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# Instructors' attitudes and perceptions toward critical thinking: A case study of interior design instructors in Saudi Arabia

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*University of Northern Iowa*

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# INSTRUCTORS' ATTITUDES AND PERCEPTIONS TOWARD CRITICAL THINKING: A CASE STUDY OF INTERIOR DESIGN INSTRUCTORS IN SAUDI ARABIA

An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

Afnan Al Ramis

University of Northern Iowa

May 2018

ABSTRACT

The purpose of this study was to investigate how critical thinking is defined by interior design female instructors in Saudi Arabia. Also, it aimed to examine instructors' perceptions and attitudes toward critical thinking. In addition, it served to illuminate potential obstacles and biases that prevent female instructors from teaching critical thinking skills at the schools and universities in Saudi Arabia. The research targeted female Interior Design instructors in particular, to examine their perceptions toward critical thinking. There were three research questions:

1- What are female Interior Design instructors' perceptions toward critical thinking? Do they teach critical thinking skills in the classes? If so, how do they do it?
2- What are the potential obstacles that prevent them from teaching critical thinking in their classes?
3- Does the Ministry of Education in Saudi Arabia require instructors to teach critical thinking? If so, how closely is that requirement followed by the instructors?

This research used a qualitative design. A Semi-structured interview format was used to collect data about Interior Design instructors' perception toward critical thinking, the strategies they use in their classes, and the potential barriers they encounter when teaching critical thinking in the classroom.

The results indicated that there is a general lack of understanding of the term critical thinking in Saudi Arabian schools and universities. Also, results showed that rote –

learning is basically the preferred method used in the classroom. Moreover, the findings illustrated five major obstacles that prevent utilizing critical thinking in Saudi Arabian schools and universities. The participants indicated the five obstacles which are students' interest, instructors' interest, society and culture, language issue and education system. Based on the finding of the study, implication for educational development are drawn and suggestions for future research are offered.

# INSTRUCTORS' ATTITUDES AND PERCEPTIONS TOWARD CRITICAL THINKING: A CASE STUDY OF INTERIOR DESIGN INSTRUCTORS IN SAUDI ARABIA

A Thesis

Submitted

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May 2018

This Study by: Afnan R. Al Ramis

Entitled: Instructors' Attitudes and Perceptions toward Critical Thinking:
A Case Study of Interior Design-Instructors in Saudi Arabia

has been approved as meeting the thesis requirement for the

Degree of Master of Arts in Education

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Mom and Dad, I am forever grateful for all of the lessons you have taught me. Both of you inspired me to continue learning and to pursue my dreams. You both graciously supported me along the way. Thank you.

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# CHAPTER 1

## INTRODUCTION

The concept of critical thinking is not new, but rather, it has been around for more than 2500 years. This concept originated from Socrates who developed a method of probing questions. Socrates believed that each person must think deeply about any concept and ask deep questions before accepting any thoughts. He discovered the significance of asking questions, analyzing concepts, seeking reasoning and assuming. The result of his experiment was to find a new hypothesis and concept regarding critical thinking. He established a new method of questioning known as, "Socratic Questioning," which was used as a method for teaching. Subsequently, many scientists expanded his concept through the centuries (Paul, Elder, & Bartell, 1997). At the beginning of the twentieth century, Dewey's Philosophy developed the teaching of critical thinking concept. Teachers began to teach critical thinking in the 1950's as an important topic and skill in education. Since then, educators have developed the concept as well as critical thinking skills and teaching strategies for critical thinking (Bataineh &Alazzi, 2009).

The importance of teaching critical thinking continues to be discussed through the years. Teachers want their students to be challenged, to be thoughtful, to be able to identify problems, to argue and to search for answers. In order to prepare students for the job market and future roles in a democracy, teachers must integrate critical thinking skills in the classroom (Kenney, 2013).

## Purpose of the Study

There are three main purposes for this study. First, to investigate how critical thinking is defined by interior design instructors in Saudi Arabia. Second, to examine teachers' perceptions and attitudes toward critical thinking. Third, to illuminate potential obstacles and biases that prevent teachers from teaching critical thinking.

## Statement of the Problem

Many universities and schools claim that critical thinking is important, and that it is a skill that they aim to teach their students. Instructors and teachers are becoming more aware of critical thinking strategies (Alwehaibi, 2012). However, many studies indicate a lack of understanding of critical thinking as a concept and as a significant skill in schools and colleges (Alwadai, 2014; Alwehaibi, 2012; Bataineh & Alazzi, 2009; Choy & Cheah, 2009; Stapleton, 2010). The teaching strategies in Saudi Arabia still emphasize memorizing as the best method for teaching at public and private schools. Many teachers in Saudi Arabia lack understanding of critical thinking and some do not know how to promote it in their classrooms. Also, textbooks do not include methods and activities that inspire students to think critically. As a result, students grow up from kindergarten without being exposed to critical thinking in both theory and practice. In recent years, however, there has been a major push in the education system led by the late King, Abdullah Ibn Abdul-Aziz, to develop the education system in Saudi Arabia and in a way that helps students to think about what they learn more critically (Al Ghamdi & Deraney, 2013; Alwadai, 2014; Alwehaibi, 2012). For example, in 2005, King Abdullah Scholarship Program was established. The goal of this program is to give a chance to

students to study abroad, due the lack of universities and educational facilities in Saudi Arabia. The scholarship is granted to male and female. However, Saudi female students must travel with a sponsor. Nowadays, there are about 70,000 Saudi students studying abroad in different fields. Also, in 2010, the Ministry of Higher Education initiated grant tuitions to Saudi students at private universities in Saudi Arabia. This helps students to get a chance of receiving an education when they are unable to pay the tuitions. This movement in education further helps students to improve their learning methods (Alamri, 2011).

The researcher targeted female instructors' in KSA. Since the education for women in KSA was prohibited until 1956, Alsuwaida (2016) found a limitation in women's education in KSA, compared with men. According to Alsuwaida (2016) "Without democratic politics, Saudi Arabia has always offered limited space for communication and collaboration and lacks a sense of community. Therefore, the country lacks the ideal environment in which one can advocate for women's education" (p.111). Saudi women are considered as more suitable to be housewives, rather than educated professionals, because of their lack of an educational background. The Saudi Society has also ignored women's opinions and their contributions to help develop the community.

The first school for women in Saudi opened in 1960. The government developed the curriculum for girls similar to boys' curriculum, but the boys' curriculum is more comprehensive (Alsuwaida, 2016). For example, the boys started to study English Language from the elementary schools but girls from the middle school. Also, boys are allowed to study geology courses, but girls are not allowed, and boys have more chances

to study at universities than girls. All these factors lead to gender differences to critical thinking in Saudi society. Nowadays, there is a development in women's education in KSA. For example, they have established new universities for women, opened new education fields for women and improved girls' curriculum.

Interior Design students and teachers need to create new ideas and concepts, and this requires critical thinking. So, Bloom's Taxonomy classification is important to Interior Design students in order to create new designs and concepts. The researcher targets Interior Design teachers in particular for many reasons. First, Al Ghamdi and Deraney (2013) mentioned that post-secondary education prefers traditional education methods and rote learning instead of critical thinking and creativity. The need of critical thinking in interior design department is important. Since problem solving and creativity is missing in Saudi Arabian education, the result of this research particularly in Interior Design Department will illustrate the precise vision for critical thinking. Second, many Interior Design students have a desire for creativity and they would like to introduce new concepts, but teaching strategies stop their creativity because they do not want to confront new questions. They believed that they are the teachers and they cannot learn from their students (Alwadai, 2014). Third, Alwadai (2014) called for more research about critical thinking with different fields of study, in order to develop the education in Saudi Arabia.

According to Bataineh and Alazzi (2009), "For more than forty years, elementary and secondary schools in the United States generally have emphasized critical thinking" (p.57). Developed countries must concentrate on the education system in order to develop the nation. For example, they must train students in logical thinking to identify and solve

educational problems. In addition, countries should consider the students as the center of education to convey the importance of education (AL Ghamdi & Deraney 2013).

## Significance of the Problem

Teaching critical thinking in the schools is important to developing students' cognitive abilities (Choy & Cheah, 2009). It is important for teachers to understand how students observe them in the classroom. This will develop teaching skills through the class (Choy & Cheah, 2009). In addition, it is important for teachers to work as mediators in class. This helps students to understand the course deeply and to better explain their thoughts and perceptions to teachers in order to discuss the students' ideas (Choy & Cheah, 2009). Researchers demand improved students' critical thinking skills because many college students fail to use analyzing, dissection and critical thinking (Halpern, 1999 ; Kuhn, 1999).

Critical thinking is considered as a basic skill in jobs and in life. Companies and institutions are looking for employees who can both solve problems and develop ideas and concepts. Therefore, schools and universities must continuously improve the education system in order to meet, not only the demands of the job market, but also requisite skills needed to be an analyzer in companies and universities (Alwadai, 2014).

It is important to focus on critical thinking as a subject to study in education because it is improving cognitive abilities. Improving the cognitive abilities of students is essential for many reasons. First, teaching students critical thinking is important to prepare them for their future lives. Students who think critically and creatively are more able to discover new concepts and ideas, and they are highly able to solve problems

instead of simply restating concepts (Alwadai, 2014). Second, Ozkan-Akan (2003) stated, "improvement of thinking skills aims to reinforce and challenge people's thinking skills in term of critiquing and verifying knowledge in general and school curriculum in particular" (as cited in Alwadai, 2014, p.39).

Because there is a high demand for critical thinking skills in Saudi Arabia, some private universities and colleges try to develop and request critical thinking courses. These courses are adopted from western curriculum in order to improve and elevate the education system through developing students' thinking skills (Al Ghamdi & Deraney, 2013).

## Research Questions

The aim of this study is to investigate how critical thinking is defined by Interior Design instructors in Saudi Arabia. Second, it aims to examine teachers' perceptions and attitudes toward critical thinking. Third, it serves to illuminate potential obstacles and biases that prevent teachers from teaching critical thinking. In particular, the goal of this study is to answer the following questions:

1. What are female Interior Design instructors' perceptions toward critical thinking? Do they teach critical thinking skills in the classes? If so, how do they do it?
2. What are the potential obstacles that prevent female Interior Design instructors from teaching critical thinking in their classes?
3. Does the Ministry of Education in Saudi Arabia require instructors to teach critical thinking? If so, how closely is that requirement followed by the instructors?

## Definition of Terms

**Instrumental Learning:** "learning is about controlling and manipulating the environment, with emphasis on improving prediction and performance" (Mezirow, 2003, p.59).

**Communicative Learning: "**refer to understanding what someone means when they communicate with you" (Mezirow, 2003, p.59).

**Scaffolding:** "is teaching that provides support to allow the learner to learn for himself or herself" (Athanassiou, McNett, & Harvey, 2003,p. 539).

## Purpose and Organization of Paper

This chapter went over a general introduction, provided a statement of problem, pointed out the significance of the problem and determined questions that will be used and investigated in this study. Chapter 2 will provide review of literature on critical thinking. It will analyze the definitions and characteristics of critical thinking from different researchers' views, the relationship between critical thinking and education, the influence of teaching approaches on critical thinking, and the different views of critical thinking from different cultures. Moreover, the chapter will provide the philosophy behind critical thinking. In Chapter 3, the methodology that will be used in the study will be described. Chapter 4 will provide the results of the study. Finally, in Chapter 5, the results reported in Chapter 4 will be discussed and implications of the study and recommendations for future researches will be offered.

# CHAPTER 2

## LITERATURE REVIEW

Critical thinking is considered as an essential skill for teachers to process and teach, and for students to learn. In the 21st Century, universities and companies require critical thinking skills, which are crucial skills (Al Ghamdi & Deraney, 2013), owing to their relationship with creative thinking. Critical thinking helps people process arguments, discuss issues and analyze concepts in order to develop creative and new concepts (Forshaw, 2012; Paul & Elder, 2005).

It is important to teach students critical thinking because this will motivate them to be purposeful, self- regulated and autonomous thinkers (Behar-Horenstein & Niu, 2011). Behar-Horenstein and Niu (2011) stated that, "Using critical thinking helps students evaluate the arguments of others and their own; resolve conflicts and come to well-reasoned resolutions to complex problems" (p.25). Schools and universities should emphasize critical thinking in order to promote nations' education and to help citizens contribute to society in a critical manner (Behar-Horenstein & Niu, 2011; Dam & Volman, 2004). However, methods of teaching critical thinking are still being discussed and some experts prefer to teach critical thinking separately, as a stand- alone course, while others prefer to teach it as in an integrated course within the curriculum. The results of teaching critical thinking within the curriculum or as a stand-alone course are still not definitive (Behar-Horenstein & Niu, 2011).

Schools and education impact students' thinking. Teachers also play an important role in students' thinking. Some teachers encourage students to think deeply, more than

others. Teaching critical thinking is teachers' responsibility. Teachers could discuss ideas, errors and experiments in order to foster critical thinking. However, incorporating critical thinking into the curriculum is the hardest part of teaching critical thinking (Kurfiss, 1988).

The goal of education determines the importance of the critical thinking process. If the purpose of education is just to teach basic facts, then critical thinking is unimportant in this instance. However, if the purpose of education is to teach reasoning skills and deep understanding of the subject, then critical thinking needs to be emphasized (Kurfiss, 1988).

The idea of developing students' critical thinking has been connected to the teachers and instructors who work at schools or colleges that are concerned with critical thinking. These schools and colleges are usually looking to develop students' thinking and to add value to the education system (Pithers & Soden, 2010). Teaching approaches consider thinking critically as a most important intellectual activity that helps students with decision making and independent thinking (Howie, 2011). Lack of understanding of critical thinking leads to confusion as to what is logical of thinking. Overall, teaching and evaluating of critical thinking are widely overlooked (Pithers & Soden, 2000).

This chapter provides a review of literature about critical thinking and consists of five sections. The first will provide a definition and explanation of critical thinking. In the second, the relationship between critical thinking and education will be explored. The connection between critical thinking and teaching will be the focus of section three. The impact of culture on critical thinking will be emphasized in section four. The fifth section

will explore the connection between philosophy and critical thinking. The focus of this study is on critical thinking in the context of Saudi Arabian higher education. The chapter will conclude with facts from Saudi Arabian researchers as well as questions that will be explored and discussed in Chapter 3.

## Definition and Characteristics of Critical Thinking

The term critical thinking has been discussed and debated in recent years. The definition and assessment of critical thinking are connected together. Definition of critical thinking determines how could be measured. Earlier philosophers (Baron, 1985; Ennis, 1962; McPeck, 1981) note that, as a "cognitive component …critical thinking is a skill, a set of skill, a mental procedure, or simply is rationality" (as cited on Ku, 2009.p.71). These definitions are more about thinking methods instead of implication of thoughts. However, these definitions have developed through the years. Ennis (as cited on Ku, 2009, p.71) has developed his definition from "correct assessing of statement" to "reasonable, reflective thinking that is focused upon deciding what to believe and do" (Ennis, 1991.p.474). In his second definition, he linked the critical thinking with dispositions. Therefore, the concept of measuring critical thinking must be reviewed based on the recent definitions of critical thinking. The recent definitions determine students' performance based on cognitive and dispositional components. "In particular, the need for critical thinking measurement to account for individuals' inclination to use appropriate thinking skills at appropriate situation ought to be emphasized" (Ku, 2009.p.71).

Since the evolution of various critical thinking definitions, many assessment tests have been developed to measure students' and teachers' critical thinking skills. Some examples are, Waston- Glaser Critical Thinking Appraisal, Ennis- Weir Critical Thinking Essay Test and California Critical Thinking Skills Test. Ku (2009) all of which have illustrated the importance of critical thinking. First, in order to know the efficiency of any program that improves critical thinking skills, researchers should use proper measurement tests to assess students' critical thinking skills. Second, precise critical thinking assessment is important to facilitate teachers' requirement, improve students' learning, provide suggestions to improve students' skills and assists teachers to renew their teaching plans and methods. (Ku, 2009).

Many authors and writers describe critical thinking as a cognitive activity. Authors define it with different characteristics. Earlier philosophers focus on the outcome of the cognitive process involved (Grant, 1988 & McPeck, 1981). Also, most of the definitions link critical thinking with skills and dispositions (Ennis, 1991; Halpern, 1999; Pithers & Soden, 2000) while others connect it with analysis, evaluation and creativity (Kurfiss, 1988; Paul & Elder, 2008). See Table #1.

Ennis (1991), in his definition, clarified that there is a difference between skills and attitude (dispositions). Skills are based on asking questions, analyzing the problem, thinking about the problems and inferring. The disposition, on the other hand, is based on the ability to maintain concentration on the issues and discussion. It is to be amenable to present reasons and clues through arguing and decisions and being willing to withhold judgment when the clues are deficient. It is the ability to make decisions or identify

problems. Paul also considered dispositions as important skills in his definition (Dam & Volman, 2004).

Table 1

*Definition of critical thinking term including main characteristics for each definition, arranged in chronological order.*

| Authors | Definition | Main Characteristics |
|---|---|---|
| Glaser (1941) P.5-6. | Critical thinking contains three main components "First, an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experience. Second, knowledge of the methods of logical inquiry and reasoning. Three, some skills on applying those methods" (as cited on Bataineh &Alazzi, 2009, p.58). | Attitude and disposition on a thoughtful way to process the problem; have knowledge and skills of logical inquiry. |
| McPeck (1981) | Critical thinking is "Learning to think critically is in large measure learning to know when to question something, and what sorts of questions to ask, not just any questions will do" (p.7). | Deep understanding and skepticism to the subject and when the person knows how to ask about reflective skepticism |
| Kurfiss (1988) | Critical thinking is "An investigation whose purpose is to explore a situation, phenomenon, question, or problem to arrive at hypothesis or conclusion about it that integrates all available information and that can therefore convincingly justify" (p.2). | Outcome of the cognitive process such as analysis, evaluation and creativity. |
| Ennis (1991) | Critical thinking as "reasonable, reflective thinking that is focused upon deciding what to believe and do" (p.474). | Using Skills and disposition in good manner. |
| Halpern (1999) | Critical thinking as "evaluating the outcomes of our thought processes- how good decision is or how well a problem solved" (p.70). | Using Skills and disposition in good manner. |

Table continues

| Authors | Definition | Main Characteristics |
|---|---|---|
| Pithers & Soden (2000) | "Critical thinking involves abilities in addition to certain disposition. For example, identifying problem, clarifying and focusing the problem, analyzing, understanding and making inferences, inductive and deductive logic, judging the validity and reliability of the assumption and sources data and information available" (p.239). | Using Skills and disposition in good manner. |
| Fisher (2007) P.13 | Critical thinking is "A kind of evaluative thinking which involves both criticism and creative thinking and which is particularly concerned with the quality of reasoning and argument which is presented in support of a belief or a course action" (as cited in Al-Wehaibi, 2012, p.193). | Analysis, evaluation and creativity. |
| Paul & Elder (2008) | Critical thinking as "the art of analyzing and evaluating thinking with a view to improving it" (p.2). | Analysis, evaluation and creativity. |

Similary, Miri, David, and Uri (2007) divided critical thinking into two catgories, which include skills and disposition. These skills are based on analyzing, evaluating, asking questions and interpreting. Dispositions are based on students' thinking, decision making and problems solving. Students could have skills of critical thinking and yet fail to apply them in the subjects. That's mean, they have weak critical thinking dispostion (Bataineh & Alazzi, 2009). Most of the researchers admitted that critical thinking includes skills and dispositions (Ennis, 1991; Halpern, 1999; Paul & Elder, 2008; Pithers & Soden, 2000). Skills and dispositions are central in critical thinking definitions. Skills are considered the most important component in critical thinking but dispositions are considered as supportive components for these skills. All these skills and dispositions can

be promoted through practice.

In developing best definitions on this study, the researcher will rely on definitions of Glaser (1941; as cited in Bataineh & Alazzi, 2009, p.58) and Fisher (2007; as cited in Al-Wehaibi, 2012, p.193). Both of these definitions contained the main components of critical thinking which are analysis, evaluation and creativity. In other words, critical thinking is a skill that helps to identify problems in arguments through analyzing and evaluating their underlying assumptions.

The following section will explore the relationship between critical thinking and education.

## Critical Thinking and Education

The concept of education is different today than before. In the past, traditional education system was focused on transferring information to students who remained passive recipients while all information was developed by the teachers (Servage, 2008). For instance, recall of information and rote learning are examples of traditional education and low order thinking skills; while analyzing, evaluating, dissection and critical thinking are examples of transformative education and higher order thinking skills. Eventually, researchers started to reform traditional teaching approaches into transformative ones. They demanded that teachers change their teaching strategies from traditional ways of emphasis on text book and rote learning, to transformative and constructive theory that emphasizes exploration, analyzing and higher order thinking skills (Miri et al., 2007).

Critical thinking has the potential to raise new beliefs and opinions to discover new theories or concepts (Mezirow, 2003). More than thirty years ago, Mezirow

introduced transformative learning which he defined as “Learning that transforms problematic frames of references- sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets)- to make them more inclusive, discriminating, open, reflective, and emotionally able to change” (p.58). Transformative learning can be seen from different views. Mezirow’s focuses on the mentality of reasoning and rationality. He believes that reasoning and discussion are essential for transformative learning because they lead to higher order thinking skills (Servage, 2008), while traditional education leads to lower order thinking skills (Miri et al., 2007). Miri et al., (2007) stated that “the development of higher-order thinking skills, or higher order cognitive skills must be prominent in order to facilitate the transition of students’ knowledge and skills into responsible action, regardless of their particular future role in society” (p.354). Improving higher order thinking skills is essential to students for analyzing information, asking questions and making decisions using rational thinking (Miri et al., 2007) and by this way, transformative learning achieves its goal.

Transformative learning encompasses critical thinking that might be done collectively as a group argument and individually. Transformative learning requires higher order thinking skills which entail critical thinking. Examples of this are discussing, arguing, analyzing with justifying and proving one’s perspective. Transformative learning is a metacognitive reasoning which involves higher order thinking skills. Also, it concentrates on critical thinking, reasoning judgment, assumption, justifying, frames of reference and results (Mezirow, 2003).

Higher order thinking skills include learning experiences, such as evaluation, analysis, critical questions, predictions, inferences as well as critical and creative thinking. To enhance higher order thinking skills in the school setting, teachers must promote critical and creative thinking in the class and provide ample opportunities for students to practice higher order thinking skills. Promoting higher order thinking skills in the class helps students to evaluate the information and to use their knowledge to discuss the results as well as to develop critical thinking (Miri et al., 2007). Critical thinking indicates that students are thinking in a more sophisticated way about the subject (Pithers & Soden, 2000).

"Higher order thinking corresponds with the taxonomy of Bloom, Englehart, Furst, Hill and Krathwohl (1956), overlapping levels above comprehension" (as cited in Miri et al., 2007, p.355). Bloom's taxonomy encompasses a six-level classification system. This system is used to monitor students' attitudes in order to evaluate students' achievement. This classification is shifting from low order thinking skills to higher order thinking skills. Bloom's taxonomy classified these as knowledge, comprehension, application, analysis, synthesis and evaluation (Athanassiou et al., 2003).

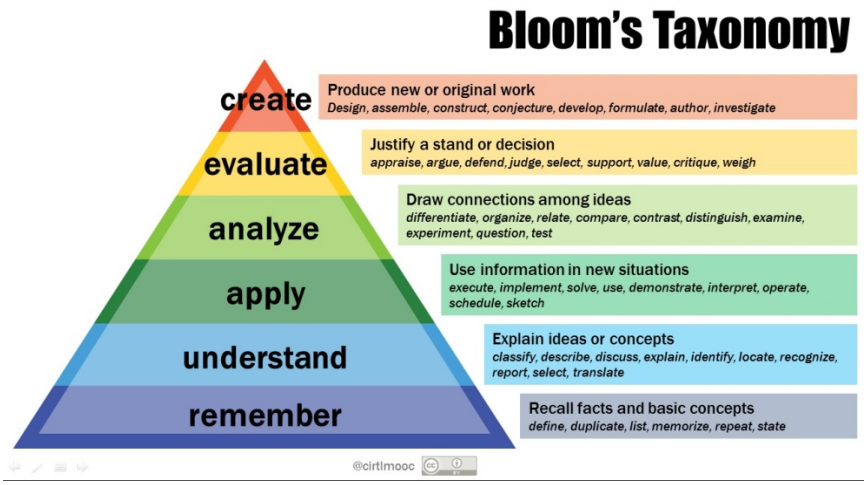


*Figure 1*. Bloom's Taxonomy Hierarchy. Reprinted from "Developing Learning Objectives for Accounting Ethics Using Bloom's Taxonomy, "by Linda A Kidwell, Dann G. Fisher, Robert L. Braun, Diane L. Swanson. *Accounting Education: an international journal*, *22*, p. 1, 44-65. Copyright 2013 by Taylor & Francis. Reprinted with permission.

Athanassiou et al., (2003) asserted that Bloom's taxonomy helps students to achieve deep understanding through critical thinking. In their experiment, they used a scaffolding device to assist the metacognitive process. Applying Bloom's taxonomy as a scaffolding device helps students evaluate their work. This method is challenging to students and they often feel that they used Bloom's taxonomy to support their level of understanding. Athanassiou et al., (2003) stated that there are two ways to use Bloom's taxonomy. The first is to "help students appreciate the conceptual richness of the material and where they are in their engagement with it as a self-assessment tool. The second serves as a feedback mechanism to help students appreciate the conceptual richness of their own work" (p.540). The emphasis in their experiments measured the impact of

using Bloom's taxonomy as a feedback mechanism and how this method improved critical thinking. In their study, they selected 2 undergraduate classes, Women, Minorities, and Diversity in the Workplace (WMD) and International Management (IM), with 21 students in each class. Both classes are for the junior/senior level. Researchers explained Bloom's taxonomy to students using assignments and class discussion. They gave students a checklist questioner to submit after a period of time. Also, they used repeated observation of the classes during one semester. The WMD class submitted their assignment twice during the semester while IM submitted their assignment four times during the semester. This study used quantitative and qualitative methods. They assessed students' achievements based on Bloom's taxonomy criteria (knowledge, comprehension, application, analysis, syntheses and evaluation). After they used Bloom's taxonomy system for one semester, they interpreted the results (Athanassiou et al., 2003). They found that understanding Bloom's taxonomy increased students' attention to high order thinking skills as well as sophistication in assignments. They noticed that the performance of the (IM) class decreased on Bloom's scale between the first and second observations. After several weeks of emphasis on Bloom's taxonomy method, students' performance highly increased. After this experiment, students stated that they could understand their work and evaluate their learning. They indicated that Bloom's taxonomy helped them understand the missing parts in their learning (Athanassiou et al., 2003).

They concluded that students who used Bloom's taxonomy in their education can evaluate their own work. Also, they understand which attitude is a reference to high order thinking skills and how they can use this attitude to improve their performance. So,

teaching Bloom's taxonomy helps students to boost their responsibility and confidence to support a student-centered classroom. This result indicated that knowledge is found by learners not by teachers, which helps learners shape and construct their knowledge (Athanassiou et al., 2003).

The term critical thinking involves metacognitive and self- regulation abilities. These abilities include comprehension, criticism, evaluation and decision-making. All these abilities and characteristics allow students to self- regulate and coordinate their learning methods and strategies (Pithers & Soden, 2000). Many authors indicated that metacognitive skills are important for critical thinking and should be taught at the schools and universities (Choy & Cheah, 2009; Dam & Volman, 2004; Miri et al., 2007; Pithers & Soden, 2000). The concept of critical thinking fails when students only focus on recalling information or using rote teaching (Dam & Volman, 2004; Miri et al., 2007). Kuhn (1999) stated that "A unifying dimension of this devlopement is that of thought becoming increasingly aware of itself and under the indivdual's control" (p.23). The three types of meta- knowing connected strongly to achieving critical thinking are metacognitive, metastratgic and epistemological (Kuhn,1999). These three types are elaborated below.

The development of metacognitive skills is fundamental to critical thinking. Revisiting the definition of critical thinking, it reflects how a person can analyse problems and how their response can be justified. The person who has metacognitive skills can justify his/her beliefs, opinions and theories. He/she knows what he/she believes, why he/she belives as well as he/she can explain to others his/her clues and

evidences (Kuhn,1999).

The second type of meta- knowing is metastratgeic skills which are key to critical thinking. People who have meta strategy skills could manage an evaluation of altranatives through time and different situations.They are not looking for the favored theory but they are looking for alternative theories and thinking from different prespectives (Kuhn,1999).

Third, the most important factor of critical thinking is the development of epistemology.Teachers and students should know why they need to study and think about theories to particpate and engage in the theories. Some teachers take the responsibility to teach courses and theories but they do not understand why they should teach these theories (Kuhn,1999). The aim of developing critical thinking is to assist students in metacognitive control of their own knowledge (Kuhn,1999).

In the following section, the relathionship of teaching and critical thinking is explored.

## Critical Thinking and Teaching

Teaching critical thinking is based on the teacher's perspective and depth of understanding of the subject matter and how they can represent this understanding to the students through instructional activities (Grant, 1988).

Critical thinking is a teachable skill through thoughtful personal consciousness and through offering students' ample opportunities to practice critical thinking skills inside and outside of class. However, giving students critical thinking assignments is not enough to promote critical thinking. Teachers should model critical thinking and set up

their classroom atmosphere to encourage students to think critically (McPeck, 1981). Teachers should be aware of different opportunities to spur critical thinking and link the age of students with content of the subject (Langer, 1997). This would allow students to look from different perspectives, find problems, and discuss results or suggestions and link information together. This would enhance and bolster students' perspectives, views and thinking (Pithers & Soden, 2000).

There are two different teaching approaches regarding teaching critical thinking. The first approach is embedding critical thinking within course content. The second approach is teaching critical thinking as a stand-alone subject (Behar- Horenstein & Niu, 2011). Based on Williams and Worth (2001) survey results, it was concluded that " Specialized courses in critical thinking have generally been successful in promoting critical thinking skill, but recent attempts to infuse critical thinking activities into subject-matter courses have yielded marginal result" ( as cited on Hatcher,2006, p.247). However, teachers feel that it is really challanging to integrate critical thinking skills within the course (Choy & Cheah, 2009; Miri et al., 2007). Also, Miri et al., (2007) pointed out that two teachers out of every ten teachers in their study were interested in integrating high order thinking skills in the classroom. Solon (2006) pointed out that some teachers complained that there is no time to integrate critical thinking skills within their classes because students will take focus away from the course content.Hence, teachers avoid teaching critical thinking skills. However,Solon's highly recommended an integrated approache (as cited on Hatcher,2006).

Al Ghamdi and Deraney (2013) investigated in her study how students used critical thinking skills after they passed a stand- alone course in their freshmen year in Saudi Arabia. The number of participants in her study was 118 female students. These students studied different fields (business, computer science and interior design). All students enrolled in critical thinking courses during their freshmen year after they finished their preparatory year at Dammam Universit in Saudi Arabia. Most participants were Saudi nationality and their native languge was Arabic. All students had different English proficiency levels. Al Ghamdi and Deraney (2013) used NCTT(National Center for teaching thinking) instrument to assess and evaluate the results. She used pre/post tests in week 7 and week 15 to compare the result and evaluate the effectiveness of the stand-alone course. They measured the improvement in four different domains ( argument analysis and assesment, causal explanation, predication of future event, reliabilty of sources). After that, they compared pre/post test in all these domains. Al Ghamdi and Deraney (2013) found that students improvement was slightly increased in all domains. The highest score of improvement was 2.3 out of 5 which is considered low. The most considerable improvement was on argument analysis and assessment. Reliabilty of sources was the lowest domain which showed no improvement during the study.

Al Ghamdi and Deraney (2013) found that critical thinking is not useful when taught as a stand- alone course. Although there was an improvement in students' thinking, the skills acquisition did not improve in all educational field. The result of the study did not indicated that there was a considerable improvement in overall critical

thinking skills. She therefore stated that integrating critical thinking in courses might be more useful than teaching them as stand-alone course.

According to Hatcher (2006), there are three different conceptions to the term "integrated approaches."

> The first conception is to teach only those critical skills that are specific to a discipline in a standerd course in a particular discipline. For example, one could imagine a course in critical approaches to literature being thought of as a critical thinking course taught by the English program. The second conception is to integrate instruction in the generic logical skills, those usually found in a typical informal logic/ critical thinking textbook,with courses that provide instruction in other generic academic skills such as oral or written communication - skills that have value and application across the curriculum. For example, one might include instruction in logic and argumentation in a speech communication course. The third conception is to identify a set of generic critical thinking skills and show students how these apply in a specific area of the course. For example, one might shows how the standards of deductive and inductive logic help us evaluate studies in the social sciences or controlled experiments in the science(p.248).

Hatcher (2006) clarified sequences studies that show integrated approach is preferred than stand-alone approach. This was achieved by comparing the result of integrated approach group and stand-alone approach group. Hatchers' study confirmed the result of Pascarella and Terenzini (2005) data which compared the results of Baker University from 1990 to 1996 ( As cited on Hatcher, 2006) . His article also contained a longevity study of freshman to senior undergraduate students who study critical thinking as an integrated approach through 1996 to 2005. The integrated approach that is used in Hatcher's article is to teach students critical thinking skills that are available in a critical thinking textbook and to illustrate how they can use these skills in other courses.

His study included evidence that confirmed the effectiveness of integrated approach theough a 15 year study (1990-2005). This study was done at Baker University.

This university has three required liberal arts programs that are designed to help students integrate critical thinking skills in all their classes. These courses are two-semester freshman sequences and a senior capstone seminar. The freshman courses are " Critical Thinking and Effective Writing,"required for the first semster, and "Ideas and Exposition," required for the second semester. Both courses are different than traditional critical thinking courses. The first course started with discussion and reading social problems. After that, the instructor asked students to summarize these problems and evalute the argument with using their knowledge to develop strong arguments in the paper. The second course emphasized using the same strategies with five sets of reading and writing five critical papers. All writing papers nedeed to include the basic parts of criticle thinking which are thesis, counterarguments, response and conclusion. While in the first course all students used the same texts, in the second course the texts were choosen by instructor. Both these courses emphasized writing argumentative papers. The third course a senior capstone seminar, "Science, Tecnology, and Human Value." The instructor asked students to choose a public policy case that was brought by scientific or technological developments and then write 15- 20 pages a research papers to argue a specific issue. The most important criterias for the research was to write strong arguments and responses to counterarguments to the proposed issue (Hatcher,2006).

Ennis-Weir Critical Thinking Essay Test is used to assess criteria of criticle thinking. This exam asked students to reply with an eight- paragraphs letter to the editior. Students were asked to write weather the argumentative letter was good or bad, while supporting their answers with good reasoning. This test was given to freshman

students in the first week each fall semester to measure their skills. Also, it was given to students another time after they finished the second course, which was given during the last week of the spring semester. When the freshmen became seniors, they were given the test to mesure the critical thinking skills that they gained over four years (Hatcher,2006).

Pascarella and Terenzini (2005, p. 157), wrote a longitudinal study that sought to measure critical thinking skills using the Ennis-Weir Critical Thinking Essay Test (as cited on Hatcher,2006).

They studied three main comparison. First, they compared the Ennis-Weir Critical Thinking Essay Test results of freshman and senior level from 1995-1999. They found that there was a higher improvement on students' skills after they were given the three courses.Second, they compared the results with other universities who have standard logic classes and stand-alone critical thinking courses. The result of the Ennis-Weir Critical Thinking Essay was low compared with Baker University. Third, they compared the scores of freshman studnts that given Ennis-Weir Critical Thinking Essay in the first week of the fall semster and last week of the spring semster from 1991-1996. Results showed that students highly improved their critical thinking skills after the two freshman courses. (As cited on Hatcher,2006).

Hatcher (2006) had a strong argument about Pascarella and Terenzini studies. He argued that " why the freshman in the intgrated, two-semester sequence did so much better on the Ennis-Weir Critical Thinking Essay exam than the comparision groups that were taking more traditional classes in logic and critical thinking" (Hatcher, 2006, p.258). He found three possibilities. First, repetition and simplicity of the material for the two-

semester sequence helped students practice the application and improve their skills. While, in comparison, the traditional stand- alone course used for one-semester had too much material to cover during one semester. Second, consumed time on the integrated approach was more than consumed time on traditional stand-alone approch which gave the students more time to practice and understand the material. Third, the integrated approach concentrated on logical thinking and strong argumentative papers while the stand-alone approach emphasized on teaching students what is critical thinking (Hatcher,2006).

Morover, Hatcher (2006) provides another proof that integrated approach is better than stand-alone approach. From 1996 to 2005 Baker University decided to change Ennis-Weir Critical Thinking Essay Test to California Critical Thinking Skills Test (CCTST). This test is easier to evaluate the result and it is available in 3 forms with seven different languages. It includes 34 multiple choice that help evaluate critical thinking skills. The (CCTST) used the same pre/post test method as Ennis-Weir Critical Thinking Essay Test on freshmen and senior students.

After that , Hatcher (2006) analysed the data for 9 years from 1996-2005 and he came up with the results. First, he compared the freshmen pre/post tests results from 1997-2005. The result of the tests was highly improved, after two-semester integrated approach with mean gain .57%. Second, He compared the results of freshmen and senior tests from 2000-2004. The results were also highly promoted with mean gain .88%. Morover, he compared the results with other comparison groups from Hatcher 2004 study. University of Melburne, McMaster University and Monash University are

comparison groups. Baker University did slightly better than the comparison groups.This was because the University of Melburne and McMaster University used computer-assisted instruction to supplement the class-work. The positive gain showed that computer exercise in the classroom could help students develop critical thinking skills. Overall, these longevity studies indicated that integrated approach is much preferable and effective than traditional stand-alone approach.

VanDerZanden (2005) indicated the three main activities that he used in the classroom to enhance critical thinking skills in landscape construction course. He integrated three main strategies to help students use critical thinking. Case studies, researching, writing and presenting a landscape construction bid were used in his experiential group. He used this method in two universities which are Iowa State University and Oregon State University. Junior and senior students were targeted in this study. They were taking a four-credit course in both universities. This course was taken two times each week with 50 minutes lecture and 3 hours laboratory. He integrated the three main strategies in this course. The course assessment of the past four years to both universities improved. The average improvement for the students was 3.78 out of 4. This showed that integrated high order thinking skills in the classroom provide opportunity for students to learn deeply.

Undoubtedly, linking educational theories to teaching strategies is fundamental (Miri et al., 2007). Pithers and Soden (2000) discussed three fundamental steps that help teachers to expand critical thinking among students. First, change educational practice that is based on traditional method. There are many mistakes and beliefs that teachers

practice in class, which prevent students from thinking critically. For example, traditional instructor tends to believe that they know everything about course material and there is nothing to learn from their students. This belief is considered wrong in the critical thinking field. In critical thinking the educational instructor is still a learner who needs to learn new ideas from his/her students and other sources. Also, traditional instructors believe that students have to say the correct answers, while in the field of critical thinking, the importance is in analyzing and evaluating the correct answers (Pithers & Soden, 2000). The traditional method of education is not sufficient to prepare students for a challenging job in the future. However, Development teaching methods and integrated high order thinking skills in the course are more effective. (Miri et al., 2007). The Second step to enhance student's critical thinking is to encourage students to reflect on and analyze their ideas. For example, teachers could use a follow-up research. This will help students to analysis the idea, find similarities and differences, write assumptions and develop argument. Lastly, this lead students to discuss, negotiate and challenge their own ideas as well as teachers' ideas, which is a primary aim of critical thinking (Pithers & Soden, 2000).

Miri et al., (2007) stated the three basic strategies to promoting higher order thinking skills in the classroom: Dealing in class with real- world cases, encouraging open-ended class discussion and fostering inquiry-oriented experiments. This is illustrated in the figure below and shows how these methods foster critical thinking among students.

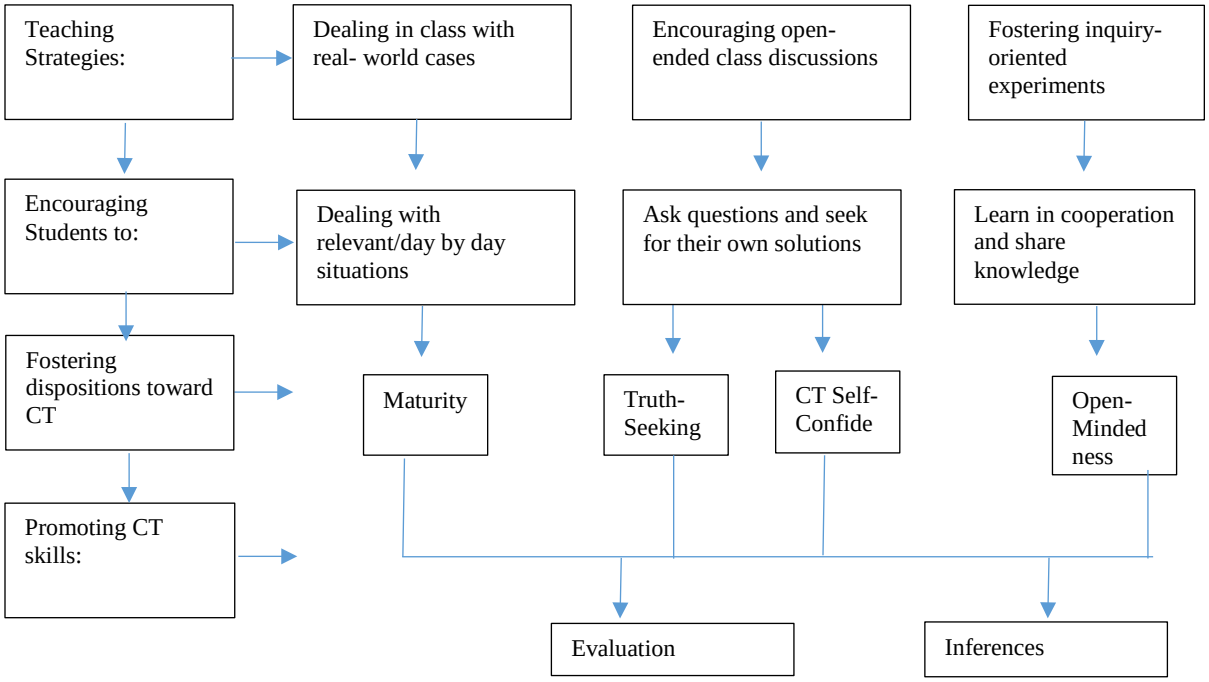


*Figure 2*. Teaching Strategies that are targeted at Promoting Higher-Order Thinking Skills and their Impact on students' Critical Thinking Capabilities. Reprinted from "Purposely Teaching for the Promotion of Higher- Order Thinking Skills: A case of Critical Thinking," by B. Miri, B. David & Z. Uri, *Research in Science Education*, *37*, p. 372. Copyright 2007 by Springer Link. Reprinted with permission.

Recent researchers (Kember, 1997; Miri et al., 2007; Pithers & Soden, 2000) focused on teachers' conceptions to develop critical thinking and maintain the strong connection between teachers' conception of critical thinking and how they are teaching it. Teachers who follow guidelines and use traditional educational strategies are not likely to develop students' abilities compared to those who use integrated approaches. According to Kember (1997) "the conception of teaching can be summarized in terms of two broad orientations labelled teacher-centered/content- oriented and students- centered /learning-oriented" (p.264). The teacher- centered orientation focuses on conveying knowledge

from the teacher to students. However, the student- centered orientation focused on enhancing students' understanding and developing students' thinking by dissection, analyzing and negotiation. Obviously, student- centered orientation enhances critical thinking. It is important to direct teachers to this orientation in order to develop students understanding. However, students' conception is also important to come up with best understanding to the subject. Students also should understand that they have to think, discuss, interpret and analyze the data (Kember, 1997).

Miri et al., (2007) found that incorporating higher –order thinking skills lead to success. Teachers should use more advanced strategies that help students to succeed in the future. In the following section the impact of culture on critical thinking is discussed.

## The Impact of Culture

People think critically, not just in schools and academic sitting. This behavior is influenced in all life, such as, in the workplace, with friends and family. Pithers and Soden (2000) showed that culture influences students' critical thinking. Actually, sensitivity of culture is an important factor that affect critical thinking. People who are raised to follow particular beliefs, attitudes and habits are less likely to think critically in all life domains. Culture and environment of students affect students' thinking. For example, cultural beliefs, cultural knowledge, art, law and moral of culture, can impact students critical thinking. According to Nisbett and Norenzayan (2002, p.3) and Nisbett,Peng and Norenzayan (2001, p.291) " The cultural differences that exist among different cultures affect not only their beliefs about specific aspects of the world but also impacts on the nature of their cognitive process. Cognitive process emerges from

practical activity that is culturally constrained and historically developing" (as cited on Grosser & Lombard, 2008, p.1367). Cognition has a different view from different cultures. This is why cultural differences lead to different cultural aspects, beliefs and social activities which drive to different thought that is identical with specific culture. As a result, teachers have different teaching strategies because they have different knowledge from their cultural history and view. So, even when the cognitive process is similar in all culture, there are different strategies to learn and solve problems for each culture (Grosser & Lombard, 2008).

Grosser and Lombard (2008) indicated in his literature review that African people still enjoy the traditional lifestyle. African schools teach students to be collectively interdependence instead of being individual independence. Students grow up depending on their own knowledge rather than abstract logic arguments. According to Grosser and Lombard (2008) "The most important criteria in South African culture is frame switching which means internalization of two cultures" (p.1369). In their study, they examined integrated two-cultures (Western Culture) in the schools and (African Culture) as a home culture. Since Western Culture rely on interferences and logic arguments, they examined the result of internalization of the two cultures. They conducted a quantitative study where 420 teachers enrolled to complete 4years Bachelor of Education degree. Students participated from two different cultures; 46 from African culture and 68 from Western culture. All students had English proficiency. The researchers used Watson-Glaser Critical Thinking Appraisal to measures critical thinking skills because of lack of standardized test in South Africa to measure critical thinking skills. The result showed

that Western culture students achieved highly better in the critical thinking test with 0.05 as well as the 0.01 than African culture students'. Also, when Grosser and Lombard (2008) compared Western culture students with norm groups, they found that western students are still having difficulties to practice critical thinking skills sufficiently. Also, they examined how the pre-service teachers are functioning to teach critical thinking in African culture and Western culture and compared with norm groups. Both African and Western culture pre-service teachers represented a lack of implement critical thinking skills. They concluded their study that when prospective and practicing teachers are unable to implement critical thinking skills in the class, this mean that they could not transfer it to their students. They indicated in the literature review that African culture lack of critical thinking skills and this is supported by the poor result of practicing critical thinking skills by the group pre-service teachers in African culture.

In western countries, teaching strategies are different. Since 1950s, Philosophy has been considered as a foundation to education at universities. Universities that offered Philosophy courses were consider as the best universities. Australian universities adapted their educational system from the British universities and modeled it to their system that considered Philosophy as a foundational discipline. Adapted Philosophy courses emphasized, logic, epistemology, metacognition and ethics. Because critical Thinking is a basic technique to developing these skills, it was important to incorporate critical thinking (Egege & Kutieleh, 2004).

Western philosophical thought came from classical Greek heritage, and moved specifically from the oldest Greek philosopher, Socrates, Plato and Aristotle. Greek

philosophy was reviewed by Jesuits in middle ages in Europe. The Greek philosophy is based on competitive, arguing, logical thinking, critical analyzing and justifying the mathematics with clues and proof. British philosophers adapted the same philosophy in the 18th Century and started building upon it over the years (Egege & Kutieleh, 2004).

Australia, New Zealand, UK and USA emphasized learning generic competencies in schools and universities to enhance students' thinking skills and abilities that would prepare them for the future. Generic competencies include thinking critically, analytically, problem solving and working effectively in groups (Pithers & Soden, 2000). Generally, these countries rely on teachers' skills and competence to teach these competencies. Hence, teachers are considered as the main influencer shaping student's thinking (Pithers & Soden, 2000). However, South- East Asian students are also stereotyped as passive learners because their schools heavily focus on memorizing information instead of deep understanding and analyzing (Egege & Kutieleh, 2004).

In Saudi Arabia which is the context for the present study, debate in educational articles showed that students in Saudi Arabia lack exposure to critical thinking and teachers' lack responsibility to promote critical thinking skills in their students (Al Ghamdi & Deraney, 2013; Alwadai, 2014; Alwehaibi, 2012). Alawadai (2014) in his research discussed the perception of male Islamic teachers toward improving student' critical thinking skills in public elementary schools in Saudi Arabia. He used mixed method in his research to discover teachers' view toward critical thinking. The total participants in his research are 138 male Islamic teachers from southwestern region particularly for quantitative data and 10 participants for qualitative data. He classified his

study to five majors' important points. First, in regarding critical thinking definitions. Seventy four percent agreed that critical thinking includes analysis, synthesis and evaluation but 25% disagreed that critical thinking would help students enjoy their learning. Second point is regarding how the society influence critical thinking skills. Ninety six percent of the teachers reported that students in Saudi Arabia consider teachers and parents as "authority figures." The Saudi culture prevents arguing, debating or asking critical questions to teachers or parents. This obstacle is supported by two opinions from people. First, teachers and parents mostly installed in students' religious beliefs, ethics and morality without giving students a chance to discuss. Second, developing critical thinking is feared to affect the statues of security in Saudi society. As a result, most students grow up without thinking critically because they think this is a disrespectful attitude. Most students are less motivated and are likely to perform easy unchallenged tasks instead of challenging ones. This view is supported by the finding that 85% of teachers strongly agree that Saudi society does not concentrate on developing critical thinking skills (Alwadai, 2014). Third point is regarding students' interest in critical thinking. Alwadai (2014) found 96% teachers indicated that elementary students lack experiencing critical thinking in the classroom. Moreover, 79% respondents' note that students are not interested enough to practice critical thinking skills. They prefer easy tasks instead of complicated tasks. Fourth, how teaching methods influence critical thinking skills. Seventy two percent teachers agreed that they are not motivating students to use critical thinking skills and 98% said that they do not have time to answer students' questions, as well as they do not want to receive any questions that they not answer it or

have unclear answers for it. Last point showed effectiveness of class structure. Seventy four percent teachers are frustrated to teach critical thinking because schools and classrooms are not designed well to teach students critical thinking. For example, lack of materials, library resources, internet network and access, and huge classrooms with lack of safety systems in schools. Teachers indicated that Ministry of Education must provide the necessary materials to improve learning and teaching techniques (Alwadai, 2014). Similarly, Alwehaibi (2012), indicated that most teachers in Saudi universities not aware of the positive impact of critical thinking skills.

## Philosophy of Critical Thinking

Philosophy approach is reflecting of historic philosophy in term of thinking (Paul, 1993). Socrates was the first philosopher who emphasized of the term critical thinking. He highly encouraged his students to ask questions before agreeing with any ideas and beliefs.

Plato followed Socrates philosophy through the years (Paul et al., 1997). The Socrates' method is the center of critical and reflective thinking. His method foster argument in the classroom which helps students understand the materials (Forshaw, 2012). The philosophy of critical thinking is related to "strong sense" critical thinking. The idea of strong sense is derived from the Socratic approach which is to lead to deep understanding and reflective life. Instead of using rote learning, students should be encouraged to discuss the ideas and use reflective learning (Paul, 1993). The word philosophy comes from the ancient Greek which means love (philos) and wisdom (Sophia) "love of wisdom" (Ortiz, 2007).

Philosophical knowledge provides a reasonable method for teachers. It helps teachers and students to define theories and assumptions. Also, it provides language for educational argument (Jordan, Carlile & Stack, 2008). Ortiz (2007) stated that "the study of philosophy develops abilities to distinguish good and bad reasoning, to develop and defend one's own ideas through arguments and think critically" (p.1). The description of philosophical thinking can be categorized into three overlapping senses of philosophy. First, philosophy as a field of study. Second, philosophy is a model of thinking. Third, philosophy is a framework of thinking (Paul, 1993). In this section, the researcher will emphasize philosophy as a field of study.

Philosophy field contributes to education that contributes to critical thinking. It encourages debate and argument in the classroom, provides sources to challenge ideas and theories, examines educational goals and methods, promotes education with deep intellectual roots, connects new theories with traditional concepts, develops students experience and assists students to open- mindedness dissection by elaborating different perspectives (Jordan et al., 2008).

To translate philosophical approach to the classroom, there are two basic requirements. First, connecting theory with practice by using different methods and materials, such as, video tapes, presentations or handbooks. Second, training teachers to use their philosophical thinking and model it to students in the classroom (Paul, 1993). The philosophically - oriented teachers want students to think critically and analytically about the curriculum. This requires a deep understanding of each idea and allows questions, negotiations, rejections and arguments of ideas. This helps students to integrate

their ideas within the curriculum. Implementing philosophy approach in the classroom needs both time and effort from teachers. Lack of experience and knowledge of teachers could prevent achievement of philosophy's goal (Paul, 1993).

Philosophers believe that the field of philosophy improves critical thinking. However, researchers are still discussing this issue to find how the field of philosophy contributes to critical thinking (Ortiz, 2007).

Ortiz (2007) indicated that there is a deficiency of research regarding contributions of philosophy to critical thinking. In (2007) Ortiz discussed three basic questions on his study: "Does Philosophy improve critical thinking skills? Does Philosophy improve critical thinking over and above university education in general? And do critical thinking courses as such improve critical thinking skills more than philosophy or university education in general?" (p.52).

Ortiz (2007) found fifty –two studies that met research standards. These studies aimed to investigate the two independent variables which are teaching philosophy and teaching critical thinking over different intervals times. These two independent variables are identical with Ortiz independent variables. The differences between these variables were classified to seven groups for the studies. A single semester was selected from each study to compare the result. He presented a quantitative study with a Meta -analysis method about undergraduate studies to collect data. He classified the studies into the following seven groups to meet research requirements:

1- Courses offered by philosophy departments consisting of formal instruction in "pure philosophy course" which is Anglo-American analytic philosophy (Pure Phil).
2- Critical thinking courses offered by philosophy departments with no instruction in argument mapping (Phil CT No AM).
3- Critical thinking courses offered by philosophy departments with some instruction in argument mapping (Phil CT- AM).
4- Critical thinking courses offered by philosophy departments with lots of argument mapping practice (Phil LAMP).
5- Courses offered by non-philosophy departments and wholly dedicated to explicit instruction in critical thinking (No Phil,Ded-CT).
6- Courses offered by non-philosophy departments with some form of conventional critical thinking instruction embedded (No Phil,Some-CT).
7- Courses offered by non-philosophy departments with no special attempts being made to cultivate critical thinking skills (No Phil,NoCT).

Ortiz (2007) compared all these groups to find out associations among these groups. He stated that there must differentiation between critical thinking courses taught in philosophy departments and critical thinking courses taught in other departments in order to understand the effectiveness of the philosophical approach. He found that studying critical thinking with pure philosophy course improves critical thinking but the differences between studying critical thinking in the philosophy field, or with any subject, is not statically significant. However, there is a major improvement in critical thinking

skills when using lots of argument mapping practice strategies in the field of philosophy (Group #4) than studying critical thinking in other departments or as pure philosophy (group #1). He found a considerable difference between studying critical thinking with a philosophy department and in other departments. Students could improve their critical thinking skills with philosophy department more than other departments. Moreover, he found a large difference when he compared group 1 and with group 2 and 3. He found that students could promote their critical thinking skills with argument mapping more than pure philosophy course.

Ortiz (2007) summarized his result of Meta-Analysis with these finding. Anglo-American analytic philosophy is not improving critical thinking skills compared with other critical thinking skills. Similarly, traditional critical thinking course is not improving critical thinking skills. The best course that improves critical thinking skills is the course with lots of argument mapping, offered by philosophy department (Phil LAMP). Argument mapping is a superior way to improve critical thinking skills.

Finally, Ortiz (2007) concluded his research with three main results. First, improving critical thinking in philosophy field is the same with studying critical thinking in other academic disciplines. Second, he stated that “studying philosophy appears less effective than studying critical thinking on its own right, although the evidence is not altogether conclusively” (p.90). Third, using philosophy is less effective in improving critical thinking skills than using philosophy with lots of argument mapping practice (LAMP).

Using (LAMP) with philosophy field drove to dramatically best result than critical thinking courses, philosophy or other subject, but there is a lack of research about (LAMP) outside philosophy departments.

## Conclusion

After a literature review, it is clear that developing critical thinking is important to students' future. Researchers indicated that students and teachers lack understanding of critical thinking term in Saudi Arabia (Al Ghamdi & Deraney, 2013; Alwadai, 2014; Alwehaibi, 2012). As a result, Alwadai (2014) indicated in his research that there is a need to study female instructors' perceptions toward critical thinking in different fields. The purpose of this study is to examine female instructors' perceptions toward critical thinking in higher education. However, due to a lack of female Saudi instructors in universities, the participants of this study are not citizen.

# CHAPTER 3

# METHODOLOGY

The goal of this study is to examine Interior Design teachers' perspectives toward critical thinking, how they implement it in their classes, and the potential obstacles they face. Moreover, the study seeks to discover effective methods and strategies that teachers can use to promote students' critical thinking. More specifically, this study will investigate the following research questions:

1- What are female Interior Design instructors' perceptions toward critical thinking? Do they teach critical thinking skills in the classes? If so, how do they do it?

2- What are the main factors that help or prevent female Interior Design instructors from teaching critical thinking in their classes?

3- Does the Ministry of Education in Saudi Arabia require instructors to teach critical thinking? If so, how closely is that requirement followed by the instructors?

This research used a qualitative design. Semi-structured interviews were used to collect data about Interior Design instructors' perception toward critical thinking, strategies they use in their classes, and the barriers they encounter when teaching critical thinking. In this chapter, a description of the participants, instruments, and procedure used in this research are provided. In addition, the procedure and analyzing process will be described.

## Participants

The participants of the study were female faculty members from Interior Design department, and they were drawn from different universities in Saudi Arabia, particularly, from the Eastern Province. Five female participants were selected from two different universities. The universities are: (1) Jubail University College (2) Imam Abdulrahman Bain Faisal University. Both these universities have Interior Design departments.

Universities in Saudi Arabia employ none-Saudi nationals, due the lack of female Saudi instructors and professors. So, the participants were non- Saudi. Moreover, the participants' aged between 35 to 60 years old and had long experience in teaching in the universities. Two participants had Ph.D. degrees and the other three had master's degrees.

## Instruments

In this study, three questionnaires were used to collect data. Questionnaires were introduced to the participants via face-to-face interview or sent through E-mail if needed. After receiving the approval from the Human Subject Review (Institutional Review Board form) at University of Northern Iowa, the researcher sent e-mails to Saudi universities to get approval to conduct the study. The researcher explained the purpose of the research and provided official documentation that confirmed that she was a graduate student at the University of Northern Iowa. After receiving the approval from universities in Saudi Arabia, the researcher sent an introductory letter through email (Appendix A) to universities. After that, a semi-structured interview scheduled and conducted with each individual participant. The semi- structured interview consisted of questions that helped understand interviewees' perceptions about critical thinking. According to Willig (2013),

it is “important to reflect on the meaning and experience of the interview for both interviewer and interviewee, and to take care not to assume that the interviewee’s words are simple and direct reflections of their thoughts and feelings” (p.29). The interview questionnaires are contained in appendices C, D, and E.

Appendix C includes 7 questions about demographic data. Demographic data includes age, level of experience, nationality, and educational level. The questions focus on interviewees’ perception about critical thinking.

Appendix D includes 5 questions. The items are related to implementation of critical thinking in Saudi Arabian universities. The items also focus on finding out Saudi cultural values and attitudes toward critical thinking, as well as potential barriers to promoting critical thinking at the university level.

Appendix E consists of 6 items, and primarily focus on how critical thinking is valued by Interior Design departments. The items also consist of preferred teaching approaches among Interior Design instructors.

## Procedure

### Qualitative Research:

Qualitative research “is an umbrella term for a wide variety of approaches to and methods for the study of natural social life” (Saldana, 2011, p. 3). The data collected in qualitative research can be in the form of textual material and on video recordings of one’s human experience. The purpose of qualitative research is to understand personal insights, perception, opinions, beliefs and attitudes toward a particular phenomenon. Qualitative research can be used for “documentation of cultural observation, new insights

and understanding about individual and social complexity, evolution of effectiveness of programs or polices, artistic renderings of human meanings, and/or critique of existing social orders and the initiation of social justice" (Saldana, 2011, p. 4). There are five basic aspects to qualitative research. First, qualitative research occurs in naturalistic settings instead of continued experimental setting. Also, in qualitative research, multiple methods can be used to understand human behavior. The data collected in qualitative research is descriptive which focuses on words rather than numeric representations. Analysis of qualitative research is based on the evolving data. Finally, qualitative research emphasizes understanding people's perceptions, opinion, beliefs and attitude and interpretation of these behaviors (Marshall& Rossman, 2016).

Marshall and Rossman (2016) described six types of interpretive approaches including a focus on society and culture (ethnographic approach), a focus on individuals' lived experience (phenomenological approach), a focus on talk and text (Sociolinguistic approach), grounded theory approach, case studies and arts – informed and multimodal inquiry. This qualitative research will use case studies approach to collect and interpret data. Case studies offer the opportunity to understand the data more deeply, as well as help to connect the case with context (Marshall & Rossman, 2016).

Case Study Research:

"The case study is not itself a research method. Instead, it is an approach to the study of singular entities, which may involve the use of a wide range of diverse methods of data collection and analysis" (Willig, 2013, p. 100). While there are many definitions to case studies, this research emphasizes on particular definition which is "attention to

contextual data. Case study research takes a holistic approach, in that it considers the case within its context" (Willig, 2013, p. 101). This research study will use the instrumental case study to provide an in-depth account of instructors' perceptions about critical thinking. The researcher used Interior Design instructors as a group of case study in this research to compare the date. According to Willig (2013) "A case can be an organization, a city, a group of people, a community, a patient, a school, an intervention, even a nation state or an empire. It can be a situation, an incident or an experience" (p.100).

Procedures:

The research study was conducted after receiving approval from the Human Review at the University of Northern Iowa. Participation in the study was voluntary, and the identity of participants was kept confidential.

The researcher sent e-mail to universities to secure approval to conduct the study. The researcher explained the purpose of the research and provided official documentation that confirmed the researcher was a graduate student at the University of Northern Iowa. After receiving the approval from participating universities, the researcher asked the universities about characteristics they look for in Interior Design instructors. The Researcher sent an introductory letter (Appendix A) to the participants. Once the participants agreed to participate in the study, the researcher sent the consent form (Appendix B) to participants to read and sign and scheduled a time to conduct the interview. Once the consent form was received, the researcher arranged a date and time to meet with each participant and the interviews were conducted at the participants' university campus. However, two of the participants were not able to meet at university

campus, and electronic interviews were conducted in each case.

The interview questions were adopted and modified from (Alwadai, 2014; Bataineh &Alazzi, 2009; Stapleton, 2010). Six Participants from two different universities targeted in this study. The language of the interview varied depending on participants' nationality. However, one interview was conducted in Arabic to ensure a full understanding of Arabic terms. In this case, the interview was translated into English. Also, the translation was reviewed by another translator to ensure accurate translation. The length of interviews were 30 to 45 minutes. All the interviews were recorded and later transcribed. After reviewing and examining participants' answers, the researcher sent the themes to participants to check and make changes to any theme that was not clear and not complete. This procedure was used in this study in order to have accurate and precise data.

## Data Analysis

After the transcripts of the interviews had been reviewed by the researcher, the researcher examined the contents of each answer and compared answers across participants to identify the themes. "Interpretation is an essential part of qualitative research because, without some form of interpretation, we would not be able to make sense of our data" (Willig, 2013. p.40). The researcher read the data multiple times to understand the deep meanings and coding of data. Also, the researcher identified themes and patterns and organized the results. The process that this research followed are outlined by the Willig (2013), who described the process of analyzing qualitative research. First, the researcher should read and re-read the transcript to sort and code the

data in a meaningful way. After that, the researcher should identify and define themes and patterns from the data. Finding relationships between codes, themes and particular cases lead to finding best themes and patterns for the study. Finally, the researcher has to review the identified themes with deep insight, before recoding findings to explanations and interpretive argument. In the last step, the researcher might need to omit some themes and develop new themes as well as re-code the transcript.

In this study, the researcher followed Willig's process to analyze the data. After identifying themes and patterns from the data, the researcher constructed the explanation and interpretation of each theme.

# CHAPTER 4

# RESULTS

This research investigated how critical thinking is defined by university Interior Design instructors in Saudi Arabia. Second, it examined instructors' perceptions and attitudes toward critical thinking. Third, it identified potential obstacles and biases that prevent teachers from teaching critical thinking. The idea of this research developed from reflective awareness of why the Saudi Arabian educational system lacks emphasis on critical thinking.

There were four major themes that emerged from the data which are background knowledge, ambivalent perceptions, sage on stage and restriction in education (See Appendix G). These themes are divided into 12 categories and utilize multiple coding to shed light on all research questions. This chapter also provides interpretation of each theme.

## Background Knowledge

### Instructors' Background:

The researcher conducted the study with five participants. All these participants were non-Saudi due to a shortage of qualified Saudi women with graduate degrees in many fields including Interior Design. Two participants were faculty members at Imam Abdulrahman Bain Faisal University, and they were from Egypt (Instructors # 1 and #2). Three participants were faculty members at Jubail University College. Two of them were from the Philippine (Instructors # 3 and #4) and one was from Sudan (Instructors # 5). The age of interviewees ranged from 41 to 60 years. Instructor 1 earned a Ph.D. in

Architecture; instructor 2 earned Ph.D. in Urban Planning; instructor 3 had a Master degree in School Administration and Supervision; instructor 4 obtained a Master of Architecture Education; and instructor 5 had a Master degree in Construction Management.

Instructors' Experiences:

Most of the participants had long experience in teaching in the Architecture Department. The range of participants experience was between 15 to 34 years. Instructor 1 had 30 years of teaching experience in both Saudi Arabian and Egyptian universities. Similarly, instructor 2 had 5 years of teaching experience in Egyptian universities and 15 years at Imam Abdulrahman Bain Faisal University in Saudi Arabia. Instructor 3 had 34 years of teaching experience in both Saudi Arabia and Philippines universities. Instructor 4 had 20 years of teaching experience; she worked in universities in the Philippines and Saudi Arabia. Instructor 5 had 15 years of teaching experience, 11 years in Sudanese universities and 4 years in Saudi universities.

With regard to their background about critical thinking, all participants indicated that they did not read any books related to critical thinking, and they did not attend any previous sessions about critical thinking and how to promote it in the classroom. Instructor 2 mentioned that "Before 10 years at Imam Abdulrahman Bain Faisal University, the university provided some general sessions about education without specifically mentioning critical thinking." Instructor 3 reported that universities in Saudi Arabia provide neither textbooks nor lectures on how to foster deep learning and critical thinking skills. Instructor 4 indicated that she did not read any books and she did not

attend any sessions focused on critical thinking in Saudi universities. She said, “When I was doing my master degree, in one of my courses, I remember my old professor, she gave us a handout of lectures on how we would encourage students to do deeper thinking during classes. But that was an education class.”

This finding reveals lack of instructors’ background knowledge and experience pertaining to critical thinking. All 5 participants affirmed that they did not read any books about critical thinking, and they did not attend any sessions to learn about critical thinking in Saudi Arabia. Also, one of the participants (Instructor#3) pointed out that instructors did not inspire or encourage them to read books about critical thinking. Also, this finding indicates that universities in Saudi Arabia lack sufficient materials to encourage instructors to engage in and promote critical thinking. For example, they do not provide professional development training sessions for teachers related to what critical thinking is and how to implement it in the classroom. Table 2 provides a summary of this theme.

Table 2

*Demographic Data and Background Knowledge*

| | Instructor #1 | Instructor #2 | Instructor #3 | Instructor #4 | Instructor #5 |
|---|---|---|---|---|---|
| Name of University | Imam Abdulrahman Bain Faisal University | Imam Abdulrahman Bain Faisal University | Jubail University College | Jubail University College | Jubail University College |
| Nationality | Egypt | Egypt | Philippine | Philippine | Sudan |
| Age | 53 | 50 | 60 | 54 | 41 |
| Degree | Ph.D. in Architecture | Ph.D. in Urban Planning | Master in School Administration and Supervision | Master in Architecture Education | Master in Construction Management |
| Experiences | 30 years | 20 years | 34 years | 20 years | 15 years |
| Background | Non | Non | Non | Non | Non |

## Ambivalent Perceptions

### Definitions:

In order to understand instructors' perceptions about content of critical thinking, the researcher asked the interviewees about the definitions of critical thinking and high-order thinking skills. Surprisingly, instructor 1 gave the following textbook definition of critical thinking "the mode of thinking about any problem in which the thinker improves the quality of her thinking by the objective analysis and evaluation of that problem in

order to form judgment and imposing intellectual standards upon it." Instructor 2 defined critical thinking as a way to "solve problems by simple method." To instructors 3 defined it as "an objective way of thinking in a higher order, going beyond the first levels of thinking- there is more of analyzing and synthesizing/evaluating facts." However, when the researcher asked instructors 1, 2 and 3 about high-order thinking skills term, they answered that it is related to terms like "analyze," "evaluate," and "create" but that was the extent of their definitions without further explanation.

Instructor 4 defined critical thinking as "your own way of intelligent decision. Critical thinking is looking at all sides of the question and analyzing each and every detail. So, you go into that path of deeper thinking and analysis." Instructors 5 defined critical thinking as "thinking really about solving interior problems." Both Instructors 4 and 5 indicated that they do not know what the term high-order thinking skills meant.

The above quotes show that some instructors have low to no awareness of what critical thinking is all about. For example, Instructors 2 defined it as to "solve problems by simple method." Also, Instructors 5 defined it as solving interior problems. Both of these definitions showed limited awareness of the term "critical thinking." In this study, the literature review defined critical thinking as an attitude, disposition and cognitive process. However, the definitions that participants gave were limited, incomplete, or inaccurate. Also, all the participants mentioned that they were not aware of higher-order thinking skills, and two of them reported that they did not have any idea what the term meant. Pithers and Soden (2000) indicated that "lack of clarity about the nature of critical thinking lead to confusion about how good thinking might be assessed" (p.239). This

finding showed that instructors are not fully aware of what critical thinking is, and this in turn becomes an obstacle to promoting critical thinking in their classroom. Simply put, instructors cannot implement that which they don't know, understand, and are not fully aware of.

Importance of Critical Thinking:

The researcher also examined instructors' concerns about critical thinking in the curriculum, the importance of critical thinking to students' cognitive ability, and the importance of critical thinking in Interior Design departments. When the researcher asked the interviewees if critical thinking was important in the curriculum or not, all the interviewees indicated that critical thinking should be integrated in the curriculum as a tool to guide the curriculum. Instructors 4 indicated that she encouraged critical thinking within the curriculum, but the curriculum in Saudi Arabia does not inherently encourage critical thinking. She said, "There are courses that do not encourage critical thinking, as I see it, I might be wrong."

Also, the researcher asked the participants if critical thinking encouraged students to learn or improve students' thinking. Instructors1 answered that "It certainly helps them to be better learners and self-directed learners, but it does not increase their intelligence as an inherent skill." Instructor 2 mentioned that "If the students have the motivation to learn, they will learn. However, some students cannot improve their skills because they only want to memorize content." She also noted that "professors sometimes said it is not their responsibility to teach critical thinking skills." This finding shows that some instructors do not believe that critical thinking will have a positive impact on learning

outcomes of students and on the quality of their thinking. Moreover, the findings show that instructors have some barriers to promoting critical thinking.

On the other hand, Instructors 3, 4 and 5 asserted that critical thinking improves students' thinking and intelligence. Instructors3 said "critical thinking will encourage students to learn or improve students' intelligence, rather than base their knowledge on only what is given in the lecture." Similarly, Instructor 4 indicated that "critical thinking will make the students to be independent. It will make them to do other studies, deeper studies, deeper thinking." Also, Instructor 5 said "I think the development of our mind never stops. When we learn more, when we gain new skills, when we gain new information, our mind will grow and develop." These quotes reveal that some instructors believe that critical thinking is an important skill to teach while other do not view it as such.

Moreover, all the participants agreed that critical thinking is an important skill to Interior Design instructors and students. Instructors 1 said "It is very important for an interior designer to understand the logical connections between ideas and at the same time have better control of their own ideas and accept other points of view. Critical thinking helps them to do so, and it also helps them to be self-directing, self-monitoring, and self-correcting designers."

While this instructor does not believe that critical thinking improves students' intelligence, she does believe this skill is an important one to promote in and by Interior Design departments. So, how will students succeed without improving their intelligence? This finding reveals that the perception of instructor is limited in the area of critical

thinking.

Instructor 3 said “critical thinking is important in Interior Design department. Students are dealing with design. Design is done with good research, thus gives the students a variety of knowledge which enables them to be more analytical and creative.”

This theme reveals that there is some tension in instructors’ perceptions toward critical thinking. Some instructors reported that they understand what critical thinking means, but their definitions reflect lack of deep understanding of critical thinking means and entails. Similarly, the participants indicated that critical thinking is important in the curriculum and in Interior Design department but some of them do not believe that critical thinking could help students to learn. In addition, some participants identified or referred the following barriers that prevent instructors from prompting critical thinking: students’ interest, curriculum issues and instructors’ interest. The implication of this theme will be discussed further in the last section of this chapter.

These findings related to this theme shows a lack of instructor’s perceptions toward critical thinking. This finding is not unique to this study; other studies corroborate it. For example, Allamnakhrah (2013) and Alwadai (2014) found that teachers in Saudi Arabia lack general and subtle knowledge about critical thinking. Pithers and Soden (2000) claim that teachers’ lack of awareness about critical thinking impedes students’ practice of critical thinking in the classroom. When instructors have unclear definitions and knowledge about critical thinking, they will not be in a position to teach it, model it, and promote it in their classrooms. Table 3 provides data related to this theme.

Table 3

*Ambivalent Perceptions*

| | Instructor#1 | Instructor #2 | Instructor #3 | Instructor#4 | Instructor#5 |
|---|---|---|---|---|---|
| Critical thinking definition | The mode of thinking about any problem. | Solve problems by simple method. | An objective way of thinking in a higher order, going beyond the first levels of thinking. | Your own way of intelligent decision. | Thinking really about solving interior problems. |
| High order thinking skills definition | Analyze, evaluate and create. | Analyze, evaluate and create. | Analyze, evaluate and create. | She does not know the term. | She does not know the term. |
| Importance of critical thinking in the curriculum | Yes | Yes | Yes | Yes | Yes |
| Importance to improve students' cognitive ability | "it does not increase the intelligence" | "some students cannot improve their skills" | improve students intelligent | improve students intelligent | improve students intelligent |
| Importance to Interior Design Department | Yes | Yes | Yes | Yes | Yes |

## Sage on Stage

### Approach of Teaching Preferences:

The researcher asked the participants about their preferred approach of teaching. All the participants agreed that the best way is to introduce the general topic then

implement it in the course. Instructors 3 said “giving them a general knowledge of a topic, then give situations or examples wherein they analyze such situation-this can be in a form of group discussion.” Instructors4 explained “Because a stand-alone course in critical thinking would be very boring. It should be integrated within the courses, all courses. Not only a separate course you do critical thinking for one course, is it not going to be good. There’s no application. Critical thinking should be applied all the time.”

Also, Instructor 5 said, “I think it is too difficult to teach course about critical thinking to students. Maybe in a course, we can give them just an outline of major themes but teaching them how to use critical thinking the best way inside classes, is by providing opportunities for students to practice it day by day. So, the best way to understand anything or any topic is to practice it, so when they practice it, they will know it better.”

These quotes underline the fact that all participants prefer to use an integrated approach to teaching critical thinking. The next section provides data on how the participants implemented critical thinking in their classrooms.

Strategies in the Classroom:

The researcher asked the interviewees about the strategies that they used in the classroom to enhance critical thinking. Instructor 1 said, “Debates and opposite opinions is the main soul of critical thinking, as I mentioned above; except the other points of view is the tool of being designer. Peer-to-peer jury is one of the methods I use, but I always exceed the class time as the discussions need longer time, most of the students enjoy that after they practice it but few still resisting.”

Instructors 1 pointed out some difficulties with incorporating debates in teaching

including limited class time and lack of student interest. Also, she said, “students enjoy debate after they practice it.” This quote shows that students probably have not been exposed to critical thinking, debate and discussions before entering the university level. This might be one of the major barriers and challenges that university instructors face when they try to implement methods to promote critical thinking.

Instructor 2 explained how the teachers implement critical thinking in their classroom by saying, “I think implementing critical thinking makes the class interactive. In the first class, I encourage discussion, and then I ask students to search a topic and present it at the end of the semester.”

Instructor 2 did not actually implement critical thinking strategies in the classroom and subscribes to the teacher-centered teaching approach more so than the student-centered approach. The literature review points out that teaching strategies that promote critical thinking, such as discussing real-world issues, encourages open- ended class discussion and fosters inquiry-oriented experiments. Instructor 2 did not mention any strategies that foster critical thinking skills. Her teaching strategies and methods are more traditional.

Instructor 3 answered the researcher’s question by saying, “We make them think by themselves by doing research and looking at case studies. Also, I use class discussion, inviting students to agree or disagree with different explanations.” Also, it appeared that instructor 3 did not implement critical thinking in the classroom sufficiently. While research, case studies and discussions are considered useful ways to teach, critical thinking needs more emphasis on analyzing, evaluating and finding logical inferences.

Instructors 1, 2and 3 mentioned that sometimes they include critical thinking questions on their exams. They agreed that the best way to include critical thinking questions in the exam is to give students a case to analyze and discuss. The researcher wonders about how these instructors prepare their students for test items that require critical thinking that has not been sufficiently addressed and promoted in instruction.

Instructor 4 had a different opinion about her strategies in the classroom: "I do not encourage debate in the classroom because of the nature of our course; there would be a defense and discussion especially if it is a thesis presentation of the design, but not for other courses."

The researcher asked this participant about what she meant by "the nature of course" and she replied "I will tell you, honestly, I refuse to take studio classes, I do not want to because students do not take my criticism. Students in Saudi Arabia only want what they think is correct and just do it; they have no interest in issues or cases that call for deeper thinking."

Also, when this participant was asked about including critical thinking questions on the exams, she said:

> We are limited by the degree of difficulty of the exams here. What I mean is, quiz one is a little bit easy, Midterm is more difficult, quiz two more difficult and the finals are the most difficult. I think I can involve critical thinking questions in the final exams, but here in Saudi, students' English Proficiency is very poor. They cannot express their ideas clearly, and they cannot write well either. So, most of them, when I ask for essays and for critical thinking questions like this, as long as we see the words that they want to say, we give them the marks with no further explanation.

Based on their answers, instructors are not motivated to promote critical thinking strategies in their classroom because of the type of their perceived students' resistance to

it. That is, instructors are not motivated to promote critical thinking in their classroom because of perceived obstacles, namely, students' interests and language issues. However, the role of the instructors is to encourage students to utilize critical thinking skills; they should encourage the skills and disposition to promote critical thinking skills.

Instructor 5 reported:

> I asked about certain issues and I asked the students to answer from different points of view. Sometimes they discuss with each other. I give them a chance to explain their ideas. After that, I provide a conclusion of their different ideas. These discussions actually bring life to the class. I start with my slides but after four or five slides I start asking my students, "What do you think about this?" After that, I will come out with a synthesis of their thoughts and ideas. They will feel that they are a part of the class and a part of teaching. They will be interested and active and will be thinking and always be paying attention to me.

Moreover, this participant said that she sometimes includes critical thinking questions on the exams. Instructor 5 seemed to be encouraging and promoting critical thinking in the classroom. Her answer showed that she tried to expose the students to critical thinking skills. She mentioned that "Yes, I am a teacher; but I am still a student who can learn from her students." She provides opportunities to students to evaluate and analyze topics, but she did not give them a chance to draw conclusions or make inferences from their analyses.

The findings related to this theme show that instructors claim that the integrated approach is better than the stand-alone one, although they have hardly promoted critical thinking in their classrooms. Instructors 1and 4 claimed that issues like students' interest and language issues are major barriers to her desire to promote critical thinking in the classroom. Instructors 1, 2 and 3 appear to have instructional strategies that are more traditional and are definitely teacher-centered. Instructor 4 mentioned that she does not

incorporate critical thinking skills in the classroom due to students' lack of interest as well as the nature of courses that do not lend themselves naturally to critical thought. Instructor 5 mentioned that she was still trying to incorporate critical thinking skills in the classroom, but she could do more. Lack of instructors' experience and perceptions toward critical thinking are associated with the extent of their implementation of critical thinking in their classroom. Table 4 provides a summary of the findings related to this theme.

Table 4

*Sage on Stage*

| | Instructor#1 | Instructor#2 | Instructor #3 | Instructor#4 | Instructor#5 |
|---|---|---|---|---|---|
| Approach of teaching | integrated approach | integrated approach | integrated approach | integrated approach | integrated approach |
| Strategies in the classroom | Discussions and debates Difficulties- students' lack of background and class time. | Discussions- search about topic and present it. | Research – case study and discussion | "I do not encourage debate in the classroom" Difficulties- students' lack of interest and language issue. | Discussions and analyzing but she did not give them a chance to draw inferences |

## Restriction on Education

After seeing that there is a limitation in instructors' perceptions and experiences regarding critical thinking. The researcher illustrated that there is a big void in promoting critical thinking strategies. This theme will illuminate the barriers to teaching critical thinking in Saudi Arabia. This section will highlight five obstacles that instructors

interpreted in their responses.

Students' Interest:

Instructor 1 said that students in Saudi Arabia have a poor understanding of critical thinking and prefer memorizing more than deep thinking. She explained:

> Students resist and feel lost as they are not accustomed to critical thinking in their schools before college level. Students prefer memorizing and focus on the grades, not the things they learned. They also don't enjoy learning and thinking; their attitude to learning is not positive. Their learning approach is simply doing a task, completing homework, or taking a test and finally getting a grade. It is the end result not the process they care about and that prevents them from enjoying the process of learning including critical thinking and developing it as an important skill.

Instructors 2 gave the following answer: "Some students rely on memorizing more than understanding, but I do not think this is the big issue, I think there is another factor."

Instructors 3 said "Some students just rely on what the teacher gives them in the lecture only." And added, "Students' interest. Because of lack of knowledge in research."

Instructor 4 agreed with that; by saying:

> As I see it, students are very much spoon-fed the information. Ideas are just there. In general, if I can compare students in Saudi with students in other countries, they are much babied. Not independent. Always dependent on the teacher. So, if the teacher gives more strict analysis and gives more questions, students will complain that they are getting hard work. Complain, complain, complain! So hard, so hard, so hard! So, what's the sense of having critical thinking if everything is easy? There is no more careful thinking of how to do it.

She also said, "I find students here in Saudi to be very lazy; they do not want to listen to criticism or engage in critical analysis. They do not want to open up. They only

want what they think is correct and they just do it blindly. There is no deeper thinking."

Instructors 5 said that students want to develop themselves. She said, instructors should be aware of their method of teaching. When Instructors involve students in all class activities, students will enjoy the class and will also be more interested to learn.

This finding shows that students lack knowledge about and skills of critical thinking. All the participants acknowledged that students were not exposed to critical thinking in their previous schooling. This finding is supported by Allamnakhrah (2013) study. The students in his study believed that they were not being taught critical thinking in their previous educational programs. When students grow up without being exposed to critical thinking skills, they will have a hard time to practice them when they go to college and later when they start their careers. Also, the participants indicated that students prefer memorizing and rote-learning. Students echo the same complaint about their teachers. Allamnakhrah (2013) reported that Saudi students complain that their lecturers lack both critical thinking and knowledge.

Instructors' Interest:

Instructors play an important role in the education. They have a tremendous opportunity to teach important skills and abilities to their students. In addition, they could promote critical thinking skills among their students.

Many researchers mentioned that instructors in Saudi Arabia still consider and use rote-learning as a dominant teaching method (Al Ghamdi& Deraney, 2013; Allamnakhrah, 2013; Alwadai, 2014; Alwehaibi, 2012).

In this research, the instructors claimed that their Saudi students lack critical

thinking skills, and it is hard to teach it to them when they enter the university. Instructor 1 said that teachers try to help students to use critical thinking skills, but students resist their efforts. Instructor 3 had a similar response to Instructor 1. She said, “I tried my best to implement it in the classroom.” Instructor1 said that students’ interest and class time were major obstacles to teaching them about critical thinking. Also, Instructor 3 indicated that the most important strategies to teach critical thinking is doing research and case studies without further deep explanation about implementation in the classroom.

The participants claim that they are teaching critical thinking, but their teaching strategies fall short of achieving their desired goals – if at all. Instructor 2 claimed that critical thinking skills should be taught in high schools-not at the university level. She said, “Instructors at the universities are not responsible for teaching critical thinking skills. These skills should be taught in the schools but not in the universities.” she said many instructors at the university are not interested in teaching critical thinking skills for this reason. At the same time, she agreed that instructors can motivate students to learn and use critical thinking skills. She said that, if the teachers encourage students to practice it in the classroom, students will be more interested to learn it.

Instructor 4 said that she is not interested in teaching critical thinking skills particularly at a Saudi university. She mentioned that students always complain when she encourages them to think critically. The complaints lead her to resort to traditional teaching methods, specifically rote-learning. She said, “That is why I do not want to teach studio classes because I get in trouble with my students in Design courses if I ask questions that need deeper analysis.”

Instructor 5 replied that teaching methods are important to students by saying:

> Some students they do not accept my criticism. But again, it depends on how you speak, how you tell them. I think we should avoid joking in our criticism. Usually when I try to critique, I start with the positive part, not with bad part. Also, the way instructors speak, the tone and the term they used encourage or disappoint students to learn. Most of the students accept my criticism if I used this method.

Instructor 5 seemed like she tried to help her students to encourage students to engage in high-order thinking skills. Instructor 2 readily asserted that teaching critical thinking skills is not her responsibility. Instructor 4 commented that students are not interested, and that is why she refuses to teach these skills because she does not want to get in any trouble.

The above responses show that instructors are not interested in implementing critical thinking skills for a variety of reasons. Some of the reasons deal with skill-deficit or a deficit in prior knowledge and awareness about critical thinking. Other reasons deal with students' lack of interest. Still others have something to do with instructors' perceived ban on or an unwritten rule against teaching critical thinking to students. Out of the five participants, only one instructor agreed that she could help students if she implements critical thinking in the classroom. This finding is also supported by Allamnakhrah (2013) study in which he asked students about lecturers' method and its link to critical thinking. He said that "students claim that lectures do not encourage critical thinking, and instructors based their teaching on rote-learning method" (p. 204). Based on this finding, there seems to be a curious absence of critical thinking skills in Saudi Arabia school curriculum. Also, there is a real lack of consistent and serious students' and teachers' interest in engaging in critical thinking.

Society and Culture:

According to Grosser and Lombard (2008), “The cultural environment in which a learner grows up is a major factor contributing to the development of critical thinking abilities” (p.1366). The researcher asked the participants about how culture and society view critical thinking. But when the researcher asked the participants if the Saudi society values critical thinking or not, most of them agreed that it did not value critical thinking.

Instructor 1 said “Saudi society likes to be as a consumer more than producer of knowledge. Also, they can’t solve their problems by themselves. Saudi society needs time to use critical thinking skills in their daily life.”

Instructor 2 said “Saudi society has more freedom now, compared to the past, when society did not accept women to be educated in different fields like Engineering, Architecture or Medical fields. Women can study these fields now.” Instructor 3 stated that “culture and political issues might be considered as obstacles to implementing critical thinking skills. Some students may have some reservations in expressing their free will.”

However, she said that Saudi society values critical thinking skills. She said, “I see them in their employment dealing with employers and clients- they consider your recommendation with these skills reinforced with comprehensive research.”

Instructor 4 explained:

> This is a hard question, I will tell you something. If women in Saudi are not allowed to decide for themselves, they will never get out of the shell and be on their own to do critical thinking. Women in Saudi Arabia always depend on their husbands their fathers, their uncles, women are never empowered. Women can do wonders, and that is one thing that is not allowed here.

When asked, what do you think are the reasons that affects women's behavior in the society, she replied, "maybe some cultural issues" she explained "critical thinking is limited in Saudi Arabia, especially for women, I think men have more freedom to express their opinions."

Instructor 5 reported "I can't answer this question because I am not a citizen, but I think it is limited."

It is clear that Saudi culture and society do not support nor sanction fostering critical thinking in schools. Most of the participants agreed that critical thinking is limited in Saudi Arabia. Instructor 4 believed that there are gender differences. Actually, her observation regarding gender differences was not wrong. The literature review revealed that there is a gender difference in the education system. Men are allowed to study different fields while women are not. Also, boys' curriculum is more extensive than the curriculum that is provided to females. Nevertheless, that does not mean that men are totally allowed to implement critical thinking skills, but they have an advantage over women in that they have access to intensive education with more different skills than women.

Language Issue:

The official language in Saudi Arabia is Arabic, and students are taught English beginning in the 6$^{th}$ grade. Public schools, however, do not emphasize English as a second language to the students. Most universities in Saudi Arabia use English language as the basic language of instruction, which creates difficulties for students to understand and follow what is being said, presented and discussed in the classroom. In this study,

Instructors 1, 2 and 5 are from Egypt and Sudan. These instructors did not mention any issues with language because their language is Arabic and can code-switch by switching alternately from English to Arabic when students have difficulty following instruction when delivered in English.

Instructors 3 and 4 are from the Philippines. They reported that language was one of the obstacles. Instructor 3 said "Language is one of the obstacles. In my observation, I guess they can express their thoughts well if they speak in their own language. So, if we want to strengthen their expression in a universal language, then reinforce the English communication- verbal and written." Instructors 4 said, "Here in Saudi, students are so poor in English. They cannot express their thoughts well, and they cannot write well either. So, most of them, when I ask for essays and for critical thinking questions like this, as long as we see the words that they want to say, we give them the marks with no further explanation."

She said, "I have difficulty because I do not speak Arabic. During discussion time, students although I know they are trying their best to express what they want to say, they cannot find the right words to express their ideas. Perhaps, that is why critical thinking is not prevalent in Saudi educational institutions. For me as a foreign teacher, I cannot fully understand what they are trying to say."

These findings show that language issues constitute one of the major obstacles to promoting critical thinking in Saudi Arabia. Students could not express their opinions and clarify their analyses owing to their lack of proficiency in and fluency in the English language.

Education System:

According to Allamnakhrah (2013), “critical thinking is lacking in the Saudi education system” (p.206). Researchers believe that it is necessary to reform the educational system in Saudi Arabia to meet professional development and modern- day needs (Al Ghamdi & Deraney, 2013; Allamnakhrah, 2013; Alwadai, 2014; Alwehaibi, 2012).

The researcher asked the participants about the Ministry of Education’s role as well as the university’s role in promoting critical thinking.

Instructor 1 indicated the following: “Lately the government changed the pre-college education and introduced a new learning method. But as a university instructor, I have not felt the impact of these methods on the students’ way of thinking yet.” She added that the universities do not provide any training or professional development opportunities related to critical thinking. Instructor 2 claimed that the “Education system in the Saudi Arabia relies on spoon-feeding.” She agreed with instructor 1 about the lack of professional development and training opportunities for teaching critical thinking at the university level. Instructor 3 said that the Ministry of Education developed some curricular and teaching materials including some related to divergent thinking. Moreover, she commented that the university neither pays attention to enhancing instructors’ content knowledge nor provides opportunities for building upon teachers’ existing pedagogical skills and abilities.

Instructor 4 said, “There are some courses in the university that do not encourage critical thinking.” Also, she said “I have not seen or been a participant in any faculty

development sessions flowed by the university or Ministry of Education." Instructor 5 stated that the "University and Ministry of Education do not emphasize critical thinking skills, nor do they provide any training sessions or workshops related to it. However, instructors try to implement critical thinking because they know how important critical thinking is for students." Also, she claimed that the university do not provide necessary supplemental materials, textbooks, workshops as well as reference in the library.

The abovementioned participants' comments show that the Ministry of Education does not consider critical thinking as an important skill to teach. At the university, there are no professional development sessions or training opportunities. Further, the campuses lack textbooks, curricular and instructional materials for students and teachers to use. Table 5 provides a summary of the findings related to this theme.

Table 5

*Restriction on Education*

| | Instructor#1 | Instructor#2 | Instructor #3 | Instructor#4 | Instructor# 5 |
|---|---|---|---|---|---|
| Students' interest | They prefer memorizing | They prefer memorizing | They prefer memorizing | They prefer memorizing | Students want to develop their thinking. |
| Instructors' interest | "I try to help students" | "Instructors are not responsible" | "I try to implement it in the class" | She is not interested to teach CT. | "I tried to help student" |
| Society and culture | "Saudi society needs time to use critical thinking" | "Saudi society has more freedom now" | "students may have some reservations in expressing their thoughts" | Critical thinking is limited in Saudi Arabia. | Critical thinking is limited in Saudi Arabia |
| Language issue | No issue | No issue | Lack of English proficiency | Lack of English proficiency | No issue |
| Education System | Lack support. | Lack support. | Lack support. | Lack support. | Lack support. |

## Summary

Four major themes emerged from this study. First, all participants with different nationalities did not have any experiences with critical thinking. While the participants' teaching experience ranged from 15 to 34 years, all the participants reported not reading any books or attending any sessions related to critical thinking. Second, the data showed that their knowledge and thoughts about what critical thinking is and what it entails are limited at best. The definitions participants gave for critical thinking underlie a serious

lack of solid understanding of critical thinking. Third, all the participants agreed that if given a choice to teach critical thinking, they would prefer integrating critical thinking in the curriculum, rather than teaching as a stand-alone course. However, their implementation of critical thinking strategies in the classroom is limited at best. Instructors1, 2 and 3 implemented traditional methods such as discussion in the classroom or asked students to conduct research about specific topics. Instructor 4 said that she was not interested in using any critical thinking strategies due to perceived obstacles inherent in the Saudi Arabian educational system as well as culture. Instructor 5 tried to use critical thinking strategies in the classroom. The last theme that emerged from the data relates to barriers to teaching critical thinking in Saudi Arabia. The participants highlighted five major obstacles to teaching critical thinking in the classroom including students' interest, instructors' interest, society and culture, language issues and an archaic and a very traditional educational system.

# CHAPTER 5

# DISCUSSION

The purpose of this study was three-tier: to investigate how critical thinking is defined by Interior Design instructors in Saudi Arabia, to examine instructors' perceptions and attitudes toward critical thinking, and to identify potential obstacles and biases that prevent teachers from teaching critical thinking. To better understand instructors' perceptions, a qualitative research design was used. The researcher conducted interviews with five instructors from Interior Design Departments. In this chapter, the findings are discussed, the limitations of the research are elaborated, implications of the research are drawn, and suggestion for future research are offered.

## Discussion of Finding

### Background Knowledge:

The participants of this study all had a relatively long experience in the teaching field. The participants experience ranged from 15 to 34 years. All the participants lacked background information regarding critical thinking and indicated that by saying that they did not attend any teaching training sessions for teaching critical thinking in Saudi Arabian schools. Also, they mentioned that they did not read any books about how to develop and promote critical thinking in the classroom. One participant claimed that the universities do not provide a textbook about education in general and related to critical thinking in particular. Also, all participants said that their universities do not provide professional development sessions for improving existing methods or learning new ones. This finding shows a lack of instructors' background information and experience related

to critical thinking. Nevertheless, participants had a relatively long experience in teaching, but they did not display any interest in improving their teaching methods nor did they express any interest in reading books or attending professional training connected with critical thinking.

Ambivalence Perception:

With regard to the definitions of critical thinking, most of the instructors have unclear and ambiguous definitions of critical thinking, and they do not have any idea of what high-order thinking skills are. Each participant offered a different definition to critical thinking. The researcher defined critical thinking as a skill that helps to identify problems in arguments through analyzing and evaluating their underlying assumptions. The participants did not provide the depth of knowledge that they wanted their students to achieve for a variety reasons. They do not seem to be really clear on what critical thinking is, and they did not seem to give a precise meaning to critical thinking. They all agreed that critical thinking is related to solving problems. It is interesting to note that all participants considered critical thinking as a tool to solving problem but did not identify the problems in any logical way. Their answers seemed to imply that they are more concerned with students' achieving knowledge than in teaching them reasoning and solving problem methods.

Also, the participants indicated that they do not know what the meaning of high order thinking is, but they know that it is related to analyzing, evaluating and creating. This finding shows that instructors are not fully aware of what critical thinking is, which could explain why they fail to it in their classroom. This finding is supported by

Alwadai's (2014) research, who found that teachers of Islamic classes at elementary schools offered limited definitions of critical thinking.

In terms of the importance of critical thinking, all the participants agreed that it is an important part of the curriculum in general, and as thus should be integrated into interior design courses. However, instructor 1 said that critical thinking does not increase the intelligence, and instructor 2 said "it will not improve their skills because they want to memorize the facts and information." This showed that 2 participants out of 5 did not believe that critical thinking has a positive impact on students' intelligence. They believed that intelligence is a gift from God. As Instructor 2 said, "I think students can be creative when they have a gift from God."

This theme illustrates the ambivalence in perceptions of instructors. Instructors believed that critical thinking is important in the Interior Design field, but they do not have a full understanding of it. When the instructors do not have adequate knowledge about the critical thinking, they will not be able to teach it to their students let alone be able to model it in the classroom. According to Choy and Cheach (2009), "critical thinking can only be taught by teachers who have in-depth knowledge of critical thinking skills and understanding of how to incorporate this into their lessons set that it is easier to students to adapt of this type of thinking" (p.205).

Sage on Stage:

In terms of the best approach to teaching, all participants said that they prefer the integrated approach rather than a stand-alone course. All of the participants agreed that the integrated approach is more useful to promoting critical thinking in the classroom.

Unfortunately, when the researcher asked them about their strategies in the classroom, they seemed to emphasize the traditional teacher-centered approach. Instructors 1, 2 and 3 seemed to implement traditional strategies and emphasis teacher-centeredness. The participants said that they asked students to discuss a topic, find a research topic or make a presentation about specific topic. While these opportunities and the skills they require are important to students, they do not constitute a holistic method to incorporating critical thinking skills. Although Instructors 1, 2 and 3 reported that they are using critical thinking strategies in their classroom, the literature review pints out that evaluating and making inferences are the best ways to go about promoting critical thinking in the classroom. The instructors did not mention these skills in their answers. Instructor 5 seemed to be trying to incorporate critical thinking strategies, but she said, "After the discussion I came out with my conclusion." This implied that she discusses the topic with students, but she does not give a chance to students to make inferences from their analyses. Instructor 4 refused to incorporate critical thinking strategies due to students' lack of interest as well as the nature of the courses she teaches. Incorporating critical thinking in the classroom is challenging to the teachers (Choy & Cheah, 2009; Miri et al., 2007). It is really hard to implement critical thinking skills in the classroom, instructors should have a wide knowledge about critical thinking to incorporate it in the classroom.

The teacher could be a disseminator of information or a mediator of learning. Disseminators of information transfer knowledge to students while mediators of learning empower students thinking (Choy&Cheah, 2009). Instructors should be aware of their attitudes in the classroom. When instructors work as a disseminator, they rob students of

the opportunity to think and analyze the problems. Instructors should work as mediators by encouraging students' independent, divergent, and critical thinking. All the participants seemed to be disseminators in this study more than mediators. Miri et al., (2007) indicated effective strategies that could help students achieve critical thinking skills such as: "students question asking, self-investigating of phenomena, exercising open- ended inquiry-type experiments and making inferences" (p.369). None of these participants mentioned any of these strategies, which clearly shows that instructors rely on rote-learning and use teacher-centered teaching methods in their instruction.

Restriction on Education:

With regards to the obstacles that prevent fostering critical thinking, the instructors reported five major barriers including students' interest, instructors' interest, society and culture, language issues and very traditional educational system.

With respect to students' interest, four participants agreed that students lacked the necessary background information for and about critical thinking. One instructor out five said students always like to develop their own skills, and instructors should make sure that their methods of teaching are conducive for such development. Other Instructors indicated that students seemed to have not been taught critical thinking prior to coming to the university. Also, they reported that students prefer memorizing and easy tasks, and that students do not really enjoy learning and thinking. Instructor 4 said when students are assigned hard work, they will "complain, complain, and complain!" Instructors indicated that students are motivated to learn for the grades only. Saudi students equated learning with getting high grades on exams. High grades, in students' perception, are an

expression of students' intelligence and smartness. This view is broadly prevalent among Saudi students. Parents motivate their children to get good grades instead of emphasizing learning from their mistakes and thinking deeply about subjects they study. Underlying this finding is the overrepresentation of performance learning orientation among Saudi students. That is, the students are motivated to learn when praised, receive awards, or think will be punished if they do not learn. The locus of control of their learning is external, not internal. As such, performance-learning students are not likely to embrace critical thinking skills. Students who truly engage in critical thinking learn for learning sake. They have an inherent love for learning and possess or cultivate the requisite skills that help them to grow and develop as learners.

Allamnakhrah (2013) and Alwadai (2014) found that students in Saudi Arabia lack background and interest in critical thinking skills. Allamnakhrah (2013) specifically warned against teachers blaming "students themselves is a rather simplistic argument as it fails to take into account how or why this situation arose, weather as a product of educational system in specific cultural and social contexts or for other reasons" (p.206). Although instructors blame students for their weak background regarding critical thinking, they should blame themselves first because their job is to help students to improve and foster thinking and deep learning.

As far as instructors' interest is concerned, Instructors 1 and 3 claimed that they help their students to use critical thinking skills. However, when the researcher asked them about the specific strategies they use in the classroom to accomplish this, they listed limited or general methods such as discussion and asking students to submit a research.

Instructor 2 claimed that students should be taught these skills before they come to the university. She reported that it is not the instructors' responsibly to teach these skills at the university level, and that students are supposed to possess these skills already. This sets up a mission impossible—students do not have the requisite critical thinking and university instructors feel that the students should have learned these skills before coming to the university. To make the mission more complicated, the instructors are not willing to fill the void in students' critical thinking background knowledge and skills.

Instructor 4 preferred traditional methods because students neither possess nor show any interest in working on challenging learning tasks and assignments. Only instructor 5 reported that changing teaching methods is an effective way to teach critical thinking in the classroom. She believes that instructors should try to expose students to critical thinking skills by implementing different instructional methods and strategies. What the instructor shared shows that, like students, some teachers lack the interest and willingness to teach critical thinking skills. This finding is consistent with previous findings that showed instructors' lack of background, experience, foggy perceptions, and non-effectual strategies are impediments to promoting critical thinking in the classroom.

Furthermore, research found that society and culture make it difficult to implement critical thinking in the classroom. All participants agreed that critical thinking is limited in the Saudi Arabian culture. Saudi students grow up without being exposed to critical thinking at home, school, media, and overall culture. Saudi culture teaches kids that it is not respectful to discuss or argue with parents, teachers, or people who are older than they are. As a result, students think that arguing with instructors is considered to be

impolite. Dissent is frowned in the display rules that the Saudi society instills in its members. This finding is consistent with findings from research conducted by Al Ghamdi and Deraney (2013), Allamnakhrah (2013), Alwadai (2014) and Alwehaibi (2012). Also, one participant indicated that Saudi males have more leeway when it comes to critical thinking compared to female Saudi students. Her observations are spot on as there is a glaringly clear gender difference in the Saudi educational system. For example, men have a more intensive curriculum than women do. Also, men are allowed to study and go into more far more fields than women are. According to Alsuwaida (2016) "the true purpose of academia is to prepare citizens for a productive life, but Saudi society blatantly ignores women's contributions to the advancement of humanity" (p.111).

Moreover, two instructors form the Philippines indicated that students lack proficiency in the English language. They said that students could not express their opinions clearly and are not able to provide elaborations on their answers to exam questions.

Finally, all the participants indicated that universities and Ministry of Education in Saudi Arabia do not emphasize critical thinking skills as this competency does not figure prominently in the Saudi national curriculum. This observation is shared by Alamri (2011), Al Ghamdi and Deraney (2013), Allamnakhrah (2013), Alsuwaida (2016), Alwadai (2014) and Alwehaibi (2012). These scholars argue that it is very important to reform the education system in order to foster critical thinking skills in all education departments. The educational system in Saudi Arabia needs to pay serious attention to cultivating students' cognitive skills, especially critical thinking. The educational

system can expand and embrace multiple modes and mediums of instruction such as online education, which is supported currently. Researches are not supported financially, and instructors with terminal degrees are limited (Alamri, 2011). Also, university campuses lack adequate libraries with rich curricular materials and books on various fields of study. Participants 3, 4 and 5 mentioned that universities lack important curricular materials. All of these factors add to existing obstacles that prevent teachers from fostering and promoting critical thinking in their classrooms.

One of the significant findings was that although instructors were selected from two different universities, there were no significant differences in their perceptions toward critical thinking. Participant 5, who is from Sudan, seemed to be more knowledgeable about critical thinking and as thus was more inclined to promoting critical thinking in the classroom.

## Limitations

As in all studies, this study had a few limitations. For one, this study relied on interviewing. To get better understanding regarding this topic, combining interviews and classroom observations might provide deeper results that reflect what instructors profess to do and what they actually do. The other limitation is related to the fact that all participants were non–Saudi. It would be interesting to see if interviews conducted with Saudi instructors reveal results similar to or different than the ones reported in this study. Third, instructors appeared hesitant to express their thoughts about critical thinking in the context of the Saudi Arabian culture and educational system. Out of respect for participants' privacy, the researcher did not prod or dig for reasons behind their

reluctance. The last limitation deals with the fact that this exploratory study focused on interior design instructors.

## Implications of the Research

Based on the findings of this study, the following implications were drawn. The results imply that it is very important to provide training and professional development related to critical thinking for instructors at the university level as well as for teachers in pk-12 public and private schools. Also, instructors should be aware of their instructional methods, and to specifically know which ones are most effective for fostering critical thinking in students. Instructors should pay attention to their classroom dynamics and ensure that the classroom discourse is conducive to free thought, critical, divergent, and creative thinking. Critical thinking skills require direct coaching as well as need constant and ample practice for students to be able to internalize them. Implementing critical thinking in Saudi Arabia education needs to follow a coherent and an orchestrated long-term and short-term strategies. The approach to promoting critical thinking needs to be integrated within the curriculum and needs to stat early on from preschool on. In this way, students will enter the university with the prerequisite thinking and learning skills that would ensure high academic achievement. Saudi education policy makers and curriculum designers would find it worthwhile to heed the following advice given by Miri et al., (2007): “If one knowingly, persistently and purposely teaches for promoting higher order thinking among her/his students, there is a good chance for success” (p.369).

## Future Direction

Additional research needs to be carried out to learn more about teachers' and students' perceptions toward critical thinking in Saudi Arabia. It is important to study instructors' perception in all different fields. Also, it is important to find out students' perceptions regarding this topic. This study only focused o instructors' perceptions; it would be worthwhile investigating students' perceptions and experiences and to compare what they share with that of their instructors. In addition, it would be worthwhile to examine perceptions of elementary, middle and high schools. Finding different perspectives might potentially help educators to find the weakness and challenges in their instructional methods, deficiencies in the curriculum and the education system as a whole

## Conclusion

Three major findings were reported in this study. First, Interior design instructors lack understanding of what critical thinking means and consists of. Second, current pedagogical methods used by instructors in Saudi Arabia e don't seem to pay as much attention to critical thinking, divergent thinking, and creative thinking. Teaching is very much teacher-centered. Teachers need to be encouraged to experiment with student-centered approaches, and slowly adopt them and incorporate them into their instructional repertoire. Third, five major barriers to fostering critical thinking in the classroom were identified. These include students' interest, instructors' interest, society and culture, language issue and education system. There is a high demand for reform in the education system in Saudi Arabia (Alamri, 2011; Al Ghamdi& Deraney, 2013; Allamnakhrah, 2013; Alsuwaida, 2016; Alwadai, 2014; Alwehaibi, 2012). A coherent and a carefully

orchestrated strategy to finding solutions and ways of removing these obstacles would be an important focus for any serious education reform in the Saudi Arabian education system.

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# APPENDIX A

## INTRODUCTORY LETTER

Dear Professor or Teachers,

As graduate students from Educational Psychology: Professional Development for Teachers at the University of Northern Iowa. I am working on my thesis which is about teacher's perception toward critical thinking in Saudi Arabia specifically on Interior Design Department. I need to make interview with Interior Design teachers and Professor.

Can you please participate on my study?

The interview will take 30to 45 minutes from your time. All the questions of the interview are regarding my study. Your participation will assist me to understand teacher's perception toward critical thinking.

All information of the interview will remain confidential. Your identity will be concealed by using (code) instead of your name.

Thank you for participating. If you have any questions, please contact me through E-mail alramisa@uni.edu or my phone # 0455238201

Sincerely,

Afnan Al-Ramis, MAE
UNI Graduate students.

Radhi Al- Mabuk, Ph.D.
UNI Research Supervisor.

# APPENDIX B

## INFORMED CONSENT FORM

The present questionnaires are designed to examine Interior Design instructors' perception toward critical thinking in Saudi Arabia specifically in eastern province. Also, to understand if there are obstacles to teach critical thinking. If you agree to participate, I will ask that you complete the questionnaires. There are no right or wrong answers to any questions. All information that you provide will remain confidential. Your identity will be concealed by using a number (cod) in place of your name. Your consent forms will be separated from the data, so please be honest and accurate. If you have questions about the study please contact me via E-mail .alramisa@uni.edu.

_____ _____

Afnan Al-Ramis,MAE Date

UNI Graduate Students

Radhi Al-Mabuk

UNI Research Supervisor

I am fully aware of the nature and extent of my participation in this study as stated above and any possible risks arising from it. I hereby agree participate in this study.

_____ _____

Signature of Participant Date

_____

Printed Name of Participant

# APPENDIX C

## GENERAL QUESTIONS ABOUT CRITICAL THINKING

Please answer these questions honestly, remember that your name will not mention at the study:

i. Your age:

ii. Years of experiences:

iii. Citizens or non-citizens if non, please mention your nationality:

iv. Name of the university:

v. Your degree B.A., M.A., Ph.D.

1- What does the term “Critical Thinking” mean to you, can you please define it?

2- What does the term “high order thinking skills” mean, do you know what these skills is?

3- Do you encourage critical thinking as a teacher in your classroom, if so, how do you encourage it? Explain with examples?

4- Is there any textbook or other sources that you are using to practice critical thinking activities in the classroom?

5- Do you think critical thinking should play a stronger role in the curriculum? Explain your answer please.

6- As a professors or instructors, did you take any course related to how to teach critical thinking skills or related to how promote critical thinking in the classroom?

7- Do you think critical thinking is encouraging students to learn? Explain your answer please.

# APPENDIX D

## QUESTIONS ABOUT CRITICAL THINKING IN SAUDI ARABI

1- Is there any obstacle that you find it when you are involving critical thinking skills? If so, what are obstacles that prevent you from teaching critical thinking in Saudi universities?

2- Which is the most factor that prevent you from teaching critical thinking skills? Please explain your answer.

Schools Faculties, students' interest, lack of material and equipment, class time, culture, or political issues.

3- Do you think improving critical thinking skills lead to develop Saudi society? Explain your answer please?

4- Do Ministry of education at Saudi Arabia support high order thinking skills (HOTS), in other words, do they encourage teachers to teach HOTS or integrated HOTS in the curriculum? For examples, arrange courses to teacher about critical thinking or integrate critical thinking skills to a curriculum.

5- Do you think Saudi society value critical thinking skills? Please support your answer with example.

# APPENDIX E

## QUESTIONS ABOUT THE RELATIONSHIP BETWEEN INTERIOR DESIGN DEPARTMENT AND CRITICAL THINKING

1- Is critical thinking important in Interior Design Department? If yes, why it is important?

2- Which approach of teaching you are prefer and why? Integrated critical thinking skills in the curriculum or using stand -alone course teach critical thinking skills?

3- Did the university or Interior Design Department prepare any courses for teachers to show the importance of critical thinking skills?

4- What is the benefits of teaching critical thinking skills to Interior Design students? In other words what are the skills that could students gain it from critical thinking?

5- Do exams involve critical thinking questions?

6- Are you encouraging debates and opposite opinions in the class, how you are mange the debates in the class between the students? And how often do you involve the debates? Do you think the debates and dissection lost the class time?

# APPENDIX F

## INITIAL CODING FROM INSTRUCTORS' INTERVIEW

| Instructor#1 | Instructor#2 | Instructor#3 | Instructor#4 | Instructor#5 |
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| The mode of thinking about any problem in which the thinker improves the quality of her thinking by the objective analysis and evaluation of that problem in order to form judgment and imposing intellectual standards upon it.<br><br>It certainly help them to be better learner and self-learner, but it does not increase the intelligence as an inherent skill.<br><br>It is very important for interior designer to understand the logical connections between ideas | Before 10 years at Imam Abdulrahman Bain Faisal University, the university provided some sessions about education in general without mention of critical thinking in particular.<br><br>Solve problems by simple method.<br><br>If the students have the motivation to learn, they will learn. However, some students cannot improve their skills because they want to memorize the curriculum. Professors sometimes said it is not their responsibility to teach critical thinking skills.<br><br>I think implementing | An objective way of thinking in a higher order, going beyond the first levels of thinking-there is more of analyzing and synthesizing/evaluating facts.<br><br>Critical thinking will encourage students to learn or will improve student's intelligence, rather than based their knowledge on what is given in the lecture only.<br><br>Giving them a general knowledge of a topic, then give situations or examples wherein they analyze such situation-this can be in a | When I was doing my master degree, in one of my courses I remember my old professor, she gave us a handout of lectures on how we would encourage students to do deeper thinking during classes. But that was an education class.<br><br>Your own way of intelligent decision. Critical thinking is looking at all sides of the question and analyzing each and every detail. So, you go into that path of deeper thinking and analysis.<br><br>There are courses that do not encourage critical thinking, as I see it, I might be wrong.<br><br>Critical thinking will make them to be independent. It | I think critical thinking to me is thinking really about solving interior problems.<br><br>I think the development of our mind never stops. When we learn more, when we gain new skills, when we gain new information, our mind will be developed.<br><br>I think it is too difficult to teach a student course about critical thinking. Maybe in a course we can give them just outline but teaching them how to use critical thinking the best way inside classes. They will |

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| and at the same time have better control of their own ideas and accept other points of view. Critical thinking help them to do so and also help them to be self- directed, self-monitored, and self-corrective thinking designer.<br><br>Students enjoy debate after they practice it.<br><br>Students resist and feel lost. As they are not accustomed to of critical thinking in their schools before college level. Students prefer memorizing and focus on the grades, not the things they learned. They also don't enjoy learning and thinking; their attitude | critical thinking makes the class interactive, in the first class, I encourage discussion, and then I asked them to search a topic and present it at the end of the semester.<br><br>Some students rely on memorizing more than understanding, but I do not think this is the big issue, I think there is another factor.<br><br>Instructors at the universities are not responsible for teaching critical thinking skills; these skills should be taught in the schools but not in the universities.<br><br>Saudi society has more freedom now, compared to the past, when society did not accept women | form of group discussion.<br><br>We make them think by themselves by doing researches and looking at case studies. Also, I used class discussion, inviting students to agree or disagree with explanation.<br><br>Some students just rely on what the teacher gives them in the lecture only.<br><br>Students' interest. Because of lack of knowledge in research.<br><br>Might be considered among the obstacles to implementing critical thinking skills. Some students may have some reservations in | will make them to do other studies, deeper studies, deeper thinking.<br><br>Because a stand-alone course in critical thinking would be very boring. It should be integrated within the courses, all courses. Not only a separate course you do critical thinking for one course, is it not going to be good. There's no application. Critical thinking should be applied all the time.<br><br>I do not encourage debate in the classroom because of the nature of our course; there would be a defense and discussion if it is thesis presentation of the design, but not for other courses.<br><br>I will tell you, honestly, I refuse to take studio classes, I do not want. Because students do not take my criticism. Students in Saudi | practice it day by day. So, the best way to understand anything or any topic is to practice it, so when they practice it they will know it better.<br><br>I asked about certain issues and I asked the students to answer from different point of view. Sometimes they discuss each other. I give them a chance to explain their idea. After that, I come out with conclusion. These discussions actually bring life to the class. I start with my slides but after four or five slides I start asking my students, "What do you think about this?" After that, I will come out with |

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| limited to learning. Their process of learning is having a task, homework, or test and finally a grade. It is the end result not the process they care about and that prevents them from enjoying CT and develop this skill.<br><br>I tried my best to implement it in the classroom.<br><br>Saudi society likes to be as a consumer more than producer. Also, they can't solve their problems by themselves. Saudi society needs time to use critical thinking skills in their daily life.<br><br>Lately the government changed the pre-college education and | to be educated in different fields like Engineering, Architecture or Medical fields. Women can study these fields now.<br><br>Education system in the Saudi Arabia relies on spoon-feeding. | expressing their free well.<br><br>I see them in their employment dealing with employers and clients- they consider your recommendation with these skills reinforced with comprehensive research.<br><br>Language could be one of the obstacles. In my observation, I guess they can express their thoughts well if they speak in their own language. So, if we want to strengthen their expression in a universal language, then reinforce the English communication- verbal and written. | Arabia only want what they think is correct and just do it, they have no interest in deeper thinking.<br><br>We are limited by the degree of difficulty of the exams here. What I mean is, quiz one is a little bit easy, Midterm is more difficult, quiz two more difficult and the finals are the most difficult. I think I can involve critical thinking questions in the final exams, but here in Saudi, students English Proficiency is very poor. They cannot express their idea clearly, and they cannot write well either. So, most of them, when I ask for essays and for critical thinking questions like this, as long as we see the words that they want to say, we give them the marks with no further explanation.<br><br>As I see it, students are very | my conclusion. They will feel that they are a part of the class and a part of teaching. So, they will be interesting, they will be active, they will be thinking and always have attention to me.<br><br>Yes, I am a teacher; but I am still a student who can learn from her students<br><br>Some students they did not accept my criticism. But again, it depends on how you speak, how you tell them. I think we should avoid joke in our criticism. Usually when I try to critique, I start with the positive part, not with bad |

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| introduced a new learning method. But as a university instructor I have not felt the impact of these methods on the students' way of thinking yet. | | | much spoon-fed the information. Ideas are just there. In general, if I can compare students in Saudi with other countries, they are much babied. Not independent. Always dependent on the teacher. So, if the teacher would give more strict analysis and give more questions, students will complain that they are getting hard work. Complain complain complain. So hard so hard so hard. So, what's the sense of having critical thinking if everything is easy? There is no more careful thinking of how to do it.<br><br>I find students here in Saudi to be very lazy; they do not want to listen to criticism. They do not want to open up. They only want what they think is correct and they just do it blindly. There is no deeper | part. Also, the way instructors speak, the tone and the term they used encourage or disappoint students to learn. Most of the students accept my criticism if I used this method.<br><br>I can't answer this question because I am not citizen, but I think it is limited.<br><br>University and Ministry of Education do not emphasize critical thinking skills, nor they do they provide any sessions or workshops relate to it. However, instructors tray to implement critical thinking because they |

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| | | | thinking.<br><br>That is why I do not want to teach studio classes because I get in trouble with my students in Design courses if I ask questions that need deeper analysis.<br><br>This is hard question, I will tell you something. If women in Saudi are not allowed to decide for themselves, they will never get out of the shell and be on their own to do critical thinking. Women in Saudi Arabia always depending on their husband, their father, their uncle, women never empowered. Women can do wonders and that is one thing that is not allowed here. Maybe some political issues or cultural issues" she added that "critical thinking is limited in Saudi Arabia, especially for women, I think men have more freedom to express | know the importance of critical thinking" Also, she claimed that the university do not provide necessary supplemental materials, textbooks, workshops as well as reference in the library. |

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| | | | their opinion.<br><br>Here in Saudi, students are so poor in English. They cannot express their thoughts well, and they cannot write well either. So, most of them, when I ask for essays and for critical thinking questions like this, as long as we see the words that they want to say, we give them the marks with no further explanation.<br><br>I have difficulty because I do not speak Arabic. During discussion time, students although I know they are trying their best to express what they want to say, they cannot find the right words to use. It is why critical thinking is obstructed. For me as a foreign teacher, I cannot fully understand what they are trying to say. | |

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| | | | There are some courses in the university that do not encourage critical thinking. | |

# APPENDIX G

## THEMES

| **THEMES** | **CATEGORIES** | **CODES** |
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| Antecedent Knowledge | Instructors Background | - Demographic Characteristics<br>- Name of University |
| | Instructor Experiences | - Years and place of experiences<br>- Background about critical thinking<br>- Reading books about critical thinking. |
| Ambivalence Perception | Definition | - critical thinking definition<br>- HOTS definition |
| | Importance of critical thinking | - Importance of critical thinking in the curriculum.<br>- Importance to improve students' cognitive ability<br>- Importance to Interior design students. |
| Sage on Stage | Approach of teaching preferences | - Stand –alone courses of critical thinking<br>- Integrate critical thinking in the curriculum. |
| | Strategies in the classroom | - Debates<br>- Discussion<br>- Jury<br>- Design process<br>- Opposite opinions.<br>- Exams |

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| Restriction on Education | Students Interest | - Students are lack of background about critical thinking.<br>- Students prefer easy task.<br>- Students prefer memorizing, spoon feeding.<br>- Students do not enjoy learning.<br>- Lack of knowledge in research |
| | Teacher Interest | - Method of teaching<br>- Motivation |
| | Society and culture | - Society are always waiting government to solve their problem<br>- Society need time to practice critical thinking.<br>- Saudi society consumer more than producer.<br>- Reservation in expressing their free will. |
| | Language issue | - Students lack English proficiency<br>- Verbal and written |
| | Education System | - Lack of support from Ministry of Education.<br>- Lack of resources in the university.<br>- Lack of lectures and sessions about critical thinking. |