Critical Thinking in Higher Education: Faculty and Student Perspectives within an Outcome-Based Framework in Oman

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Abstract

This study investigates the pedagogical integration and application of critical thinking skills within outcome-based classroom settings at a higher learning institution in Oman by addressing the complementing and contrasting perspectives of the faculty and students. The research employed online surveys to gather data from 74 faculty members and 877 students. The research's finding highlights that faculty members perceived highly that they integrate critical thinking skills in their classroom teaching and learning, however, students' perceptions regarding its integration varied. Both groups agree on the importance of emphasizing critical thinking in Omani educational environments. The findings of the study revealed that students showed preference for test questions that tackles their critical thinking skills over rote memorization. However, they may not completely agree with the current methods used to assess critical thinking skills. The students' perception resonates with broader pedagogical discussions.

Keywords: critical thinking; higher education; Oman; outcome-based education

1. Introduction

Critical thinking (CT) is frequently cited in the literature as a key feature in higher education for its ability to produce students who are not only knowledgeable but also analytical, sharp, and proactive. Critical thinking, in essence, is the capability to think lucidly and rationally, understand logical connections between ideas, analyze arguments, and solve problems (Abasaid & Fereira, 2022). While dissecting the concept of critical thinking, certain key components surface. Analysis, for instance, allows for the breakdown of complex ideas into more understandable parts. Evaluation equips individuals to judge the validity and relevance of information, ensuring that decisions are well-informed. Inference permits drawing accurate conclusions from data, while problem-solving encourages the overcoming of obstacles through effective planning and strategizing (Paul & Elder, 1992).

Oman's Vision 2040 outlines a strategy for economic diversification, which is aimed at moving away from oil-dependency towards embracing technological advancements, high-quality education, research while simultaneously maintaining a balance with cultural heritage and modernity (Vision Document, n.d.). As Oman experiences rapid technological growth in the digital era, people living in Oman are required to adapt with agility. This includes consistently assessing the advantages and disadvantages of emerging technologies, understanding their wider societal impacts, and having the skills to engage in problem-solving and innovation (Abasaid & Fereira, 2022). Meeting these challenges requires a strong foundation in CT.

Vision 2040 also places significant emphasis on overhauling the educational system. To truly ensure quality education, integrating CT into the curriculum becomes a priority. Such an integration ensures that graduates from Omani institutions are not merely equipped with theoretical knowledge. Instead, they emerge as thinkers, ready to analyze, infer and problem-solve thus making meaningful contributions to the nation's growth (The Education Council, n,d).

1.1 Significance of Study

The study into the perspectives of both faculty and students regarding the use of CT in classroom instruction is of paramount significance. By investigating these perspectives, educators can gain an understanding of the actual versus perceived integration of CT in pedagogical practices. While this research does not directly investigate the application and integration of CT skills within English classrooms, it focuses on evaluating the extent to which CT is applied in a predominantly English as a Medium of Instruction (EMI) classroom settings. Specifically, the research explores the application of CT skills across various programs in which English serves as the medium of content delivery and English language learning. By examining CT skills in this context, the study seeks to provide insights into the broader pedagogical landscape of how CT skills is applied within academic programs that utilize English. This inquiry not only reveals the pedagogical strategies employed by faculty members but also reveals students' awareness and appreciation of such methods. By identifying if these perspectives contrast or complement each other, the study provides valuable insights into potential gaps in teaching and learning approaches.

1.2 Objectives of Study

The study is centered on exploring the perspectives of faculty members and students within a university setting regarding the integration and application of critical thinking skills. This objective is further broken down into the following:

a. To document the perceptions of faculty members and students regarding the integration and application of CT skills in classroom settings,

b. To analyze the complementing and contrasting views on the integration and application of CT skills in classroom teaching and learning.

1.3 Research Questions

The study aims to address the following research questions.

a. How do faculty members perceive the integration of CT skills into their teaching methodologies?

b. How do students assess their own understanding and application of CT skills as taught in the classroom?

c. How do the perspectives of faculty members and students on CT skills complement and contrast with each other?

2. Literature Review

2.1 Outcome-based Education (OBE) and Critical Thinking (CT) Skills

Traditional education systems often emphasized the acquisition of knowledge, with the focus largely on rote memorization, standardization, and conformity. Learning, in such a context, was perceived as a largely intangible process, defined more by the effort invested in studying or the hours spent in classrooms rather than the tangible outcomes or competencies achieved (Sessums, 2016). However, with the advent of modern pedagogical theories and the increasing emphasis on learn-centric models, there has been a paradigm shift towards outcome-based education (OBE). OBE is a systematic approach to education, which aligns learning activities and assessments with pre-determined learning outcomes. It is designed to ensure that students can demonstrate specific knowledge, skills and attitudes upon the completion of a course or program. In essence, OBE provides a metric, a tangible measure, to what was once considered immeasurable (McNeir, 1993).

The significance of this shift becomes even more pronounced when we consider the assessment of complex cognitive skills such as critical thinking. Critical thinking was once thought to be too abstract to measure (Mohamad, Tukiran, Hanifa and Md Som, 2012). With OBE, assessment has been revolutionized. Now, educators can break down the broad competency of critical thinking into specific, measurable outcomes (Ali, 2019). Through tasks, projects and evaluations designed around such outcomes, educators can gauge the extent to which students are developing and demonstrating critical thinking skills (Collier, Guenther, & Veerman, 2002). OBE, as conceptualized by Sessums (2016) and McNeir (1993 seeks to replace conventional standardized tests with more comprehensive measures of learning outcomes.

Historically, the Omani educational landscape was characterized by examination-oriented systems, standardized assessments, and traditional pedagogical practices. However, these approaches were increasingly seen as restrictive and inadequate for meeting the demands of a changing labor market (Al-Ani, 2017). In response, there was a national shift towards the OBE. Within this framework, higher education institutions (HEIs) in Oman are placing a strong emphasis on integrating CT skills into their programs of study.

2.2 CT Skills in Oman Higher Education Institutions (HEIs)

Al-Mahrooqi and Denman (2020) assessed the CT skills of students at Sultan Qaboos University. The research utilized the Cornell Class-Reasoning Test among students enrolled in humanities and sciences colleges. The study found that the participants generally demonstrated limited mastery of CT skills. The results of the study revealed no significant difference in the participants' fields of study (science or humanities). The research also found gender differences in performance, with female students scoring overall higher than their male counterparts. Furthermore, the results suggest that while college-level students scored higher compared to the foundation-level students, their overall skill in CT remains a concern. The researchers conclude by advocating for widespread educational reform at all levels to enhance the development of CT skills which are essential for students' educational professional, and interpersonal success.

Neisler, Clayton, Al-Barwani, Al Karousi, and Al-Sulaiman (2016) found that students at Sultan Qaboos University as well as in Central America and Iran, showed lower levels of critical thinking compared to students in the US. The study found that students in the College of Education showed more significant improvement than those in other colleges. A study in the US also indicated an increase in critical thinking among teacher education students.

A study by Tuzlukova, Al Busaidi, and Burns (2017) with the Language Center at Sultan Qaboos University found a significant interest in implementing critical thinking in language teaching. Teachers recognized its central role in effective language instruction. They believed that integrating critical thinking skills within a communicative language-learning environment can enhance students' academic success. Despite this recognition, there is a lack of consensus among teachers about the precise definition and application of critical thinking in the English language classroom. This inconsistency indicates a need for targeted professional development for teachers.

Kumar and James (2015) analyzed CT skills abilities among students at Nizwa College of Technology. The research uses Watson-Glaser Critical Thinking model among 281 students enrolled in Engineering, Information Technology and Business programs. A key finding

from the study is the gender difference in CT skills abilities. The male students scored higher in inferencing and interpretation, while the female students scored higher in arguments. When comparing the fields of study, the Engineering students did better in inferencing and deduction, Business students excelled in assumptions and argument while Information Technology scored higher in Interpretation. The research also found that only a small proportion of the participants were consistent with scoring high levels of CT skills in all areas. The authors suggested that CT skills can be incorporated through student-centered activities and advocated for the emphasis of CT skills in higher education institutions for future employment.

Abasaid and Ferreira's (2022) study focused on the concept of CT skills. Utilizing semi-structured interviews, the research explored various aspects of CT skills among faculty members teaching English in a foundation program at a higher education institution in Oman. These aspects included the faculty's initial experience with CT, definition of CT, the attainment of CT skills and the challenges in integrating CT skills into the classroom teaching and learning. A key finding from the study is the lack of universally accepted definition of CT in the Omani context, despite its widespread recognition as a crucial component of educational philosophies. This ambiguity leads to varied interpretations and applications, as reflected in the participants' responses. The paper highlighted a disconnect between the faculty's understanding and application of CT. In addition to that, the paper revealed that despite recognizing the significance of CT, the faculty faced difficulties in implementing CT in their classrooms due to students' lack of proficiency and traditional educational practices.

Al-Kindi and Al-Mekhlafi's (2017) study focused on the application of CT skills in the classrooms of post-basic English-as-Foreign Language (EFL) teachers. The research investigated how teachers foster CT skills in students, examined gender differences, and identified challenges in teaching CT skills. The study involved 30 teachers from 12 schools in Oman, using questionnaire and observation forms for data collection. Findings indicated no significant gender differences in promoting CT skills. However, the study revealed shortcomings in the teachers' approaches to developing CT skills and pinpointed challenges such as course book limitations, large class size, and insufficient teacher training. The study recommended reducing the number of extracurricular responsibilities for teachers to enable them to concentrate more on lesson planning aimed at enhancing CT skills.

The studies on CT skills mentioned in this section indicate the significance of CT in Omani education, spanning from schools to higher education institutions. Although CT is commonly recognized as a key attribute, the challenges persist. Al-Mahrooqi and Denman (2020, pp. 783-784) explained the lack of critical thinking skills in the Sultanate of Oman as follows:

> *"Universities throughout much of the Middle East and North Africa (MENA) region have traditionally been characterized as more concerned with learner memorization and content reproduction than with developing critical thinking skills and intellectual curiosity".*

The previous investigations of CT skills in Oman highlights a common trend where the studies focused on either students or teachers in different university settings. The previous studies emphasized concerns about students' lack of CT skills or teachers did not fully grasp the concept of CT. In contrast, this research addresses a gap by investigating both students and teachers within the same educational settings, by examining the students' and the teachers' perspectives on the application and integration of CT skills in their daily classrooms. This research aims to explore whether the teachers and students perceive CT skills similarly or differently. If there are contrasting views, the study aims to explore the areas the distinctions occur. This understanding may offer valuable insights that may help refine educational strategies and curriculum frameworks. Additionally, despite OBE being a transformative approach for assessing and developing CT skills in Oman, research is needed to investigate OBE practices on the enhancement of CT skills.

3. Methodology

3.1 Context of Study

The study was undertaken at Dhofar University, situated in Dhofar, in southern region of the Sultanate of Oman. All aspects of the research, including the respondents of the survey were intrinsically linked to the institution, establishing Dhofar University as the primary context of the study. Dhofar University (DU) was established in January 2004 as a non-profit institution. DU offers a variety of academic programs ranging from diplomas to master's degrees. The university comprises four colleges: College of Arts and Applied Sciences (CAAS), the College of Engineering (CE), the College of Commerce and Business Administration (CCBA), and the College of Law (CL), along with a Foundation program. Instruction in these colleges is primarily in English, although some specific courses and programs are offered in Arabic. Together, these colleges offer 57 academic programs. DU has been accredited by the Oman Authority for Academic Accreditation and Quality Assurance of Education (OAAAQA). Its student body is predominantly Omani, with a proportion presence of international students. The faculty at the university is diverse, with most members holding PhDs.

3.2 Data Collection

The data collection for this study was conducted through two online surveys: one tailored for faculty members and the other for DU students. Both surveys were written in English and were disseminated to the entire DU community. The research received approval from the Research Ethics Committee. The study adhered to ethical principles, as participation in the surveys was entirely voluntary. All faculty and students were invited to provide their responses online. The sampling method employed was a complete enumeration as it involved DU community, namely faculty and students. Ethical safeguards were included in the survey regarding the purpose of the study, data security measures, and a commitment to disseminate the results in a manner that respects the participants' confidentiality.

3.3 Data Analysis

The collected data was analyzed by the Statistical Package for the Social Sciences (SPSS) version 23. The analysis presented in this paper was primarily focused on descriptive statistics. This allowed the research to understand the basic features and patterns within the data without delving into more complex statistical evaluations. This approach ensured a clear and straightforward interpretation of the responses from the surveys. To address the measurement reliability, normality and reliability assessments were implemented. The normality test provided insights into the distribution of variables. The reliability test, particularly Cronbach's alpha, was used to assess the consistency of the questionnaire items. To ensure the validity of the research instrument, the questionnaire went through a meticulous validation process. First, the content validity was addressed during the questionnaire development as it involved aligning questionnaire items with established studies of CT skills in Oman. Second, subject matter experts in CT skills in the context of Oman reviewed the questionnaire items. Third, the survey was pilot tested and was later refined. The validated survey was distributed through email to all DU students and faculty three months after the process of refinement.

3.4 Demographic Profile of Respondents

The demographic profile of the respondents is divided into, namely, faculty and students. The total number of faculty responded to the survey is 74. The majority of the faculty respondents are male (68 respondents), while the female is composed of 8.1% of the population (6 respondents). The largest represented age group of the respondents is between 40 to 49 years old (50% of the population). College of Arts and Applied Sciences recorded the highest number of respondents (71.6%), followed with College of Law, College of Commerce and Business Administration and College of Engineering. Across these Colleges, the Department of Education at the College of Arts and Applied Sciences has the highest frequency in which it represented 17.6% of the respondents. Regarding the faculty qualifications, 91.9% of the respondents hold a Ph.D. In terms of the overall teaching experience, a significant majority of the respondents have "13 years or more" of teaching experience (60.8%), while when considering the teaching experience specifically at Dhofar University, the most common is 4-6 years.

On the other hand, the highest number of respondents among the students are female (61.3%), while the male students make up for 38.7% of the total respondents. The total number of students responded to the survey is 877. Among the 877 respondents, 38% of the respondents are within 30-39 year olds. In terms of College affiliation, the College of Commerce and Business Administration is the most represented (49.3%), followed with College of Arts and Applied Sciences. Across the Colleges, students from the Bachelor of Arts in Business Administration in Management Information Systems were the most represented of the sample population (13.9%). Table 1 summarizes the demographic profile of the students.

Table 1. Demographic profile of students

Profile		Frequency	Percent
Gender	Male	339	38.7
	Female	538	61.3
	Total	*877*	*100.0*
Age	20-29 years	289	33.0
	30-39 years	333	38.0
	40-49 years	77	8.8
	20 years and below	178	20.3
	Total	*877*	*100.0*
Respondents by College	CAAS	230	26.2
	Law	170	19.4
	CCBA	432	49.3
	CE	45	5.1
	Total	*877*	*100.0*

4. Findings

4.1 Faculty's Perceptions on the Integration of CT into Teaching Methodologies

The results from a survey of 74 faculty members addressed the integration of CT skills in their teaching methods and classroom activities. Across various parameters, ranging from the integration of CT in course syllabi to student engagement in CT tasks, faculty members rated their teaching practices and observations on a scale.

Table 2. Integration of CT skills in Course Syllabi (Faculty Perspective)

	N	Mean	Std. Deviation
Critical thinking skills are incorporated in all the course syllabi that I teach.	74	5.54	1.113
Critical thinking skills are covered and assessed in all the courses I teach.	74	5.43	1.325
Critical thinking skills are covered in all the POSs in my department.	74	5.30	1.155
Critical thinking skills are given higher weight in the courses that I teach in my department.	74	5.01	1.233
Average	**Average**	**5.32**	**-**

Table 3 presents the faculty perspectives on the integration of CT skills in course syllabi. The average mean score is 5.32 reveals a strong inclination towards the incorporation of CT skills, suggesting that faculty members prioritize the inclusion of CT skills in course syllabi. The

item concerning the coverage and assessment of CT skills in courses has a slightly lower mean but with higher standard deviation of 1.325 pointing to more variability in practices.
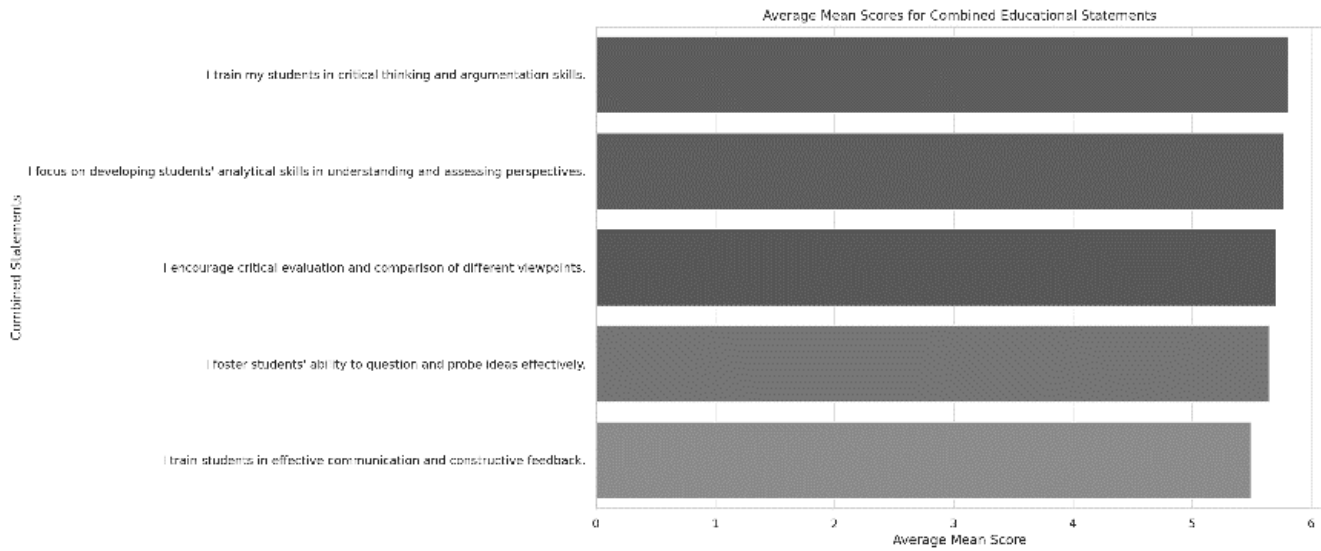

Figure 3. Integration of CT skills in teaching methodologies (Faculty Perspective)

Faculty members perceived positively their active efforts to train students in CT skills, as reflected in Figure 3. In particular, the faculty incorporates methodologies such as debating opinions convincingly, arguing perspectives, distinguishing between valid and invalid arguments. The mean score is 5.99 for training students to argue their opinions and ideas. Visual media seems to be popular and effective, with the statement, "I use a variety of visual media to encourage discussion and interpretation", scoring a mean of 5.68. Most statements related to integrating CT skills in teaching practices have a mean value greater than 5. While faculty members believe they integrate critical thinking into their teaching, there is a variation in how these skills are assessed. For instance, "my assignments have clear and easily identifiable purposes" has a mean score of 5.69 but a relatively high standard deviation of 1.238, indicating some variability in how faculty assess critical thinking skills. Table 4 summarizes faculty perspective on the assessment of CT skills.

Table 4. Assessment of CT skills (Faculty Perspective)

	N	Mean	Std. Deviation
My assignments have clear and easily identifiable purposes.	74	5.69	1.238
I make sure that my assessments have aspect(s) that test application of critical thinking.	74	5.54	1.049
My exam questions require deep rather than superficial inferences.	74	5.39	1.057
My research project or assignment questions require students to appraise or assess or critique based on specific standards and criteria.	74	5.53	1.023

However, when it comes to faculty's perspectives on students' initiatives in seeking out CT activities or the students' enthusiasm and engagement during CT tasks, the scores dropped, as reflected in Table 5. This suggests that while faculty are proactive in teaching these skills, there might be challenges in student engagement or initiative in CT skills.

Table 5. Students' engagement in CT skills (Faculty Perspective)

Combined Statement	N	Mean	Std. Deviation
Students' enthusiasm and participation in CT tasks.	74	4.85	1.235
Students' initiative in seeking out CT exercises and expressing disagreement.	74	4.53	1.263
Students' engagement in practical solution development and critical analysis skills.	74	4.97	1.249
Students' engagement in argumentation and reasoning skills in conflicting situations.	74	5.12	1.27
Students' confidence and problem-solving abilities through CT engagement.	74	5.08	1.32

There is a strong consensus among faculty that CT should be given more emphasis. For instance, "higher weight should be given to critical thinking skills in every course" has a mean of 5.85. Collaboration among students is viewed as essential, as indicated by the high mean of 5.82. The key findings from the survey also highlighted the challenges associated with integrating CT skills in the classroom, as detailed in the following list:

- The faculty believed that while the syllabus might allow for critical thinking, course books might not be as supportive. The mean value for "the lessons in the course books involves students to think critically" is 5.26, but "the course books have scope for brainstorming exercises" is a bit lower at 4.92.

- Faculty seems to have moderate support from their institution to promote critical thinking. The mean value for the statement, "professional development workshops on critical thinking are organized for the faculty members" is 4.84. This suggests a need for more training.

In summary, the findings from the faculty members suggest that while the believe they incorporate CT skills in their courses, there is still room for improvement, especially in terms of assessing these skills, refining course materials, and providing more training opportunities for faculty. Additionally, there is a need to further engage students in proactive CT exercises and tasks.

4.2 Students' Understanding and Application of CT Skills in the Classroom.

All survey items were answered by 877 respondents. The results from the survey provided data on the students' perceptions concerning their understanding and application of CT skills in the classroom.

Table 6. Integration of CT skills in Course Syllabi (Student Perspective)

	N	Mean	Std. Deviation
I am aware that Critical Thinking skills are incorporated in my classroom learning	877	5.21	1.088
I am aware that Critical Thinking skills are covered in all my assessments (example: quiz/ test/ assignment/ project)	877	5.12	1.138
I am aware that Critical Thinking is mentioned in the Course Syllabi	877	4.97	1.102
My course instructors explain about the Course Syllabus at the beginning of the semester	877	5.57	1.169

Table 6 reflects the student perspectives on the integration of CT skills in course syllabi. With 877 respondents, the data indicates a moderate level of awareness of CT skills, and that students are generally aware that CT skills are incorporated in their classroom (mean score 5.21). However, there is a slightly less awareness of CT skills in assessments with a mean score of 5.12.
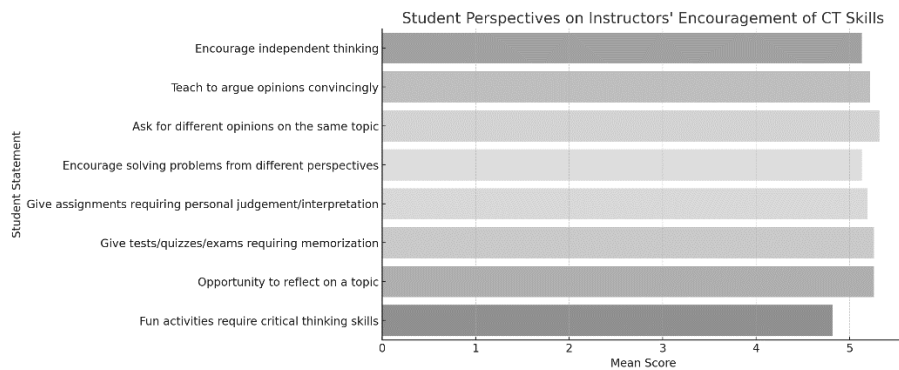

Figure 7. Integration of CT skills in classroom learning (Student Perspective)

Figure 7 presents data on the students' perceptions of the integration of CT and the extent to which CT skills are encouraged by their instructors. Several findings were observed:

- With a mean score of 5.222, the students feel moderately well supported in learning to argue their opinions convincingly.
- The highest mean score of 5.32 is that they perceived their instructors asked for different opinions on the same topic.
- Interestingly, the students perceived that the classroom assessment prepared by their instructors, such as tests, quizzes and exams require memorization of notes. The mean score for this item is 5.26, which is relatively high.

An important finding from the survey is that students least agree with the statement that they prefer memorizing notes rather than solving critical thinking questions in exams, with a mean of 4.61. The highest variability in responses is seen in the statement, "I prefer memorizing notes than to solve critical thinking questions in exams" (Std. deviation of 1.503) suggesting diverse opinions.

Table 8. Students' engagement in CT skills (Student Perspective)

I enjoy working on tasks that require critical thinking skills	877	5.10	1.186
I prefer memorizing notes than to solve critical thinking questions in exams	877	4.61	1.503
My friends and I prefer exam questions with critical thinking skills	877	4.64	1.259
The necessity of acquiring critical thinking skills before graduation.	877	5.51	1.062
The role of critical thinking skills in enhancing my job prospects.	877	5.17	1.164
The need for increased classroom activities focused on critical thinking skills.	877	5.20	1.206
The importance of more group work centered around critical thinking skills.	877	5.30	1.152

Table 8 shows students' engagement in CT skills from their perspective. The data presents a nuanced view of their attitudes and preferences. While the students recognized the importance of CT skills in relation to their academic success and future careers, there is a notable difference in preferences for exam formats. The data revealed that they do not prefer memorization of notes in exam formats (4.61), yet the average mean score for the preference for exam questions that involve CT skills is at 4.64. This data suggests a complex relationship between their enjoyment of CT tasks and their approach to assessment. Other key findings from the survey are that the students' perceived importance of promoting critical thinking skills in the classroom. It has the highest average mean score of approximately 5.4681, indicating students view this as highly important. The students also believed that the course instructors play a pivotal role in emphasizing and teaching these skills. There is a general sense that more can be done in terms of integrating critical thinking in classroom activities and assessments. Furthermore, the data suggests students appreciate when course instructors prioritize and teach CT skills, and they feel there is room for enhancing the integration of critical thinking in classroom activities and assessments. However, there is a variability in the responses, with some items showing more diverse opinions. Despite this variability, students seem to clearly favor the inclusion of more critical thinking elements over mere rote learning. Given these findings, educational institutions might consider re-evaluating their curricula and training instructors to better integrate critical thinking techniques into their teaching methods.

4.3 Complementing and Contrasting Views: Faculty and Students' Perspectives of CT Skills
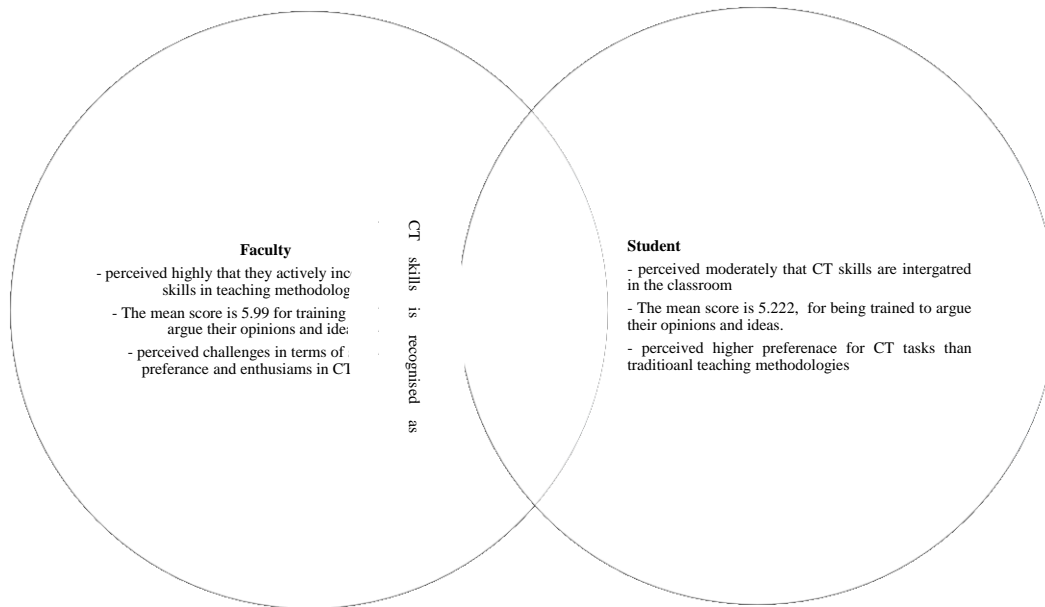

Figure 9. Complementing and contrasting views (faculty vs. student)

Figure 9 shows the complementing and contrasting view the faculty and students had regarding the integration and application of CT skills in classroom settings. Both faculty members and students generally agree on the importance of integrating and emphasizing critical thinking in academic settings. Most mean scores from both groups are above 5, indicating a positive attitude. From the faculty's standpoint, as reflected in Table 3,4,5 and 6, there is a clear indication of the integration of CT skills in teaching. Faculty members perceive themselves as actively incorporating CT skills in course syllabi and employing various teaching methodologies. Students recognize the pivotal role instructors play in emphasizing and teaching critical thinking skills, which aligns with faculty's own perception on their efforts in promoting these skills. Both faculty and students acknowledged that while critical thinking is emphasized, there is room for improvement.

The contrasting views emerged on the extent to which CT skills integrated in teaching methodologies and students' engagement with CT tasks. While faculty perceived highly that they integrate and assess CT skills effectively, particularly in training students to argue their opinions and ideas, the students perceived the instructors' efforts in incorporating CT skills at moderate level and that more training could be done to help them argue their opinions and ideas convincingly. The faculty observed lower enthusiasm and participation in CT tasks among students, indicating a gap between teaching methodologies and students' response. On the other hand, students showed less enthusiasm for memorizing notes for exams and a preference for CT-based exam questions, albeit with a relatively lower mean score (4.61 for memorization preference and 4.64 for CT questions). This suggests that while students value CT skills and recognize their importance for academic success and future career, they may not fully appreciate the way these skills are currently being measured. This discrepancy could also indicate a gap between the perceived value of CT skills and their practical application in high-pressure assessment environments. The relatively high standard deviation also suggests a diversity of opinions among students on these matters.

5. Discussion

This paper investigated the perspectives of faculty members and students at an academic institution in Oman concerning the integration of critical thinking into classroom instruction. Based on the feedback from 74 faculty members, there is a strong inclination towards

emphasizing critical thinking skills. Student feedback, from 877 respondents, reveals a generally positive attitude towards critical thinking skills in their study.

The significance of critical thinking skills in the Omani academic context, as highlighted in this study, aligns with global academic priorities. Our findings suggest that faculty members at Dhofar University prioritize the inclusion of CT skills in course syllabi, with a strong mean score reflecting this commitment. The emphasis on OBE and CT skills in the current pedagogical landscape is supported by the findings of this study in which faculty made efforts to integrate CT skills in their teaching methods and the students' preference for CT-based tasks. The faculty members appear to recognize their crucial role in this pedagogical shift. They seem to be making concerted efforts to integrate argumentation, analysis, and other critical thinking facets into their teaching methodologies. This finding complements Tuzlukova, Al Busaidi and Burn's (2017) study, which stressed the need for Omani educators to include critical thinking into their teaching methods. However, the challenge lies in aligning teaching methods with assessments. This disconnect is not unique to Oman but has been a point of contention in wider pedagogical discussions.

Studies on CT skills in Oman, such as those by Al-Mahrooqi and Denman (2020) and Kumar and James (2015) highlight the need for enhanced understanding and application of CT skills corroborated by our study's findings. The discrepancy between faculty's perception of their teaching methods and students' engagements in CT tasks points to a potential gap in teaching methodologies and student response. This gap is a common theme in CT research in Oman, where the implementation of CT skills often presents a challenge (Abasaid & Ferreira, 2022; Al-Kindi & Al-Mekhlafi, 2017). Al-Kindi and Al-Mekhlafi's (2017) report on the challenges faced by teachers parallels our findings concerning textbooks. Institutional support emerges as a source in this discourse. For faculty to effectively integrate CT skills into their teaching, they need more than just intent. They need training and resources. The emphasis on faculty training resonates with Al-Lamki (2009) findings, which advocate for professional development as a requirement in advancing Omani higher education. Faculty members' efforts in integrating CT into teaching, with methodologies like debating and using visual media complement the recommendations by Tuzlukova, Al-Busaidi and Burns (2017) for Omani educators. The emphasis faculty placed on visual media as an instructive tool is noteworthy. This pedagogical trend aligns with global practices, where visual aids have been recognized for enhancing comprehension and sparking discussion (Collier, Guenther & Veerman, 2002).

Students' preference for CT-based exam questions over memorization (mean score of 4.64) mirrors global trends in educational reform which calls for more analytical and application-oriented learning (Al-Mahrooqi & Denman, 2020). However, while students value CT skills and recognize their importance, they may not fully appreciate the way these skills are currently being measured. This finding echoed the work of Stanger-Hall (2012) in which the study found that the traditional multiple-choice questions often lead students to focus on memorization rather than critical thinking. The study suggests introducing constructed-response questions to gain more cognitively active study behaviours as it encourages students to engage in critical thinking. However, this shift led to increased student resistance. These findings highlight a gap between the perceived value of CT skills and their practical application in high-pressure assessment environments. The discrepancy in student preferences for CT-based exams could indicate the need for re-evaluation of assessment formats to foster and accurately measure CT skills.

6. Conclusion

This study provides insights into the perspectives of faculty members and students at an academic institution in Oman regarding the application and integration of CT skills in the classroom. The findings revealed that faculty members perceived a high emphasis on CT skills in their teaching, particularly through the incorporation of CT skills in course syllabi based on OBE. This integration is viewed as a crucial evidence of the inclusion of CT skills in their classroom teaching and learning. Positive attitudes towards the integration of CT skills in Omani educational environments were observed among students, as evidenced by the responses from 877 participants. The students' perception aligns with global educational priorities that emphasize analytical and application-oriented learning. An important finding emerged from this study is the contrasting views the faculty and students have on the teaching methods and students' engagement in CT tasks. The emphasis on faculty training and resources calls for the need of institutional support for effective integration of CT skills. The students' preference towards CT-based exam questions suggests a demand for assessment formats that foster and effectively measure CT skills. This finding calls for a re-examination of the current assessment practices. This study contributed to the ongoing discussions on the integration of CT skills in Oman's academic environment by identifying the need for institutional support and assessment reform and highlighting the contrasting views of the faculty and students which in turn, provided valuable insights to enhance CT skills in higher education in Oman.

Authors contributions

Dr. Syerina was responsible for the data analysis of the study and the draft of the manuscript. Dr. Khalid Almashiki was responsible for data collection, while Dr. Eman facilitated with the draft of the manuscript, proofreading and formatting of the manuscript. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

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Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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