a great demand for students having the attributes of critical thinking who can meet the expectation of advance technology savvy employers. In response to the demand of the stakeholders, accounting schools have abandoned traditional methods of teaching. They leaned towards the accounting students who possess the attributes of writing and of presentation skills on the current issues, of enhanced skills of critical thinking and communication. The College of Business and Economics at Qassim University, Saudi Arabia has undertaken a project, policies, measures and steps to raise learning outcomes and the level of critical thinking among the accounting students. This paper intends to numerically measure the learning outcomes, indicators of critical thinking and at the end endeavoured to assess the association between learning outcomes and critical thinking. It turns out, at the end of a project, that methodology developed for the current study has significant impact in terms of attaining desired learning outcome and raising the level of critical thinking by the accounting students.

Field of Research: learning outcomes, critical thinking, accounting, skills, teaching, research project, Saudi Arabia

1. Introduction

In this era of advanced technology, a consensus has been observed among the accounting professionals and educators that the curriculum of the subject of accounting must be updated, i.e., content as well as structure should be according to the requirement of the market and employers. Silvester (2012) opines that students should leave their comfort zone and change their role from passive to active. A dire need is felt from the customers as well as from the end of suppliers to revise and updated the syllabus of accounting continuously. So, a number of models are developed and redesigned the curriculum to enhance the competencies including critical thinking of the students. There is a demand from the market to increase the interpersonal communication, inventiveness, cognitive and diagnostic ability, etc. Now the questions are posed: how these objectives will be achieved in the given circumstances? Is it necessary to change the current methods of teachings? How it is possible for the educators to provide the healthy dose of critical thinking to the students? Is there any methodology which allows the instructors to spend more time on the critical thinking? What will be the result if this dose is more than the prescribed one? Are instructors ready to move with the new methods and techniques?

*Obaid S. AlMotairy, Accounting Department, College of Business and Economics, Qassim University, Saudi Arabia. E-mail: Dr.obaed@gmail.com

Thompson and Washington (2015), after considering the market demand, proposed that instructors should give more time to the concepts and critical thinking rather than on accounting rules and procedures. They stated that: “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 is to develop these competencies via higher level critical thinking skills.” (p.1)

There are number of definitions of critical thinking. These vary from subject to subject and from one situation to another situation. The American Heritage Dictionary defines “critical” as, “characterized by careful and exact evaluation and judgment” (Reinstein and Bayou1997, p.336). Boostrom (1996) explains that thinking is not a stepwise process rather it is a multidimensional and interlinked with each other. It is based on open mindedness, flexibility, ability to learn and understand, ability to draw the conclusions from the new information and experiences. Bloom (1956) described that degree of knowledge is highly correlated with the degree of skills, i.e. critical thinking. Reinstein and Bayou (1997) support the idea that the value of professionals is associated with their ability to think critically. The ability to learn from the past in a cognitive way, ability to draw the conclusion in a rational way, making the decision with open mindedness and ability to evaluate the situation should have prime importance. Charles et.al. (1998) define as: "……. critical thinking as involving the examination of issues rationally, logically, and coherently; being able to acquire, evaluate, and perhaps even produce information and knowledge; and being able to make decisions in both familiar and unfamiliar circumstances. In other words, critical thinking is similar to, but not identical to, synthesizing structure from unstructured information to make a decision in an environment heretofore not encountered."(p.382)

Bloom (1997) categorized critical thinking into three segments, i.e. recall, process, and apply. Albrecht and Sack (2000) conducted a survey about the competencies of accounting students and reported that critical thinking or its synonymous are on the top of the rank. Pascarella and Terenzini (2005) find that individuals are learning from their experience, from their environment and especially the post-secondary education increases the cognitive skills and critical thinking, i.e. developing the new ideas, applying new information, expressing effectively, reasoning, innovating, behaving nicely, and making the decision in the environment of uncertainty and imperfection information. However it all depends upon the appropriate methods of teachings which fulfill the demand of the market. AICPA (1999) defines critical thinking in this way, ‘‘the ability to link data, knowledge, and insight together from various disciplines to provide information for decision making’’ (Cited in Young and Warren, 2011 p. 859). Kealey et. al. (2005) stated that a number of elements are included in the critical thinking, e.g. development of strategy, recognize the SWAT with a particular state of business, collecting the required information for making the decision, examining and planning strategic information. However according to Young and Warren (2011), knowledge is transferred from “one situation to another”.

However, inclusion of critical thinking may result in reduction of important accounting concepts or topics due the time constraint. Ennis (1962) and Pithers and Soden (2000) are in view that incorporation of critical thinking does not require removal of the important topics and concepts of the accounting subject. They added that critical thinking is the part of the contents of the subject matter. Wolcott et. al. (2002) and Cunningham (1996) recognized the issues related to inclusion of critical thinking because it leads from one

situation to another, i.e. from passive to active approach. Moreover, it is not an easy task for the educators to adopt the new system. It is a time taking process and active learning strategies are more effective than the passive and traditional strategies. Young and Warren (2011) suggested that if educators are inclined to include the critical thinking in the curriculum then they have to "(1) use developmental models to better link educational interventions with desired critical thinking skills, (2) clarify the critical thinking educational objectives, and (3) select more appropriate critical thinking dependent variable measures for assessment"(p.860). They further emphasized that educators should learn from their experience when they are using and assessing the critical thinking exercises and ultimately they will be able to develop the best practice. However, this is a continuous process.

Reinstein and Bayou (1997) mention that educators and practitioners of accounting should understand the critical thinking in its true sense, which part of it is applicable to the accountants. They showed how it should be included in the undergraduate and graduate courses at different levels, how it is possible to follow the new philosophies of critical thinking and which instruments can be used for the continuous improvement. Deppe et. al. (1991)conclude that critical thinking is the most important ingredients for the young accountants if they want to be successful in the profession.

Last but not least, Sin et. al. (2015) explain the critical thinking in the context of accounting profession as: “Critical thinking in these contexts typically involves at least the following: being able to identify and promote client outcomes; possessing an ability to determine the less obvious implications of numerical data; an ability to cope with extremely complicated social, organizational, and institutional scenarios; evaluating the motives of key stakeholders as well as well as the relevance of abstractly formulated concepts and principles; and internalizing these abilities as attributes and ultimately a disposition that involves a commitment to honesty, accuracy, and ethical practice. However, the desirable traits also include open-mindedness— that is, the willingness to consider different viewpoints, different ways of doing things, and indeed different and often in some sense imperfect solutions” (p17-18).

However, most of the experts and researchers are not supporting the repetition of same concepts in the different courses. Overdose may create an environment of disinterest. So the different concepts should be discussed in the different courses throughout the session. They also suggested that teachers’ training for the improvement of critical thinking is very much desirable. Such arguments are so important for an environment like Saudi Arabia which considers as one of the biggest developing economies and the country of the higher education expenditures in the Middle East. The Saudi public universities are enrolling 1.2 million students at their undergraduate programs, which indicates the need for solid educational system that could enhance the abilities of those students.

Keeping the above in view, an effort has been made to examine the impact of critical thinking on the accounting students at College of Business and Economics (CBE), Qassim University (QU), Saudi Arabia. Simultaneously it would be examined to see how the instructors are ready to include these concepts in their teaching; how the learning and training of the students are compatible with the demand of the market and how student will improve their critical thinking skill. This study aims at investigating wither accounting students at CBE, QU can be critical thinkers and wither this achievement is linked to their achievements in other learning outcomes. Such study considered as the first one in

Saudi Arabia and Gulf Cooperation Council that focus on the linkage between critical thinking and learning outcomes for accounting students.

The present study is organized in the following manner. Section 2 reviews the literature related to the critical thinking in the field of accounting education, while Section 3 explains the methodology and data issues. Section 4 presents the empirical findings and Section 5 contains conclusion.

2. Critical Thinking and Teaching of Accounting: A Literature Review

Most of the studies are devoted for providing different models and techniques which are used by the different schools for enhancing the critical skills among the students of accounting. Silvester (2012) examined the impact of unstructured project which was assigned to the students of accounting, Thompson and Washington (2015) explains the effect of ABCs- a teaching accounting model - on the students of accounting, Young and Warren (2011) examines the challenge problem approach. Sin et. al. (2015) mentioned judicious mixture of the methods whereas Reinstein and Bayou (1997) elucidate the influence of decentralized teaching technique on the students of accounting.

Silvester (2012) assigned an unstructured project on capital budgeting to the senior undergraduate students. It was the requirement of the project that instructors and students should leave their "comfort zone" (text books and homework). Students developed their own business proposal and applied significantly critical thinking on each and every phase of the project. At the end, students presented their projects to the professionals and received feedback. He concluded that during this exercise students acquired learning skills; they used their intellectual skills; they gained the experience and learnt about how to evaluate their own proposed projects. However, the beauty of this project was that instructors did not play the role of the expert and they actively participated with the students. Thompson and Washington (2015) used the ABCs of accounting teaching model where “A is for Allocation, “B” is for Book Valuation, and “C” is for Classification”(p.1). They claim that students learnt new material without going into more details rather than concentrating more on the traditional material. They further added that faculty was also able to emphasize more on the critical thinking skills which are required by the market. They also discussed the impact of this technique on the performance of those students who appeared for the Certified Public Accountant (CPA) examinations. They recommended it for the other accounting schools to use this teaching technique for enhancing the critical skills of their students. Reinstein and Lander (2008) stated that critical skills of the learners could be increased if faculty would not focus on the traditional methods of teaching. Again, this should not involve practice of memorization. Bloom (2013) suggested the improvement in the curriculum while he discussed the findings of Pathway Commission. He further pointed out that students might have difficulty when they face with the complicated accounting problems.

The Bedford Committee (1986) finds that traditional methods of teaching in the accounting schools are not very helpful and they are not able to create the ability of creativity, innovative thinking and efficiency in learning, consequently students are not able to fulfill the requirement of the market. Limbach et. al. (2008) asserted that five steps are involved in the process of critical thinking skills. These are: “Step 1 - Learning Objective, Step 2 - Teach through Questioning, Step 3 - Practice before Assessment, Step 4 - Review, Refine and Improve, [and] Step 5 - Provide Feedback and Assessment

of Learning" (cited in Thompson and Washington 2015,p.1).Singer and Wiesner (2013) are in view that basic concepts of accounting should be taught in the high school and that college should give more attention on critical thinking. They noticed that homework and peer interaction have significant effect on the learning of critical thinking. Kitaoka (2013) finds that traditional methods of teaching like using board, lecturing and text books are not useful in increasing the critical skills of the students. He advanced this argument that teaching methods should be developed to increase the teacher-student interaction and communication that should enrich the ability of the students to solve the complex accounting problems. He emphasized on "written communication", "oral communication", "group work and people skills", "working under pressure", and "critical thinking" . Newman(2008) also supports teacher-student interaction for raising the level of critical thinking. Fichman (2014) agrees that at present digital technology used in the accounting class rooms has the potential to increase the accounting students' ability for critical thinking. Gunderson (2013) opted for learning of accounting outside of class and for minimum use of classroom time. He finds that (1) students gain an appreciation for the diversity of financial instruments as they vary along a continuum from pure debt, through hybrids to pure equity; (2) students gain an understanding of representational faithfulness and the limitation of a dichotomous classification scheme to faithfully represent the diversity of financial instruments that exist; and (3) students have an introductory experience with principles-based accounting rules and applied professional research" (p.1).

Young and Warren (2011) applied challenge problem approach while developing the critical thinking skills in introductory accounting courses. This approach covers the both sides, i.e. theory and practical aspects of the introductory courses of accounting. This approach transfers the knowledge of students from comfort zone to new unfamiliar zone. They find that this approach is highly valuable from the market point of view. In their opinion, it is an essential condition for an effective accounting profession. It is an obligatory duty of the faculty to help the students so that they can develop this trait. Wolcott et. al. (2002) opine that critical thinking is necessary for the accounting professional especially, for the young accountants. This is the duty of the faculty to provide help and support to the students while developing this skill. It is an irony that despite the existence of so much literature, no consensus among was found about the best program/method that is suitable for the accounting students for developing the critical thinking skills. Young and Warren (2011) reviewed the different studies and then classified them into knowledge transmission (surface learning) and learning facilitation (deep learning). Jones (2010) and Chabrak and Craig (2013) tried to draw the attention of accounting schools towards the required characteristics of students, such as, "flexibility of thinking", "analytical and critical skills", "interpersonal skills", "ability to work with others".

Whitten (2009) stated that faculty of accounting needs more extensive strategies than only emphasizing on memorization. Reinstein and Bayou (1997) and Kinney (1990) highlighted the requirement of the Association to Advance Collegiate Schools of Business (AACSB) to improve the critical skills of the business students. Charles et. al. (1998) quoted as:

"Individuals seeking to be successful in the diverse world of public accounting must be able to …… solve diverse and unstructured problems in unfamiliar settings; …. comprehend an unfocused set of facts; identify and if possible anticipate problems; and find acceptable solutions "(p.382). They also mention that the critical thinking is a

universal for accounting profession. Novin and Pearson (1989) conducted a survey on accounting students and reported that they should have "thinking skills", "solving skills", “listening skills" and "writing skills". Charles (1998) discussed the declaration of The Accounting Education Commission "AECC" (1990) and commented as: "Students should be taught “how to learn” (p.386). To learn, one must be able to order and structure the facts and data observed. Thus, critical thinking is essential to “learning how to learn”. Reckers (1995) suggested that curriculum of accounting should be revised according to the demand of the customers ("employers of accounting graduates") and this is the responsibility of the faculty to train and develop themselves according to the requirement of the market. Frederickson and Pratt (1995) suggested that the model of accounting education should identify the desired competencies of graduating students. He et. al. (2013) discussed the case of Chinese universities and concluded that student should leave their comfort zone and should be "nourished intellectually". Kealey et. al. (2005) find that critical skills are very helpful for the accounting students during their study program. Springer and Borthick (2004) conducted an experiment on the students of junior financial accounting course and they found that in order to improve the higher order learning skills (critical skills), students should move from traditional learning methods to business oriented techniques. Chevis et. al. (2011) recommended ‘‘Backpack to Briefcase’’ strategy which provides assistance to the students in moving from classroom to practical world. The Association to Advance Collegiate Schools of Business (AACSB) (2013) stated that business/accounting schools should address critical thinking skills as part of the undergraduate curriculum. So far our understanding goes, there are few empirical studies on critical thinking in business education and such research gap constitutes the objective of this research work.

On the basis of above annotations, it is clearly noticed that different researchers have agreed on the need for critical thinking for accounting students at the time of the need for other skills and competencies, the following hypotheses have been developed in order to examine whether students’ critical thinking is associated to other learning outcomes or not:

- **H_1:** Students’ achievement in gaining theoretical and practical knowledge is significantly associated to critical thinking.
- **H_2:** Students’ oral presentations skills are significantly associated to critical thinking.
- **H_3:** Students’ writing skills are significantly associated to critical thinking.
- **H_4:** Students’ understanding of ethics, social responsibility, and cultural diversity is significantly associated to critical thinking.
- **H_5:** Students’ team work skills areis significantly associated to critical thinking.

3. Methods and Data

This study follows a case based approach to investigate whether accounting students at CBE are gaining different skills and competencies at the time of developing their critical thinking abilities at CBE’ undergraduate program. The CBE's bachelor of business administration (BBA) program aims at developing different business skills including critical skills and business knowledge among the undergraduate students in order to compete in the complex and rapidly changing environment of business and public sectors. The program curriculum is distributed over 8 levels, out of which the first 3 levels are devoted for building foundation knowledge and skills in business. Specialized

accounting courses are offered from level 4 to level 8 whereas the coursework consists of 129 credit hours.

The program provides foundation knowledge in business and encourages students to keep pace with the rapid progress of science and technology and to pay attention to the current issues and the developments in the field of business. The program allows the students to pursue any of the 4 specializations, namely, Accounting, Finance, MIS and Management, according to their career aspirations. The 'BBA program' is continuously assessed and evaluated to incorporate advanced business knowledge. The program's Learning Goals and Objectives (outcomes) can be grouped into five categories as follows:

1. Students will demonstrate latest **theoretical and practical business knowledge** and understanding across functional areas.

   Objectives:

   - Students will be able to define basic business concepts.
   - Students will be able to use business knowledge in their decision making process.

2. Students will be **effective communicators** in an organizational environment with regard to the use of latest technology.

   Objectives:

   - Students will be able to demonstrate their skills in presenting information orally.
   - Students will be able to demonstrate their skills in presenting information in writing.
   - Students will be able to demonstrate their skills in business communications, data interchange, and business reporting.
   - Students will be able to demonstrate that they have relevant information technology skills.

3. Students will be able to demonstrate that they are **critical thinkers** to evaluate, analyze, and interpret information in order to solve problems.

   Objectives:

   - Students will be able to analyze business information,
   - Students will be able to make relevant decisions.
   - Students will be able to deal with business problems.

4. Students will be able to demonstrate that they have a relevant understanding of **ethics, social responsibility**, and cultures diversity.

Objectives:

- Students will be able to have relevant knowledge about social responsibility.

- Students will be able to recognize ethical issues and situations.
- Students will be able to demonstrate an understanding of the diverse world.

5. Students will acquire relevant team-working skills to lead organizations.

   Objectives:

   - Students will be able to work in teams.
   - Students will be able to demonstrate understanding of basic leadership concepts.

At CBE, there are 57 semester credit hours of accounting curriculum which are divided into 19 courses. The curriculum was developed to weight the technical content and the other learning goals equally. CBE included critical thinking as a learning objective in 9accounting courses. Table 1 maps out learning goals for accounting courses.

In order to test the above mentioned hypotheses, the researcher identified one of the courses offered for senior accounting students which is "seminar in accounting" (ACCT 474) in order to be the unit of testing for this case based research. This course has been selected for different reasons which are; its offered for senior accounting students who already gain much of the accounting knowledge, the main objective of this course is to train the students for the future requirement of the accounting profession, which indicate the relevance of this course to be used in assessing different learning goals and outcomes, and gaining the needed approval for applying this study in this course. The curriculum of this course was designed and developed by the accounting department according to the need of the accounting profession in Saudi Arabia. Emphasis is given on developing students' competences in different skills including critical thinking through research activities that focus on current issues and hot topics in accounting. Through this method, CBE provides the training to the students to meet the expectations and demand of the market.

Table 1: Mapping Accounting Courses to Learning Goals

#	Course	Course's Name	Goal 1 Knowledge & Understanding	Goal 2 Communications	Goal 3 Critical Thinkers	Goal 4 Ethics & CSR	Goal 5 Team Work
1.	ACCT 120	Principles of Financial Accounting	√				
2.	ACCT 231	Principles of Managerial Accounting	√				
3.	ACCT 240	Intermediate Accounting I	√				
4.	ACCT 241	Cost Accounting	√				
5.	ACCT 350	Intermediate Accounting II	√				
6.	ACCT 353	Accounting Information Systems	√				√
7.	ACCT 354	Governmental Accounting	√				
8.	ACCT 355	Zakah and Taxation Accounting	√				
9.	ACCT 360	Advanced Financial Accounting	√		√		
10.	ACCT 361	Advanced Managerial Accounting	√		√		
11.	ACCT 362	Internal Auditing	√	√	√	√	
12.	ACCT 363	Computer Applications in Accounting	√				√
13.	ACCT 365	Financial Reporting Analysis	√	√	√		√
14.	ACCT 471	Special Studies in Accounting	√	√	√		√
15.	ACCT 474	Seminar in Accounting	√	√	√	√	√
16.	ACCT 481	International Accounting	√	√	√		
17.	ACCT 482	External Auditing	√	√	√	√	
18.	ACCT 484	Preparation for SOCPA Exam	√				
19.	ACCT 485	Accounting Theory	√		√		

In such course, it is assumed that undergraduate students of accounting can enhance their critical thinking skills in the classroom through innovative techniques. By considering the market demand, curriculum of the seminar in accounting (ACCT 474) was developed by focusing on the research task which that is assigned to the students individually or in a group. The research methodology and process contains all the above mentioned components. The current study is to examine the skill of the students who are enrolled in ACCT 474 in the second semester of the academic year 2015-2016, and measure their achievement towards critical thinking and the rest of the learning outcomes in this course. During the semester, first 7 weeks were allocated to learn and discuss the topics which are prescribed in the syllabus that deal with current accounting issues. After this period, students were asked to develop a research proposal. They were asked to discuss the project in the classroom with their classmates. The instructor provided his feedback on the research ideas which is aligned with Kitaoka (2013) suggested approach to enhance students' critical thinking skills. Total number of enrolled students in the course was forty five. Again, they were divided into groups and each group was constituted by almost 4 students. Every group was assigned with a topic which was discussed in the classroom. However, it was instructed that selected topics should be focused on the accounting education. "Learning by doing" technique was adopted for this task. At the end, every group selected a well-defined specific research topic, which is classified in to four main areas with different approaches.

1. Needed skills for accounting graduates (4 groups)

2. Importance of professional certificates to accounting graduates (2 Groups)
3. Importance of critical thinking to accounting graduates (2 groups)
4. Importance of internship to accounting graduates (2 groups)
5. Awareness of ethical issues to accounting graduates (2 Groups)

During the last seven weeks of the semester, students were asked to apply the knowledge they acquired during the first seven weeks by writing a research proposal about one of the discussed topics. In this second part of the semester, every group submitted research activity with step by step process. Each group presented and discussed a particular issue during the lectures through a well-designed research proposal and they incorporated feedback and comments received in the classroom.

Every group submitted the research activity (proposal) in the following sequence.

1. Defining the research issue
2. Providing literature review of 2-3 relevant published papers
3. Setting the research objectives
4. Selecting the appropriate methodologies and methods
5. Collecting the data from different respondents (Students, Academics and Employers) and analysing data
6. Submitting draft of the research proposal (length is about 10 pages)

At the end, the instructor reviewed the final draft of the research report based on the criteria provided in the syllabus and he assessed critical thinking skills based on the approved grading rubrics. Rubrics can be a useful tool in guiding students to improve their learning by focusing on important criteria which will be measured (Schaefer and Stevens, 2016).Rubrics were used for the measurement of the performance of the students against each component of the critical thinking. Tailored rubrics are assigned to the different indicators of learning outcomes and critical thinking for every group. These rubrics serve as the indicators which were used by the instructors for the assessment and evaluation of the performance and abilities of the students. The Rubric was designed by the curriculum committee of the Accounting Department- chaired by the head of the Department- to assess students' performance towards clearly indicated learning goals in the course of seminar in accounting (ACCT 474). Every group has given their input into the major theme of each research project, and then all these are mirrored in the course rubrics. It is interesting to note that there is no precise critical thinking term mentioned in the research project. However, in this current study the researcher/instructor use the term "critical thinking" for six different categories. Six to ten points are used for the assessment of different categories (see Table 2).

Table 2 below shows how critical thinking skills are assessed. The assessment criteria are measured based on the research process conducted by the students through different phases.

Table 2: Students will demonstrate how they are critical thinkers (Summary))

Goal	Objective	Traits	Assessment criteria	Grade
Students will demonstrate that they are critical thinkers	Students will evaluate alternatives and develop relevant decisions within a given business context	Identifies and summarizes the problem	Identify a research issue (focus on the problem)	6
			Summarize literature review	6
			Focus on the research problem and objectives	10
		Acquire appropriate information or evidence to build business decisions	Research Methodology & Methods	6
			Collect data &evidences	10
			Research Proposal	12
		Total		50

At the end of the semester, students were examined by asking them to answer essay questions, the score for the final examination was 30 grades.

4. Analysis of Results

In this current study, the assessment of critical thinking and learning outcome are empirically analysed based on the approved rubric for each learning outcome (objective) that has been developed to measure the students' performance under three categories which are; below expectation, satisfactory, and excellent. Each rubric includes different traits that explain the components of each learning outcome (objective). Table 3 depicts the assessment of five learning outcomes excluding critical thinking. Results relating to all the learning outcomes show that the students have achieved the quality target (80% of students are to achieve satisfactory and excellent categories) as per the results presented in the table. Students' performance against most of the learning outcomes are grouped under the category of excellent. Average score hovers from 13.3% to 28.95 under the category of satisfactory compared to theoretical and practical knowledge where it is 80%. The average score for the category of excellent varies from 71.1 to 86.7%.

Table 3: Assessment of Results of learning outcomes

No.	Learning outcomes	Traits	Satisfactory	Excellent	Satisfactory	Excellent
1	Theoretical and practical business knowledge	Apply relevant theories and practices	80	20	80	20
2	Students will be able to present information orally	Verbal and physical delivery	13.3	86.7	13.3	86.7
		Organizations of ideas and content	28.9	71.1		
		Focus on main ideas	20	80		
3	Students will be able to present information in writing	Purpose and objective	13.3	86.7	17.8	82.2
		Content	17.8	82.2		
		References and evidenced that support the ideas	48.9	51.1		
		Spelling, grammar, and word choice	75.6	24.4		
4	Students will demonstrate that they have a relevant understanding of ethics, social responsibility, and cultural diversity	Students will be able to demonstrate relevant knowledge about social responsibility	44.4	55.6	28.9	71.1
		Students will be able to differentiate the diverse business world situations	64.4	35.6		
5	Students will acquire relevant team-working skills	Team Work Meeting Reports	13.3	86.7	13.3	86.7
		Lecture Attendance	13.3	86.7		
		Participation in Class	13.3	86.7		
		Team Work Meeting Attendance	11.1	88.9		
		Member Contribution on the Work	15.6	84.4		
		Member initiative	15.6	84.4		

While Table 3 presents students' performance in 5 learning outcomes, the results of assessing the critical thinking is depicted in Table 4. This study has adopted six indicators for the assessment of critical thinking. Similar to other learning outcomes, three

categories are used for the assessment were classified as: below expectations, satisfactory and excellent. It is interesting to note that no sign of under-performance was found for three indicators, such as, define research issue, research objectives and collection & analyses of data. Average score for the category of satisfactory performance is 37.8% and score for excellent is 62.2%. However it hovers from 8.9% to 51.1% for satisfactory category and from 37.8 to 91.1% for excellent category. Overall assessment shows that skill of critical thinking is achieved with remarkable record. The score for the category of 'below expectations' is insignificant, where maximum score under this category is 11.1%.We have the same outcome for the assessment of learning outcomes. The results relating to all critical thinking indicators show that the students have achieved more than 80% of satisfactory and excellent performance compared to the quality target of 80% for satisfactory and excellent categories.

Table 4: Assessment Results of Critical Thinking

No.	Critical thinking indicators	Below expectations	Satisfactory	Excellent	Satisfactory	Excellent
1	Define Research Issue	--	8.9	91.1	37.8	62.2
2	Literature Review	11.1	51.1	37.8		
3	Research Objectives	--	51.1	48.9		
4	Appropriate Methodology & Methods	2.2	26.7	71.1		
5	Collection & Analyses of Data	--	48.9	51.1		
6	Submit Research Proposal	2.2	37.8	60		

The association between learning outcomes and critical thinking provides us with another insight about the performance, learning, acquirement of knowledge, and development of the skill of critical thinking. The Gamma correlation coefficients shown in Table 5 illustrate the significant relationships between the learning outcomes and critical thinking. It appears that both oral presentation and team work are significantly correlated with critical thinking ($r\lambda = 0.84$, $p < 0.05$), which supports H_2 and H_5. Additionally, information relating to writing was positively and significantly correlated with critical thinking ($r\lambda = 0.73$; $r\lambda = 0.75$, $p < 0.05$) which supports both H_1 and H_3. Finally, ethics, social responsibility, and cultural diversity are positively and significantly correlated with critical thinking ($r\lambda = 0.61$, $p < 0.05$) which supports H_4. This means that none of the hypotheses was rejected.

Table 5: Correlations between Learning Outcomes and Critical Thinking

Hypotheses	No.	Learning Outcomes	Scale	Critical Thinking			P-Value
				Satisfactory	Excellent	Gamma	
H_1	1	Theoretical and practical business knowledge	Satisfactory	16	20	0.73	0.029
			Excellent	1	8		
H_2	2	Students will be able to present information orally	Satisfactory	5	1	0.84	0.028
			Excellent	12	27		
H_3	3	Students will be able to present information in writing	Satisfactory	6	2	0.75	0.027
			Excellent	11	26		
H_4	4	Students will demonstrate that they have a relevant understanding of ethics, social responsibility, and cultural diversity	Satisfactory	8	5	0.61	0.041
			Excellent	9	23		
H_5	5	Students will acquire relevant team-working skills	Satisfactory	5	1	0.84	0.028
			Excellent	12	27		

From the above discussion it appears that leaning outcome and critical thinking are highly associated with each other and they are all statistically significant for the BBA students of College of Business and Economics, Qassim University (Saudi Arabia) which is an AACSB accredited institution. An effort was made to minimize the classroom time for the module seminar in accounting (ACCT 474). We tried to achieve the following objectives:

(1) Students should leave the comfort zone and should change from one situation to another situation.
(2) Students should transfer their knowledge which they have learnt in the classrooms into real world situation; and
(3) Students should be able to apply their knowledge of accounting on their research projects, develop their ability to present these projects in the classrooms and improve their critical thinking.

It is to be pointed out here that in the current experiment we have achieved the target of “Minimal use of class time”, and later on, these students were assigned to complete their research projects outside the classroom. It was evident that students’ learning outcomes and training of critical thinking would provide benefits to the students in terms of professional career in accounting. The acquired skills, abilities, capabilities, proficiencies and aptitudes are significant qualities for would be professional accountants. These learning outcomes emanated from theoretical and practical business knowledge, oral presentation, professional writing, understanding of ethics, social responsibility, cultural diversity and team-working skills.

5. Conclusion

Development of critical skills outside the classrooms along with classrooms knowledge provides the ability to cope with current requirements of the accounting professional. It is evident that Seminar of Accounting (ACCT 474) at College of Business and Economics, Qassim University, Saudi Arabia has been skilfully and rightfully designed, developed and delivered to produce accounting students with the attributes of critical thinking. The hypotheses which were developed in this study to investigate the correlation between critical thinking and other learning outcomes (objectives) are accepted and none of them was rejected. This means that students of this module have developed the ability to provide the practical solutions for the issues and problems faced by the employers and other stockholders. At the same time, considering the teaching methodology used for this experiment, it's clearly resulted that accounting education needs more interaction and students led activities to enhance students' generic skills where they can use later in the lifelong learning and career development, theses generic skills include writing, presentation, dealing with ethical and social situation and teamwork skills. The study would contribute towards filling up research gap so far left out by the previous researchers. The implication is that the success at CBE could be replicated in other teaching institutions for producing accounting students who work as per expectation of the employers.

References

Accounting Education Change Commission AECC 1990, 'Objectives of education for accountants: Position statement number one'. *Issues in Accounting Education*, vol. 5 no. 2, pp. 307-312.

AACSB International – The Association to Advance Collegiate Schools of Business 2006, *Eligibility procedures and accreditation standards for business accreditation*. Tampa, FL

Albrecht, WS & Sack, RJ 2000, *Accounting Education: Charting the Course through a Perilous Future*, vol. 16.*Sarasota*, FL: American Accounting Association.

American Institute of Certified Public Accountants AICPA 1999, *Broad business perspective competencies*. Available at: http://www.aicpa.org

Bloom, PS 1956, *Taxonomy of Educational Objectives: The Classification of Educational Goals*, David McKay and Company, New York, NY.

Bloom, R 2013, 'Perspectives on the pathways commission report: An analysis of the proposals'. *The CPA Journal*, vol. 83 no. 8, pp. 10-14. Retrieved from http://search.proquest.com/docview/1439943570?accountid=8244

Boostrom, JT 1996, in Taylor, R. (Ed.), *Increasing Student Achievement in Social Studies by Breaking through Basic Skills in Critical Thinking [Teacher's Manual]*, Bureau of Ethical Research, Bellevue, Washington, DC.

Chabrak, N & Craig R 2013, 'Student imaginings, cognitive dissonance and critical thinking', *Critical Perspectives on Accounting*, vol. 24, no. 2, pp. 91-104.

Charles, P, Billie, M, David, R, Robert, L & Susan, K 1998, 'Critical Thinking in the Public Accounting Profession, Aptitudes, and Attitudes', *Journal of Accounting Education*, vol. 16 no. 3/4, pp.381-406.

Chevis, G, Davis, CE, & Hurtt, RK 2011, 'Backpack to briefcase: The transformation from student to accounting professional', *Advances in Accounting Education*, vol. 12, pp.33–52.

Cunningham, BM 1996, 'How to restructure an accounting course to enhance creative and critical thinking', *Accounting Education* vol. 1, no. 1, pp.46–66.

Ennis, RH 1962, 'A concept of critical thinking: A proposed basis for research in the teaching and evaluation of critical thinking ability', *Harvard Educational Review*, vol. no. 32, pp.81–111.

Fichman, RG, Dos Santos, BL & Zheng Z 2014, 'Digital innovation as a fundamental and powerful concept in the information systems curriculum', *MIS Quarterly*, vol. 38, no. 2, pp.329. Retrieved from http://search.proquest.com/docview/1521632000?accountid=8244

Frederickson, JR & Pratt, J 1995, 'A model of the accounting education process', *Issues in Accounting Education*, vol. 10, no. 2, pp.229-246.

Gunderson, KE 2013, 'Distinguishing between Liabilities and Equity: Two Mini-Cases for Improving Student's Critical Thinking Skills in Intermediate Financial Accounting', *Journal of the International Academy for Case Studies*, vol. 19, no. 4, pp.45-60.

He, H, Craig, R & Wen, J 2013, 'Developing critical thinking skills and effective co-operative international accounting degree programs in China', *Asian Review of Accounting*, vol. 21, no. 2, pp.144 -159.

Jones, A 2010, 'Generic attributes in accounting: the significance of the disciplinary context', *Accounting Education: An International Journal*, vol. 19, no. 1/2, pp.5-21.

Kinney, WR 1990, 'Some reflections on a professional education: it should have been more positive', *Issues in Accounting Education*, vol. 5, no. 2, pp.295-301.

Kealey, BT, Holland, J & Watson, M 2005, 'Preliminary evidence on the association between critical thinking and performance in Principles of Accounting' *Issues in Accounting Education,* vol. 20, no. 1, pp.33–49.

Kitaoka, H 2013, 'Teaching Methods that Help Economics Student to be Effective Problem Solver', *International Journal of Art and Commerce*, vol. 2, no. 1, pp.101-110.

Limbach B, Duron, R & Waugh W 2008, 'Become A better teacher: Five steps in the direction of critical thinking', *Research in Higher Education Journal*, vol. 1, pp.1-13. Retrieved from http://search.proquest.com/docview/760989761?accountid=8244

Novin, A & Pearson, M 1989, 'Non-accounting knowledge qualifications for entry-level public accountants', *The Ohio CPA Journal*, vol. 48, no. 4, pp. 12-17.

Pascarella, ET & Terenzini, PT 2005, *How College Affects Students, a Third Decade of Research*, San Francisco, CA: Jossey-Bass.

Pithers, RT, & Soden, R 2000, 'Critical thinking in education: A review', *Educational Research*, vol. 42, no. 3, pp.237– 249.

Reckers, P 1995, 'Know thy customer', In Charles Baril (Ed.) *Charles in accounting` education. A research blueprint*, Federation of Schools of Accountancy, pp.29-35.

Reinstein, A & Bayou, ME 1997, 'Critical thinking in accounting education: processes, skills and applications' *Managerial Auditing Journal*, vol. 12, no.7, pp. 336 - 342.

Reinstein, A & Lander, GH 2008, 'Developing critical thinking in college programs' *Research in Higher Education Journal*, vol. 1, pp. 78-94. Retrieved from http://search. proquest.com/docview/760989878?accountid=8244

Schaefer, TF & Stevens, JS 2016, 'Using Rubrics to Assess Accounting Learning Goal Achievement', *Issues in Accounting Education*, vol. 31, no. 1, pp.17-28.

Silvester, KJ 2012, 'Coffee Anyone? An Unstructured Capital Budgeting Project To Encourage Critical Thinking Skills In Accounting Students', *Journal of Business Case Studies*, vol. 8, no. 2, pp. 223-236.

Sin, S, Jones, A & Wang, Z 2015, 'Critical Thinking in Professional Accounting Practice: Conceptions of Employers and Practitioners' in Davies, M and Barnett, R (ed.) *The Palgrave Handbook of Critical Thinking in Higher Education*, Palgrave Macmillan US, p. 431-456.

Singer, RA & Wiesner, T 2013, 'The future of undergraduate accounting programs and curricula', *Management Accounting Quarterly*, vol. 14, no. 4, pp. 22-31. Retrieved from http://search.proquest.com/docview/1465555537?accountid=8244

Springer, CW & Borthick, AF 2004, 'Business simulation to stage critical thinking in introductory accounting: Rationale, design and implementation', *Issues in Accounting Education*, vol. 19, no. 3, pp.277-303.

The Bedford Committee1986, 'Committee on the future structure, content, and scope of Accounting Education', *Issues in Accounting Education,*(Spring), pp.168-195.

Thompson, F & Washington, HL 2015, 'Critical thinking skills and teaching accounting: a comparative study', *Journal of Finance and Accountancy*, vol. 19, pp.1-8.

Thompson, F 2013, 'Performance of HBCUs on the CPA Examination for the Year 2010' *Journal of Finance and Accountancy*, vol. 13(July), pp.1-11. www.byu.edu/business/accounting/

Wolcott, S K, Baril, CP, Bayes, PE, Cunningham, BM, Fordham, DR, & St. Pierre, EK 2002, 'Critical thought on critical thinking research', *Journal of Accounting Education*, vol. 20, pp.85-103.

Young, M & Warren, DL 2011, 'Encouraging the Development of Critical Thinking Skills in the Introductory Accounting Courses Using the Challenge Problem Approach', *Issues in Accounting Education*, vol. 26, no. 4, pp. 859–881.

Whitten, D 2009, 'Predictors of Critical Thinking Skills: Studies of Introductory Accounting Courses', *Allied Academies International Conference: Proceedings of the Academy of Educational Leadership,* vol. 14, no. 2, Las Vegas.