

## Sources of Influence Affecting Adult Arab EAP Students' Critical Thinking

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### Abstract

This study reports the results of a survey of adult Gulf Arab students' perceptions of influences that affect the development of their critical thinking skills. Drawing from Terenzini *et al.*'s conceptual model of college influence on student learning (1995), the study explores the impact of the three dimensions of integrated curricula, class-related activities, and out-of-class experiences on Arab students' critical thinking abilities. The study participants are first-year college students enrolled in English for Academic Purposes (EAP) course in a foundation program that prepares them for premedical education at a private American medical college located in Qatar. The survey results indicate students' attitudes towards integrated curricula and out-of-class experiences as the leading contributing factors to the development of their critical thinking skills.

*Keywords:* Critical thinking, Arab ESL learners, Integrated, curriculum, Arabic Speakers

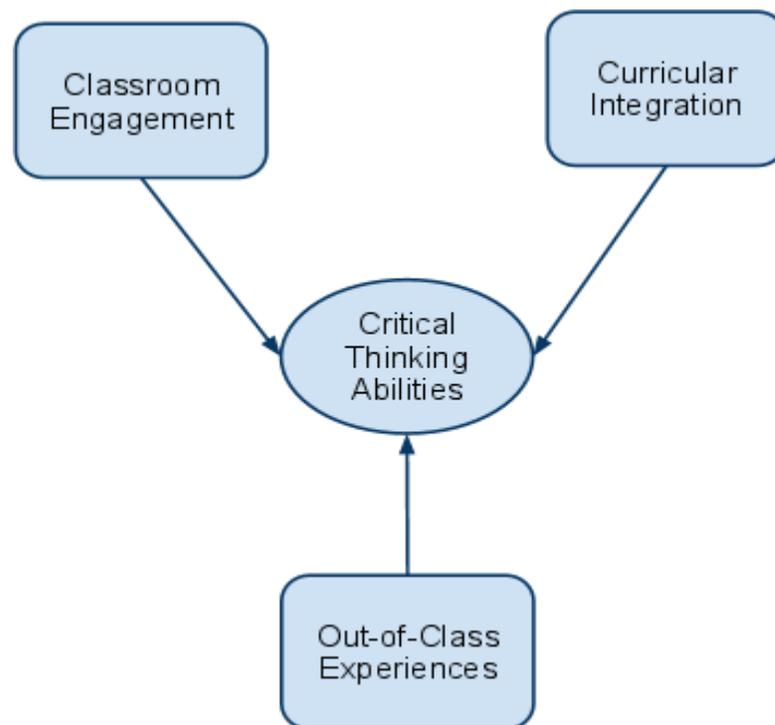
## Introduction

### *Statement of the Problem*

Some educators often point out that Arab students' academic performance in college is weak because they graduate from secondary education systems that rely on rote memorization and neglect critical thinking skills. Not surprisingly, ESL/ELT educators consider these skills essential to their curricula and agree that critical thinking abilities improve students' linguistic proficiency and analytical abilities to succeed in their academic studies and careers. However, there is hardly any research focusing on what English as a second language Arab students perceive to be the sources of influence affecting the development of their critical thinking skills. Thus, this study aims to investigate adult Arab EAP students' perceptions of what contributes to the development of their critical thinking abilities.

### *Conceptual Framework*

The study specifically addresses three dimensions of students' first-year college experience: Curriculum and integration of ideas from different courses, formal classroom and instructional activities, and out-of-class experiences. Figure one illustrates the conceptual model of the three dimensions adapted from Terenzini, Springer, Pascarella, and Nora (1995).



**Fig. 1.** A conceptual framework of three dimensions' influence on students' critical thinking

*Operational Definition*

This study uses the definition of critical thinking as conceptualized by the Critical Thinking Community of the National Council for Excellence in Critical Thinking. Thus, critical thinking is operationally defined as “the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.” The first step in critical thinking is to identify the issue because one cannot discuss an idea without understanding it. The next steps in the process of critical inquiry are to analyze by examining the validity of information and evaluate by judging facts and opinions, biases, assumptions, authority and evidence supporting the idea. After that, an effective critical thinker needs to formulate his or her own hypothesis by thinking more about the idea in question.

**Review of the Literature**

A common complaint heard from educators and employers is that both English-speaking students and English language learners graduate without the requisite critical thinking and problem solving skills that will secure their economic competitiveness. According to Brethower (1977), students tend to forget a significant amount of factual knowledge after they graduate from college. Hence, more and more institutions of higher education and employers are promoting the importance of critical thinking ability not only for academic success but for career performance and economic growth. Indeed, the Partnership for 21st Century Skills, an organization that brings together the business community, education leaders and policy makers, articulated a framework for 21st century learning that emphasized creativity and innovation skills, critical thinking and problem solving, and communication and collaboration skills (2008). Furthermore, in a study by the Massachusetts Institute of Technology, researchers Autor, Levy, and Murnane reported that computerized industries increased the demand for analytic, problem solving, and communications tasks (2003).

Performance that requires critical thinking and problem solving skills is a strong indicator of economic growth and leadership. The National Center on Education and the Economy reinforced the demand for a 21st Century education and skills. In its report by the New Commission on the Skills of the American Workforce, it stated that beyond “strong skills in English, mathematics, technology, and science, as well as literature, history and the arts ... , candidates will have to be comfortable with ideas and abstractions, good at both analysis and synthesis, creative and innovative ...” (2007). Moreover, the Organization for Economic Development and Cooperation Program for International Assessment (PISA) administers an internationally standardized assessment developed by participating economies to fifteen-year-old students to measure their mathematical, reading, scientific literacies and problem-solving. According to Hanushek et al., countries that score well on PISA have a higher Gross Domestic Product (GDP) than countries that do not (2008). Finally, the Association of American Colleges and Universities established essential learning outcomes for higher education that included, among other skills, integrative learning-an important dimension of critical thinking (2007).

The benefits of graduating students with strong critical thinking skills are significant. According to Brookfield (1987), critical thinking is not just an academic activity but a productive process that prepares students to be effective in personal relationships, careers, political

engagement, and responses to the media. To be well-prepared for the 21st century global challenges, students need to be equipped with critical thinking abilities because “students need more than the ability to be better observers; they must know how to apply everything they already know and feel, to evaluate their own thinking, and, especially, to change their behavior as a result of thinking critically” (Norris, 2003). Furthermore, parents’ education, study hours, and extensive reading are all significantly and positively correlated to first-year gains in critical thinking (Terenzini, Springer, Pascarella & Nora, 1995), and integration of ideas from various course curricula is also related to gains in critical thinking (Winter, McClelland, & Stewart, 1981).

Clearly, critical thinking skills foster intellectual curiosity and prepare graduates for employment marketability and community involvement. As the Partnership for 21st Century Skills reported, “Critical thinking empowers [students] to assess the credibility, accuracy and value of information, analyze and evaluate information, make reasoned decisions and take purposeful action” (2008). Moreover, employers and higher education institutions consider critical thinking skills of paramount importance to enable graduates to compete effectively in a globalized 21st century and solve problems in their communities. This emphasis on critical thinking skills suggests a need for research on different students from diverse backgrounds and what contributes to the development of their critical thinking abilities. Students may have a myriad of perceptions as to what sources can influence their critical thinking. Nevertheless, few, if any, studies in the English as a second language literature have examined the impact of the three dimensions of integrated curricula, class-related activities, and out-of-class experiences on the development of critical thinking skills of Arab students studying English for Academic Purposes. Thus, the present study would contribute to the TESOL literature because the participants were the same age group, had a similar range of English proficiency levels, and shared the same linguistic, cultural, and educational context.

### Research Question

One research question asked participants to rank three sources in order of importance and write open responses about any other factors that students perceived to influence their critical thinking.

What influences affect the development of critical thinking skills?

- Integrated curricula (connecting ideas from different courses in the program)
- Class-related activities (student participation, teacher encouragement, interaction among students in class)
- Out-of-class experiences (involvement in activities, interaction with faculty and classmates outside class, time spent studying)

## Method

### *Study Participants*

The study employed a survey research design using the Sources Affecting Critical Thinking (SACT) instrument developed by the researcher. Data were collected during the spring semester of 2011. The sample for the study was 14 Arab students enrolled in four courses—biology, chemistry, physics, and English for Academic Purposes—during their second semester of a foundation year that prepared them for the premedical program at an Ivy League U.S. medical college in the State of Qatar. These 14 students were reasonably representative of the college's population that enrolled approximately 300 premedical and medical students from various Arab countries. The respondents all spoke Arabic as their first language and comprised eight males (57%) and six females (43%). The age group represented was 17-19 years old. The countries represented were Qatar with nine students, Saudi Arabia, Egypt, Jordan, Bahrain, and Iraq with one student each. From this mix of students, it is obvious that not all varieties of Arabic were considered; hence, this study is limited in its generalizability and representation.

Students enrolled in the foundation program of the medical college are graduates of Qatar secondary education representing international, public, semi-public, and private high schools. Before gaining admission to the foundation program, they need to have a minimum of 80 on the Internet Based TOEFL (iBT) or a 6.0 on the International English Language Testing System (IELTS). These two scores are equivalent to 550 TOEFL Paper or 213 Computer-Based TOEFL (CBT). The approximate English proficiency level is high intermediate or low advanced depending on the structures and levels established by programs of English for Academic Purposes.

### *Instrument*

To get the respondents' perceptions of sources that might affect the development of their critical thinking skills, students were asked to complete the Sources Affecting Critical Thinking (SACT) questionnaire made up of selected-response items. First, the questionnaire used a critical thinking operational definition quoted from the Foundation for Critical Thinking that defined critical thinking as "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action." Then the questionnaire asked respondents to rank the three dimensions of Integrated Curricula, Class-related Activities, and Out-of-class Experiences from one to three, with one being the highest and three being the lowest. The questionnaire also included an open-response item that asked participants to write in their own words any other factors or sources that they judged were influences on the development of their critical thinking abilities. Therefore, the questionnaire had a definition of critical thinking that guided the students, three selected-response choices to rank, and an open-response item for students to write their own ideas for sources.

## Results

### *Integrated Curricula*

On the dimension of integrated curricula, which is the number of courses taken and their connection or integrating ideas from different courses, five students (36%) ranked it as the number one source of influence on their critical thinking, four students (28%) ranked it number two, and 36% ranked it number three. Table one shows the results of the curriculum dimension.

**Table 1** Dimension of curriculum as ranked by respondents

Percentage of Respondents	Rank of Curriculum
36%	1
29%	2
36%	3

### *Class-related Activities*

The dimension of class-related activities includes student participation, teacher encouragement, interaction among students in class, and class dynamics in general. Four respondents (29%) ranked it as the highest source of influence on their critical thinking skills, whereas seven students (50%) ranked it as the second source, and three participants (21%) ranked it third. The results of the dimension of class-related activities are shown in table two.

**Table 2** Dimension of class-related activities as ranked by respondents

Percentage of Respondents	Rank of Class-related Activities
29%	1
50%	2
21%	3

### *Out-of-class Experiences*

The dimension of class-related activities includes involvement in activities, interaction with faculty and classmates outside class, and time spent studying. Five students (36%) ranked it as the number one source of impact on the development of their critical thinking skills; three

participants (21%) ranked this dimension as the number two source; and six students (43%) ranked it as the third source of influence on their critical thinking development. Table three shows the results.

**Table 3** Dimension of out-of-class experiences as ranked by respondents

Percentage of Respondents	Rank of Out-of-class Experiences
36%	1
21%	2
43%	3

It can be inferred from these results that the number one source of influence on Arab students' development of critical thinking skills is shared by integrated curricula and out-of-class experiences at 36% each. Moreover, the number two source of influence, as ranked by respondents, was class-related activities.

#### *Additional Findings*

The questionnaire also included an open-response item that asked participants to write in their own words any other factors or sources they judged to be an influence on the development of their critical thinking abilities. Based on students' responses, the themes of reading, exposure to outside experiences, and explicit instruction of critical thinking skills emerged. When asked to write about any factors they perceived to influence the development of their critical thinking, students wrote the following statements:

- Reading for pleasure so we think about we read and evaluate it clearly.
- Our writing class helps me read critically. When I know exactly the usual structure of a paragraph and the topic as a whole, I become more able to analyze any reading passage and predict where to look for information.
- Reading research papers that have related topics to the course and applying the knowledge to different courses.
- The topic or subject being discussed in the curriculum.
- Reading about other points of view and issues.
- Exposure to different points of view and different opinions of an argument.
- Analytical skills, comparison & contrast skills, inference skills.
- Analyze a story or movie (humanities).
- Extracurricular activities (2 responses).
- Traveling abroad and meeting people from different countries.

- What I study in English helps me a lot when I apply it in other subjects because sometimes in biology, for example, we need to read a lot.
- Games of improving brain skills (puzzles, special genius online game, etc) develop brain skills in remembrance and recognition that develop the way of thinking.
- Movies and reading. Detective and real movies help in understanding and developing the way of searching and identifying.
- Reading about things like the human body connected to life and organisms that help in thinking about systems and develop the way in searching, therefore, critical thinking.
- Environment/nature observations (linking life and nature)

Thus, the student open responses can be summarized in such themes as critical reading strategies, analytical and argumentative skills, engagement and exposure to diverse opinions and arguments, and various media sources. It could also be argued that these themes can be encompassed in the overarching theme of explicit instruction of critical thinking methods.

### **Discussion and Pedagogical Implications**

The research question examined in this study was to rank three sources that impact the development of critical thinking skills of Arab students enrolled in an English for Academic Purposes courses as well as other first year courses-biology, chemistry, and physics. The three sources of influence were integrated curricula, classroom engagement, and out-of-class experiences.

Students ranked curricular integration and out-of-class engagement as top sources of influence. This finding implies that students realize the importance of applying ideas they learn in one course to other courses. For instance, learning how to write a comparison/contrast analysis in an English for Academic Purposes writing course is certainly applicable to a first-year biology course where students would have to describe major characteristics of the cell and identify the differences between, for example, prokaryotes and eukaryotes. This is consistent with other studies reported in the literature (Winter, McClelland, and Stewart, 1981; Pike and Banta, 1989; Jones, 1992). When students are explicitly made aware of the interrelatedness of courses taken within a program or major, gains in critical thinking do occur. What can be inferred from this finding is that second language educators need to emphasize the integrative nature of ideas and courses across disciplines and experiment with sequences and combinations of courses across a wide range of disciplines to help students build, develop, and strengthen their analytical reasoning and meta-cognitive skills.

Similarly, the participants' indication of out-of-class experiences as a perceived source of influence implies that students' social involvement in outside meaningful activities has a strong impact on their critical thinking ability. Out-of-class experiences include, but are not limited to, students' interactions with their peers, faculty, and staff, extensive reading of non-assigned books, extra-curricular activities in campus or community organizations, and opportunities for interactions with people of diverse backgrounds. The strong rating of this dimension is further substantiated by their comments in the open-response section of the survey instrument. For example, students wrote about the need for opportunities to travel abroad, meet different people from diverse cultures, be exposed to different points of view and arguments, read for pleasure,

play brain games, watch movies, and more. Likewise, evidence from the literature emphasizes the effect of out-of-class experiences on multiple forms of students' cognitive development (Baxter Magolda, 1987, Terenzini *et al.*, 1995).

Furthermore, this finding implies that teachers of English for Academic Purposes need to create opportunities for cognitive development outside the classroom. Examples might include going to the movies, walking through a park or a nature hunt, visiting museums and historical sites, conducting interviews and surveys, building web pages, attending on-campus and community lectures or debates, and many more activities that stimulate students' thinking. These outside opportunities for learning provide the environment to build students' skills in identifying central issues in arguments, recognizing relationships, gathering, analyzing, and interpreting data, evaluating evidence, and creating new knowledge applicable to their lives. Because these skills are at the core of critical thinking, second language educators need to create a conducive learning environment that encourages students' curiosity and fosters their analytical abilities.

Finally, the most revealing findings of this study were the open-response comments by participants. As stated earlier, students considered other sources that influenced their cognitive development. Examples cited by students included pleasure reading, guided discussions, analysis of readings, critical reading strategies, education abroad, extra-curricular activities, exposure to diverse cultures and opinions, brain games, movies, and environment observations. These responses are critical because teachers need to provide learning opportunities that embed these suggestions in their instruction. This would eventually meet not only the students' linguistic needs but their cognitive ones as well.

### **Limitations and Recommendations for Future Research**

The present study is limited because it is based on a very small sample of students representing a single ethnicity at a single institution. Thus, students' perceptions of sources of impact on their critical thinking may not be representative of students at multi-ethnic institutions. Nevertheless, these students may well be representative of Arab students attending programs of English as a second or foreign language or first year university courses in the Gulf region. Although the students surveyed represented six Arab countries, this research does not claim to be generalizable to all varieties of Arabic. The study is also limited in its duration because it only focused on one semester, while it may be possible that gains in critical thinking abilities can probably happen throughout the full course of students' college experience. More focused research, therefore, is needed to examine the effects on EAP Arab students' critical thinking skills over a long period of time. More in-depth studies are also recommended to investigate other possible sources of influence on Arab students' higher-order thinking and what strategies they use to process, analyze and evaluate information before creating new meaning.

### **Conclusion**

The present study found that Arab students studying English for Academic Purposes need to learn skills that would help them see the connection among ideas in different courses across disciplines. It also concluded that promoting integrative learning, creating learning opportunities outside the traditional classroom, and exposing students to a variety of thinking cultures would develop their critical thinking ability and problem-solving skills. Through this ability, Arab students can be better-prepared to face the challenges of the 21st century.

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**Dr. Rachid Bendriss** teaches English for Academic Purposes (EAP) at Weill Cornell Medical College in Qatar. Prior to coming to Qatar, he taught ESL at the University of Central Florida (UCF) and EAP at Valencia College in Orlando, Florida. He also served as Assistant Director of the Center for Multilingual Multicultural Studies and International Services Center at UCF. Dr. Bendriss' research focuses on reading and writing, teaching with technology, and college academic readiness.

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