
RESEARCH ARTICLE

Perceived Barriers to Critical Thinking Development: The Student's View

Saloua Aouaf¹ ✉ Lamiae Azzouzi² and Hamid Housni³

¹*Department of English, Faculty of Letters and Humanities, Moulay Ismail University, Meknes, Morocco*

³*Department of Languages, Communication and Culture, National School of Business and Management, Abdelmalek Essaâdi University, Tangier, Morocco*

Corresponding Author: Saloua Aouaf, **E-mail:** saloua.aouaf@gmail.com

ABSTRACT

Recent research in language learning and teaching has prompted revived attention to developing learners' critical thinking skills. Training learners to think critically serves as a significant opportunity to improve their knowledge and skills, yet it is still a key issue in need of enormous research in terms of its application. Despite its evident importance, the way to enhance students' thinking skills is challenging and impeded by numerous barriers. This survey study sets out learners' perceived barriers to critical thinking in two state Moroccan universities. Surveying 110 EFL students, the respondents were invited to openly comment on the obstacles that hindered their reflection. By way of qualitative content analysis, the results displayed that enhancing critical thinking skills is governed by factors related to teaching, learning and the education system. Amongst the nine challenges the Moroccan students face, lecturing and student content knowledge were reported to be the two major obstacles that significantly influenced the development of critical thinking.

KEYWORDS

Critical thinking, barriers, EFL students

ARTICLE INFORMATION

ACCEPTED: 22 January 2023

PUBLISHED: 04 February 2023

DOI: 10.32996/ijllt.2023.6.2.10

1. Introduction

Education across the globe has become much more aware of the essential role of critical thinking skills. Critical thinking is, therefore, becoming an increasingly major concern in both secondary and higher education. Critical thinking is, generally, the intellectual ability that allows individuals to question and evaluate the validity of communication so as to make rational judgments and wise decisions. Critical thinkers are individuals who are in control of their thinking. They are willing to question and reconsider previous beliefs, assess the validity of communication and consider new perspectives. According to Paul and Elder (2019, p. 9), critical thinking "requires rigorous standards of excellence and mindful command of their use. It entails effective communication and problem-solving abilities, as well as a commitment to overcoming our native egocentrism and sociocentrism".

Training students to think critically does not mean that personal, academic, professional, and economic success is guaranteed, but "it is clearly better than enduring the consequences of making bad decisions and better than burdening friends, family, and all the rest of us with the unwanted and avoidable consequences of those poor choices" (Facione, 2020, p. 2). Equipping learners with critical thinking skills allows them to be evaluative of radical and extremist discourse, "become more flexible, more open to diversity and cultural differences, more aware of some dangers of globalization, and effective global citizens" (Chouari & Nachit, 2016, p. 37). Critical thinking is a 21st-century skill that has a double function; it contributes to personal progress and social development.

In line with the widespread attention critical thinking skills have gained, university attendance is believed to improve learners' critical thinking (Mcmillan, 1987; Songsil et al., 2019). However, the level of students' critical thinking is in short supply (Amrous and Nejmaoui, 2016). There is a considerable gap between students' level of critical thinking skills and the expected outcome of a

graduate student. According to Chouari (2016), there is a wide disparity between what students learn at the university and its impact on their daily life. Several constraints come together to obstruct the implementation of critical thinking education. Prior studies which have been conducted on the topic displayed that the barriers to the development of critical thinking are associated with mainly four factors; (1) academics' teaching and assessment practices, (2) learners' motivation and knowledge, (3) the education structure and institutional reforms as well as (4) the socio-cultural environment.

Recently, Eze et al. (2022) found out that critical thinking skills are impeded by factors related to the lecturer's conventional teaching method, unquestioning deference to authority, student laziness and apathy in critical thinking, and the education infrastructure. The study findings highlighted that the lecturers lack the foundation of thinking critically, and they were not trained to teach it to the students. Students are, on the other hand, uninterested in enhancing their critical thinking skills for it is challenging. However, neither teachers nor students should be blamed if the educational system is not based on instilling critical thinking skills.

In a preliminary study, Mangena and Chabeli (2005) found that teachers' lack of knowledge about critical thinking was reported as the most significant factor. Moreover, they added that the conditioning factors for critical thinking are correlated with teaching and assessment methods, educators' resistance to change, student selection criteria, and student cultural background. It has been observed that socio-cultural factors are considered significant barriers to the development of cognitive skills in collectivist contexts where freedom of expression is discouraged.

For instance, Ku and Ho (2010) and Songsil et al. (2019) assert that, unlike in western societies, it is prevalent for Chinese students to passively accept the teacher's perspective because the students are confronted not to argue with elders. In addition to conformity to authority, the Moroccan context suffers from another factor that negatively influences critical thinking development. Language teaching and learning are much centered on receptive skills (i.e., listening and reading) rather than productive skills (i.e., speaking and writing). EFL students hardly receive teacher feedback or get speaking and writing practice. Consequently, strong student readers and listeners are not necessarily great writers and speakers.

According to Aliakbari and Sadeghdaghghi (2013), more than 60% of teachers agreed that lack of knowledge of critical thinking, difficulty in evaluating learners, and lack of knowledge of how to promote critical thinking are the main obstacles. Although they were aware that teaching methods are influential in enhancing critical thinking and cognitive skills, teachers resisted implementing innovative teaching strategies, for it was challenging to apply new teaching practices. Likewise, some academics use lectures because they resist changing to new innovative teaching strategies.

2. Research Methods

2.1 Research Design and Objective

The current study opts for the use of an exploratory, descriptive research design to elicit information from students. We resorted to this research design in order to explore the perceived factors that hinder critical thinking development. The main research question that the present study seeks to answer is the following; what are students' perceived barriers to the development of critical thinking skills?

2.2 Respondents

Using questionnaires, we collected data from EFL Moroccan students at two state universities; Moulay Ismail University (MIU) in Meknes and Sidi Mohamed Ben Abdellah University (SMBAU) in Fes. The two universities are open-access institutions and do not require any language tests. The selection of the respondents was conducted using simple random sampling. Altogether, as some of the questionnaires were not completed, 28 drafts were disregarded and 110 were utilized. With regard to gender, female respondents formed 62.7% while male respondents represented 37.3%. The table below illustrates the respondents we have reached.

Table. Demographic information of the respondents

Gender		Education level				University affiliation		Total
Females	Males	1 st year	2 nd year	3 rd year	Master	MIU	S MBAU	
69 (62.7%)	41 (37.3%)	20 (18.2%)	38 (34.5%)	39 (35.5%)	12 (7.3%)	67 (60.9%)	43 (39.1%)	110 (100%)

2.3 Instrumentation

In gathering data, we opted for questionnaires, which were completed anonymously by the respondents. The data were collected during the spring semester of 2021-2022. The administered questionnaire consisted of two main parts. The first part was composed of student demographic information, namely gender, education level, and university affiliation. The second part comprised

questions related to the issue under study. In eliciting the barriers to critical thinking skills, we opted for open-ended questions so that we can cover all possible answers that the respondents wish to voice.

2.4 Data Analysis

The analysis of the responses was conducted using patterns of meaning based on Braun and Clarke (2006) and Radnor (2002). Accordingly, students' transcripts were identified by recurring ideas and then coded and categorized by themes and sub-themes. Codes were organized from the most repeated to the least repeated patterns.

3. Results and Discussions

Generally, the analysis of the data's key aspects yielded nine perceived barriers to the development of critical thinking skills. The reported barriers embrace three main factors to thinking critically. For purposes of illustration, some of the respondents' testimonies will be provided below.

3.1 Teaching Factors

Lectures. The results were in support that the lecture is the dominant teaching practice in English modules. This result accords with other previous works in which it was argued that the lecture is still the dominant method in a number of universities (Chouari, 2016; Duron et al., 2006; Manan et al., 2021). The vast majority of the respondents reported that this method of teaching was the most significant factor that hindered their reflection. The respondents explained that this teaching strategy allowed no chance to exchange ideas and discuss the course content. It was also stated that information retention was impeded by delivering content. One of the respondents argued, *"Giving lessons without discussing it, it makes me forget the information quickly"*. Reacting to what hindered your reflection, a respondent stated, *"When a proffeseur just keep talking without debating with us, he just give the course without opening the floor for questions"*.

This result is inconsistent with the study conducted by Aliakbari and Sadeghdaghighi (2013) who found that the lecture was not the most significant factor. In an experimental study, Songsil et al. (2019) compared students who were exposed to the revised Argument-Driven Inquiry and students who were taught by the conventional approach. Although they witnessed cognitive development in both groups, their findings revealed that the experimental group who were engaged in basic writing, critical thinking, and data interpretation and analysis outperformed the students of the control group in argument skills. Geertsen (2013), and Zireva and Letseka (2013) argue that monologic teaching cannot be consistent with encouraging students to think critically. Stating so, the lecture is unstimulating, uninspiring and discourages intellectual engagement. A shift is urgently needed from *what to teach to how to teach*.

Teacher Guidance and Feedback. Lack of contact during remote education was an example of the obstacles that the students experienced. The findings revealed that critical thinking skills were hindered due to the lack of interaction between students, and their teachers. Additionally, the lack of teacher guidance and feedback left a huge impact on learners' self-esteem and motivation which negatively influenced their performance and learning progress. One of the respondents noted, *"Distance education during the pandemic did not improve our learning progress due to the lack of interaction between students and professors"*. The participants also stated that, without their teacher's feedback, they procrastinated. For instance, one student explained, *"Study at distance was good and bad. It enhance the way I search for information. It hinder my thinking because sometimes I don't know what I'm supposed to do or study, or if I'm doing the right thing"*.

Several studies confirmed that teacher and peer feedback is a significant factor that affects critical thinking development and learning achievement. For example, a study conducted by Wambsganss et al. (2020) confirmed that individual feedback was helpful in developing students' reasoning and argumentative writing skills. Richardson et al. (2007) attested that peer feedback has positively impacted students' sub-skills of critical thinking, namely deduction inference and evaluation skills.

The Use of Reports. Assigning reports to students was perceived as another barrier to the enhancement of critical thinking. Although pre-assigned topics allowed learners to be prepared for the lesson, some respondents stated that reporting the weekly readings does not help them in improving their reflective thinking. A master's student responded to what hindered your reflection, *"reports, because you are only supposed to report what you have read or watched without providing any kind of opinion or criticism"*.

As an assignment, EFL Moroccan master's students are asked to read some journal articles or book chapters and write a summary of what they have understood. The use of reports is a way to ensure that they have read the assigned scholarly works. Students have the chance to review and reflect upon the content only during the weekly session. According to a study conducted by Bezanilla et al. (2019), the majority of teachers from Spain and Latin America agreed that written and oral argumentation and synthesis of resources are the driving forces behind cognitive development. Inconsistent with our result, Fink (2003) believes that writing helps students to be engaged in active learning and alter their critical thinking skills.

3.2 Learning Factors

Prior Knowledge. As a way to remedy the use of the lecture, some respondents perceived the use of questions as an effective way to boost memory, talk and thinking. A body of literature has documented the merits of using questions and inquiries in improving learners' thinking skills (Abrami et al., 2015; Lee et al., 2010; Piergiovanni, 2014; Walker, 2003). However, another stream of respondents viewed the use of questions as a barrier. This was reported as the second significant factor. The respondents found the use of questions challenging because of their limited content knowledge. It was reported that asking difficult questions might leave no room for debating. One of the respondents noted

The learning [teaching] strategy which hindered my reflection is being asked to give my critical opinion about a subject that is new to me. One of the most important elements of Critical Thinking is to have a pre-requisite knowledge so the comment will be objective and not based on our own point of view, culture, or background. This is crucial to produce a correct critical thinking, or even a thinking in general.

Students do not participate in the classroom because they have little prior knowledge about the course content. Given that critical thinking is built on prior knowledge, a limited understanding of a subject matter prevents advancing new innovative ideas and improving critical thinking skills. This finding is in accord with the ideas of Geertsen (2013), who argues that implementing critical thinking skills across domains is more challenging, regardless of past experiences or received training. This can be explained by the fact that cognitive development necessitates and is based on the acquisition and construction of knowledge. Glaser's (1984) review of previous studies also confirms that the development of thinking and problem-solving skills is reliant on the way of teaching and using knowledge.

Language Proficiency. Lack of participation on the part of the learners is also due to language problems. Language fluency was perceived as a linguistic and communicative barrier that distorts class discussions and debates. The respondents reported that they feel short of words when speaking in class. One of the respondents argued, *"Actually, speaking is the hardest strategy that hindered my reflection and block me especially in the classe"*. In the same vein, another respondent added that critical thinking is hindered by the *"Lack of the huge vocabulary that will help you in your learning"*.

Many learners accept their roles to be passive information receivers and avoid class participation because of their lack of effective communicative skills. This obstacle is even more embracing for shy and insecure learners because they are afraid of what their peers and teachers may think of them. Ouakrime (2018) asserts that students' poor language and communicative skills are due to the limited opportunities they have outside the classroom.

However, we believe it is a matter of perception and motivation rather than an issue of the number of opportunities students have available to them. At Moulay Ismail University, very few students attend the complimentary English clubs the English Department provides. Today, as English is an international language, there are many opportunities for EFL students to enhance their English communication skills.

Over-reliance on Teachers. The results revealed students' excessive dependency on their teachers. It was found that learning is still teacher-dependent. Amid distance teaching, some respondents stated that they felt lost because they had not received enough explanations. These students could not manage their studies without being provided with their teachers' elucidations. Responding to what teaching or learning strategy hindered your thinking skills, a respondent stated, *"I think it is depend on the teacher or the professor. It doesn't mater which way he/she teaches us, but if the professor know what he/she is doing, that's good"*. In line, when a participant was asked about her remote education experience, she commented, *"It was so bad, I didn't get the enough explanations of the lessons"*.

The respondents' testimonies revealed that they are very reluctant and dependent on their teachers to provide them with the course content and explanation. Information consumption is highly desired and wanted. This over-reliance on teachers limits the learners' participation and prevents the improvement of social skills. According to Jamiai and El Karfa (2022), one of the constraining factors of critical thinking skills is students' lack of motivation. They highlight that learners conceive their roles as passive recipients and consumers of knowledge while their teachers' roles as knowledge knowers and givers. Learners' misconception of their roles reduces their learning motivation and impedes the development of critical thinking skills.

Rote Learning. The findings showed that memorizing the course content was the major concern and focus of the students. The respondents' answers manifested that learning is mere memorization of what has been received. For instance, a respondent asserted, *"I think when we debate about something and try to convince others, we memorize it more"*. Following the same thought stream, another respondent affirmed, *"I prefer to have visual teaching because it make it easy for me to memorize well information"*.

The results revealed that some respondents do not seem to focus on improving their critical thinking. While memorization is the basis to analyze and evaluate information, the learners' sole concern is to boost their memory and retrieve information.

Accordingly, some students study without understanding and depreciate being engaged in higher-order thinking skills for thinking critically requires perseverance and diligence. Such learners refuse to take responsibility for their own learning. Ouakrime (2018) upholds that students perceive themselves as passive recipients of knowledge that is passed on by their teachers. In the same vein, Khairallah et al. (2020) explain that some learners were not listening to their teacher during metacognitive activities because they considered such activities a burden. The students were also dissatisfied with the shift made to product-oriented assessment.

Memorizing the course content is not a mere responsibility of students. Student perceptions are limited by teacher knowledge and thinking. Many teachers impose their way of thinking and interpretation, leading learners to limit their thinking to what has been presented in the classroom. During end-of-term examinations, teachers' expectations force students not to use critical thinking freely. In this situation, students cannot take risks and in consequence get lower grades. An instance of that is the module of Guided Reading in semester one where, in many cases, students are required to analyze literary works based on the teacher's interpretation. This seems to be inherited in the Moroccan culture, which is supported by the famous Moroccan expression: "بضاعتنا ردت إلينا". This implies that the received course content and teacher explanation are to be consumed by students and returned to the teacher on the day of the exam.

3.3 The Education System Factors

Lack of Practice. Due to the lack of practical exercises, some respondents expressed their dissatisfaction with the way they are taught. While direct instruction of critical thinking was reported to be useful for enhancing cognitive abilities, the theory-practice gap resulted in students' inability to implement the acquired knowledge in real-life situations. Further, the results revealed that delivering content is neither a mere responsibility of academics who mostly use lectures nor learners who show indifference to critical thinking dispositions, but it is also an issue of a whole education system that is predominantly based on knowledge sharing. One of the respondents explained:

This semester (s5), I studied critical thinking and it helped me think more sufficiently when it comes to verifying the information and news I receive. However, the educational system is based on theory for the most part. we were bombarded with a lot of theory without much practice, therefore i did not benefit from this module as much as i thought i would.

This result is in accordance with that of Chouari (2016), who examined Semester 5 students' perceptions of the course *Critical Thinking and Analysis* at Moulay Ismail University of Meknes. Despite their satisfaction with the course, the participants objected to the theory-practice gap and lack of real-world applications. A large body of studies proved that direct instruction of critical thinking and reasoning skills is correlated with the development of such cognitive skills (Hadi et al., 2018; Kabataş Memiş & Çakan Akkaş, 2020; Lee et al., 2010; Sampson et al., 2011; Songsil et al., 2019). However, it is irrelevant if students cannot relate what they have learned to real-life issues.

Several scholars maintain that lack of practice negatively influences the cultivation of learner thinking. For example, Aliakbari and Sadeghdaghighi (2013) and Butchart et al. (2009) confirmed that lack of practice is a factor affecting the development of critical thinking and argument skills. In the absence of training learners' thinking skills, content-intensive courses slow down the thinking process and cognitive development. Covering more content does not necessarily mean that learners are learning let alone that they are developing their thinking skills.

The Education Infrastructure. Some respondents regarded the education system and curriculum as other major barriers to developing critical thinking skills. The testimonies display that Moroccan learners are disengaged with critical thinking from basic to secondary education. The learners are introduced to critical thinking at a later level in higher education. A respondent highlighted that stating learning objectives at the beginning of the course is a prominent factor that enhances students' willingness and motivation.

Critical thinking skills are not something that should be presented to the students suddenly. In our Morocco system, the students are used to spoon feeding in elementary, junior high school and high schools. The shift to higher education should be executed with careful thought. Also the value of critical thinking skills should be presented first so that it attracts students.

The education system has a major impact on how students learn and teachers teach. Eze et al. (2022) contend that blaming students is a crude approach as it ignores the sociocultural, economic and academic factors that profoundly influence the development of critical thinking. According to Mangena and Chabeli (2005), the selection criteria of students do not have the foundation basis of critical thinking skills.

Locally, the efforts made for purposes of sustainability and development have been unsuccessful in improving the quality of education. The Moroccan education system at primary, secondary and tertiary levels is still structurally weak and could succeed only in increasing student enrollment (El Kaidi, 2018). Reaching high outpacing enrollment rates came only at the expense of the quality of education.

Further, given the considerable importance of critical thinking, novice learners may have no idea why they need to exchange information in the classroom. Many students are demotivated to think critically because they do not understand the point of doing so. A sudden change at the university level without clearly stating the course description and objectives distracts learners' attention and leads to adverse outcomes. Why should students care about using critical thinking anyways? The answer to this question should be raised and discussed during university classes.

4. Conclusion

The present study sought to find out the barriers that hinder the enhancement of critical thinking as perceived by EFL students. The results revealed that improving critical thinking skills is mainly conditioned by factors related to teaching, learning and the education system. The constraining factors of critical thinking enhancement were found to be related to the use of lectures, student prior knowledge, language proficiency, student over-dependence on teachers, student learning strategy and motivation, teacher feedback, theory-practice gap, education system and the use of reports. Although the development of critical thinking is a shared responsibility between teachers, students and decision-makers, teaching and assessment methods are major influential factors that have a direct impact on class participation, learning strategies, and student motivation.

Further studies on the topic are highly recommended. The findings of this study reported only the students' perceived barriers to critical thinking. Therefore, limiting the study to only students of English call for additional research of this type with EFL teachers to report their perceived barriers to the development of learners' critical thinking skills. On account of using questionnaires, we also believe that critical thinking merits further qualitative studies to examine the issue in a more in-depth way. As change comes gradually, critical thinking skills must be an integral part of the curriculum from primary school up to higher education. To this end, higher-order thinking skills should be a top priority in order to help learners grow as independent thinkers.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

References

- [1] Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. I., Wade, C. A., & Persson, T. (2015). Strategies for Teaching Students to Think Critically: A Meta-Analysis. *Review of Educational Research*, 85(2), 275–314. <https://doi.org/10.3102/0034654314551063>
- [2] Aliakbari, M., & Sadeghdaghighi, A. (2013). Teachers' Perception of the Barriers to Critical Thinking. *Procedia - Social and Behavioral Sciences*, 70, 1–5. <https://doi.org/10.1016/j.sbspro.2013.01.031>
- [3] Amrous, N., & Nejmaoui, N. (2016). A Developmental Approach to the Use of Critical Thinking Skills in Writing: The Case of Moroccan EFL University Students. *Arab World English Journal*, 142–156. <https://ssrn.com/abstract=2895546Electroniccopyavailableat:https://ssrn.com/abstract=2895546Electroniccopyavailableat:https://ssrn.com/abstract=2895546>
- [4] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- [5] Butchart, S., Bigelow, J., Oppy, G., Forster, D., Serrenti, A., Korb, K., & Gold, I. (2009). Improving critical thinking using web based argument mapping exercises with automated feedback. *Australasian Journal of Educational Technology*, 25(2), 268–291. <https://doi.org/10.14742/AJET.1154>
- [6] Chouari, A. (2016). Teaching Critical Thinking in Moroccan Higher Education: Challenges and Opportunities. *Arab World English Journal*, 7(2), 457–467. <https://doi.org/10.24093/awej/vol7no2.31>
- [7] Chouari, A., & Nachit, M. (2016). Teaching and Assessing 21st Century Critical Thinking Skills in Morocco: A Case Study. *Arab World English Journal*, 7(4), 21–41. <https://doi.org/10.24093/awej/vol7no4.3>
- [8] Duron, R., Limbach, B., & Waugh, W. (2006). Critical Thinking Framework For Any Discipline. *International Journal of Teaching and Learning in Higher Education*, 17(2), 160–166. <http://www.isetl.org/ijtlhe/>
- [9] El Kaidi, Y. (2018). *Educational Reforms in Morocco: A Chronology of Failures*. <https://insidearabia.com/educational-reforms-morocco-failures/>
- [10] Eze, I. F., Iwu, C. G., & Dubihlela, J. (2022). Students' views regarding the barriers to learning critical thinking. *International Journal of Research in Business and Social Science (2147- 4478)*, 11(4), 355–364. <https://doi.org/10.20525/ijrbs.v11i4.1797>
- [11] Facione, P. A. (1992). *Critical Thinking: What It Is and Why It Counts*. https://www.student.uwa.edu.au/_data/assets/pdf_file/0003/1922502/Critical-Thinking-What-it-is-and-why-it-counts.pdf
- [12] Fink, L. D. (2003). *A Self-Directed Guide to Designing Courses for Significant Learning Designing Courses for Significant Learning*.
- [13] Glaser, R. (1984). *Education and Thinking: The Role of Knowledge*.
- [14] Hadi, S. A., Susantini, E., & Agustini, R. (2018). Training of Students' Critical Thinking Skills through the implementation of a Modified Free Inquiry Model. *Journal of Physics: Conference Series*, 947(1). <https://doi.org/10.1088/1742-6596/947/1/012063>
- [15] Jamiai, A., & el Karfa, A. (2022). Critical Thinking Practice in Foreign Language Education Classrooms. *European Journal of English Language Teaching*, 7(3), 114–125. <https://doi.org/10.46827/ejel.v7i3.4322>
- [16] Kabataş Memiş, E., & Çakan Akkaş, B. N. (2020). Developing critical thinking skills in the thinking-discussion-writing cycle: the argumentation-based inquiry approach. *Asia Pacific Education Review*, 21(3), 441–453. <https://doi.org/10.1007/s12564-020-09635-z>

- [17] Khairallah, M., Fleonova, O., & Nicolas, M. O. (2020). Understanding Students' Resistance to Autonomous Learning in an L2 English Language Course at a University in Lebanon. *European Journal of Education*, 3(1), 20–38.
- [18] Lee, W. J., Puspitasari, K. A., Kim, H. Y., & Jeong, A. (2010). *The effects of guided inquiry questions on students' critical thinking skills and satisfaction in online argumentation*. 156–162.
- [19] Manan, S. A., David, M. K., & Haidar, S. (2021). *Soft Skills, Policies, Practices, and Self-Assessment: Employability Challenges and Opportunities of University Graduates in Pakistan*. *Journal of Educational Sciences & Research*.
<https://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=8&sid=19e68faf-e356-4b69-af2b-91d70f783b8c%40sessionmgr4006>
- [20] Mangena, A., & Chabeli, M. M. (2005). Strategies to overcome obstacles in the facilitation of critical thinking in nursing education. *Nurse Education Today*, 25(4), 291–298. <https://doi.org/10.1016/j.nedt.2005.01.012>
- [21] Mcmillan, J. H. (1987). Enhancing College Students' Critical Thinking: A Review of Studies. In *Source: Research in Higher Education* (Vol. 26, Issue 1). <http://www.jstor.orgURL:http://www.jstor.org/stable/40195772Accessed:30-11-201515:40UTC>
- [22] Ouakrime, M. (2018). Purposes of E.L.T. in Morocco revisited. *Issues in Applied Language Studies: A Special Reference to ELT in Morocco*, 21–38.
- [23] Paul, R., & Elder, L. (2019). *The Miniature Guide to Critical Thinking: Concepts and Tools* (8th ed., Vol. 33). Rowman & Littlefield.
- [24] Piergiovanni, P. R. (2014). Creating a Critical Thinker. <http://Dx.Doi.Org/10.1080/87567555.2014.896775>, 62(3), 86–93.
<https://doi.org/10.1080/87567555.2014.896775>
- [25] Radnor, H. A. (2002). *Researching your professional practice: Doing interpretive research*. London: Open University Press.
- [26] Richardson, J. C., Ertmer, P., Lehman, J., & Newby, T. (2007, October). Using Peer Feedback in Online Discussions to Improve Critical Thinking. In *Proceedings of the Annual Meeting of the Association for Educational Communications and Technology*.
- [27] Sampson, V., Grooms, J., & Walker, J. P. (2011). Argument-Driven Inquiry as a way to help students learn how to participate in scientific argumentation and craft written arguments: An exploratory study. *Science Education*, 95(2), 217–257. <https://doi.org/10.1002/sc.20421>
- [28] Songsil, W., Pongsophon, P., Boonsoong, B., & Clarke, A. (2019). Developing scientific argumentation strategies using revised argument-driven inquiry (rADI) in science classrooms in Thailand Asia-Pacific Science Education. *Asia-Pacific Science Education*, 5(1).
<https://doi.org/10.1186/s41029-019-0035-x>
- [29] Walker, S. E. (2003). Active Learning Strategies to Promote Critical Thinking. *Journal of Athletic Training*, 38(3), 263.
[/pmc/articles/PMC233182/](http://pmc/articles/PMC233182/)
- [30] Wambsganss, T., Niklaus, C., Cetto, M., Söllner, M., Handschuh, S., & Leimeister, J. M. (2020). AL: An Adaptive Learning Support System for Argumentation Skills. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–14.
<https://doi.org/10.1145/3313831.3376732>