

THE RELATIONSHIP BETWEEN TEACHERS' LEVEL OF USE OF CRITICAL THINKING AND THEIR ATTITUDES

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Abstract: The integration of critical thinking within the classroom is indispensable, serving as a cornerstone that significantly enhances the overall educational experience. By providing essential support to teachers in executing their versatile responsibilities, it not only empowers educators but also fosters an environment where students can acquire knowledge more efficiently. In the context of Morocco, prevailing research underscores the paramount significance of critical thinking within higher education institutions. However, a critical gap exists as limited attention has been dedicated to the incorporation of critical thinking within the framework of Moroccan high schools. Indeed, a substantial number of high school graduates emerge without the proficient critical thinking abilities crucial for success in the dynamic world beyond academia. Consequently, there is an urgent imperative to introduce critical thinking skills into the educational landscape to facilitate the holistic development of students, nurturing not only their academic abilities but also their problem-solving skills and sound decision-making capabilities. This research endeavor, therefore, seeks to embark on an insightful exploration, delving into the potential correlation between teachers' levels of use of critical thinking and their underlying attitudes. This investigation holds the promise of offering important insights into the effectiveness of integrating critical thinking into Moroccan high schools, thereby contributing to the ongoing discourse on educational enhancement and reform.

Keywords: Attitudes; correlation; critical thinking; level; teachers

INTRODUCTION

Currently, a multitude of educators emphasize the significance of imparting critical thinking skills, yet there exists a plethora of information regarding its true essence. The concept of critical thinking is indeed multifaceted, as its inherent nature proves challenging to precisely define; various scholars hold distinct viewpoints on what constitutes critical thinking. The absence of a widespread consensus in delineating critical thinking leads to instructional challenges, complicating both the teaching process and the evaluation of its attainment (Munir, 2012). De Bono (2005) said that the term "critical" stems from the Greek word "Kritikos," signifying "judge" (p. 15). Building upon this notion, Garrison (1992) further expounded that "being critical entails making judgments and refraining from accepting things unquestioningly" (p. 138).

Watson and Glaser (1980) defined critical thinking as "a bundle of skills, knowledge, and attitudes which enables the individuals in making inferences, deductions,

interpretations, recognizing the assumptions, as well as evaluating the arguments" (p. 134). Facione (2006) said that critical thinking includes essential factors like analysis, evaluation, inference, interpretation, explanation, and self-regulation. Hooks (2010) described critical thinking as "first discovering the who, what, where, and how of things, and then utilizing that knowledge in a manner that enables individuals to determine what matters most." (p. 9).

The speedy growth in technology has brought prominent and noteworthy changes in the twenty-first century and affected the needs of learners in modern society. In the face of these fast changes, people confront numerous challenges and difficulties, which necessitate them to adapt to them and to be able to make the right choice from among many possibilities after evaluating them carefully (Alhammouri & Alwahr, 1998). In this sense, launching profound changes in the field of education is required in order to meet the needs of learners. In other words, students need certain skills that can help them evaluate the information they access. The point to

make here is that the main aim of all instructors is to provide learners with the important resources to comprehend the content of the materials being taught in the class, and to encourage them to become independent problem solvers (Bransford et al., 2000). More specifically, students require critical thinking skills to be successful in finding solutions to problems in everyday life. Instructors should be capable to integrate this crucial skill in their classrooms so as to encourage learners become powerful critical thinkers. Also, the present and future job markets will need graduates who own qualities that involve leadership, teamwork, problem-solving, time management, critical thinking, and global awareness (Bassett, 2005).

Literature Review

Critical thinking holds immense importance due to its indispensability in professional settings, its applicability in addressing intellectual and spiritual inquiries, and its potential to serve as a tool for appraising individuals, policies, and institutions, thus aiding in the resolution of societal issues (Hatcher & Spencer, 2005). Kivunja (2015) provided a comprehensive definition, depicting critical thinking as a cognitive process that enables the interpretation, analysis, and evaluation of information, arguments, or experiences while employing a collection of reflective attitudes, skills, and capacities to steer one's thoughts, convictions, and deeds (p. 431). Expanding on this viewpoint, Astleitner (2007) asserted that critical thinking is a higher-order cognitive skill encompassing the evaluation of arguments, characterized by purposeful, self-regulated judgment culminating in the acts of interpretation, analysis, evaluation, and inference. Integral to critical thinking is a genuine endeavor to recognize, dissect, and assess the rationale, premises, and conclusions of opposing viewpoints (Possin, 2008). In today's society, marked by the proliferation of the Internet, critical thinking

is postulated as a fundamental educational objective, as learners must enhance this skill to navigate the complex landscape of information (Howard et al., 2015).

Critical thinking has attracted the attention of numerous researchers who are interested in the field of critical thinking. In other words, critical thinking, as an essential issue in the present world, has been the focus of numerous works in recent years. Gelder (2005) highlighted that allowing learners to think critically is a crucial aim of education. For Norris (1985), critical thinking is not an educational option and all learners should be taught to think critically; traditional methods of the easy transfer of information and learning by memorization are no longer enough. Broadly, it is important to understand that even in highly developed educational systems like the USA, studies by Trilling and Fadel (2009) revealed that learners graduating at all levels, involving schools and universities, lacked critical thinking and problem-solving skills. In addition to these works, Hove (2011) conducted a study about the development of critical thinking in high schools. The primary purpose of the research was to examine the effect of teaching critical thinking strategies on learners thinking skills. The results showed that the performance of those students who were taught by critical thinking strategies were better than the others.

Exploring the realm of critical thinking holds significant importance, not only for learners of English as a Foreign Language (EFL) but also for language instructors themselves. It is widely acknowledged among educators that critical thinking constitutes a complex and intricate process, as emphasized by Wade (2009). Hence, it is advisable for educators to proactively seek methods to diminish resistance to this process, aiming to equip learners with the essential tools for making informed choices, recognizing novel opportunities, reducing bias through heightened comprehension, and engaging effectively in a globally

interconnected society, as articulated by Halpern (2009).

Halpern further stipulated that to cultivate critical thinking skills in learners, direct and explicit instruction is imperative. This involves integrating these skills into lesson plans, allowing learners to internalize and subsequently apply these skills across various subject areas. It's noteworthy that educators who possess well-developed critical thinking abilities are better positioned to foster the same skills in their students, as pointed out by Evans (2008).

In a study conducted by Stapleton (2011), an investigation into the critical thinking proficiency of teachers was carried out. The study's outcomes unequivocally indicated that although critical thinking is a designated component of the curriculum in Hong Kong, a considerable number of high school teachers are not sufficiently acquainted with the skills associated with critical thinking or the methods for effectively teaching it.

McGuinness (2005) illustrated the significance of developing critical thinking skills to students in order to allow them to develop into higher-level thinkers, and as a consequence get them ready to grow into tomorrow's leaders. In this respect, Shirkhani and Fahim (2011) said that learners who display well-enhanced critical thinking skills indicate a profound capability to finish difficult assignments over their peers with less advanced critical thinking skills. Therefore, modifications in pedagogy are necessary for offering learners chances to exercise critical thinking skills through the employment of their target language (Rezaei et al., 2011).

In Morocco, the field of education gained a huge body of financing, which reveals the special status and attention compared to other domains of the government (Hamdy, 2007). However, the educational system did not succeed to prepare students for future jobs, especially as a result of the restricted role that the school system played in cultivating

different skills and abilities of young men and women (Hamdy, 2007). Zouhir (2013) confirms that the Moroccan educational system confronts different serious problems. In other words, the Moroccan government has identified difficulties with the Moroccan educational system and has introduced reforms over the last decades to fight the low literacy rate and the absence of access to good education (Marley, 2004). However, these reforms only had limited outcomes on the educational improvement (Al-Bataineh, & Nur-Awaleh, 2005).

Numerous countries across the globe, including those in the developing world, have begun integrating critical thinking into their educational curricula across various educational tiers (Inch & Warnick, 2011). Within the context of Morocco, Chouari (2016) asserted that critical thinking has emerged as a contemporary focal point within the realm of education. Similarly, Mrah (2017) emphasized the pressing necessity of fostering critical thinking skills and a disposition for critical thinking among high school students. This urgency stems from the need to enhance students' adaptability within the rapidly evolving job landscape (p. 226). In the context of developing countries like Morocco, Mrah (2017) highlighted the prevalent reliance of teachers on textbooks to provide structured guidance on both content and instructional strategies (p. 226). Correspondingly, Elboubekri (2013) highlighted the constrained array of activities within Moroccan English textbooks that encourage students to engage in creative thinking. Moreover, Elboubekri (2013) contended that the themes, grammar components, and language elements embedded within these textbooks hold the potential to foster critical thinking and intercultural skills among Moroccan Baccalaureate students (p. 1935). In alignment with this perspective, Jebbour (2016) underscored the imperative for educators, particularly those who overlook activities targeting crucial critical thinking

skills, to reconsider their role in the English language classroom in the 21st century (p. 88).

METHOD

This section outlines the approach employed to explore the application of critical thinking in Moroccan high schools. The research centers on English language teachers in Moroccan high schools as they play a pivotal role in shaping students' language skills and cognitive development. Convenience sampling is used due to practical considerations, enabling the selection of participants who are most accessible and willing to take part in the study.

A questionnaire is used as the principal tool for data collection. The questionnaire is designed to assess various aspects of critical thinking practice. The questionnaire is structured to obtain both quantitative data through closed-ended questions and qualitative insights through open-ended prompts.

The central research question guiding this study is formulated to uncover the level of critical thinking practice among Moroccan high school English language teachers. The aim is to gain insights into the current state of critical thinking integration, its perceived significance, and potential areas for improvement.

Collected data is subjected to rigorous analysis to derive meaningful insights. Quantitative data is analyzed using statistical techniques such as descriptive statistics to summarize responses, while qualitative data from open-ended questions is subjected to thematic analysis to identify recurring themes.

By using this comprehensive methodology, the study aims to shed light on the current status of critical thinking practices among Moroccan high school English language teachers, offering valuable insights into opportunities for enhancing critical thinking education in the context of the Moroccan education system.

The primary research question addressed by this study is:

RQ. Is there any statistically significant correlation between teachers' use of critical thinking and their attitudes?

From the previous research question, the following hypotheses can be developed:

•**Null hypothesis (1):** There is no statistically significant correlation between teachers' level of use of critical thinking and their attitudes.

•**Alternative hypothesis (1):** There is a statistically significant correlation between teachers' level of use of critical thinking and their attitudes.

In this study, the independent variable is teachers' attitudes towards the use of critical thinking in the classroom and the dependent variable includes teachers' level of use of CT in teaching practice.

RESULTS AND DISCUSSION

A total of 423 English language high school teachers actively participated in this comprehensive investigation. As depicted in the illustrative representation below, the demographic distribution highlights that 62.65% of the participants identified as male, representing a count of 265 individuals (N=265). Conversely, 37.35% of the participants identified as female, comprising a total of 158 individuals (N=158). Research suggests that teacher characteristics, including gender, can influence student outcomes, and understanding this relationship is crucial for fostering effective learning environments.

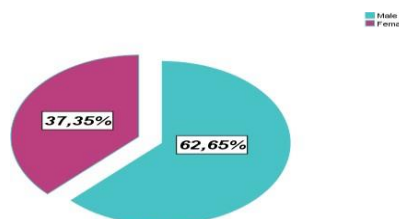


Figure 4.1. Gender Distribution of The Participants

Additionally, the findings indicated that most English language teachers have a high teaching experience. Indeed, as shown from the figure below, the highest percentage of respondents (24,59%) was in the teaching experience range for more than 25 years (N=104). Also, (13%) of the research's respondents were in the teaching experience range 21-25 years. Besides, (13,71%) of the respondents had between 16 to 20 years of teaching experience.

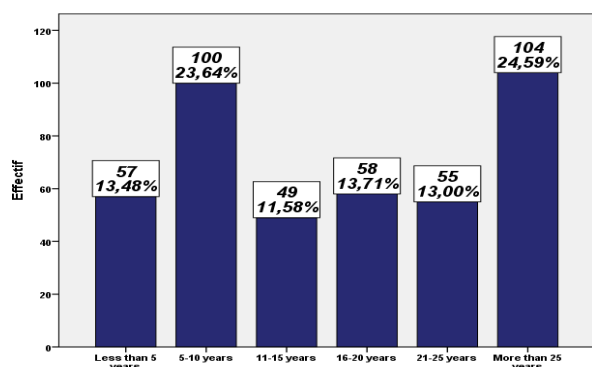


Figure 4.2. Response Frequencies for Participants' Teaching Experience

As illustrated in the provided figure, a significant majority of the participants, comprising (64.54%), have attained a master's degree. Additionally, (32.62%) of the respondents hold a bachelor's degree, signifying another substantial segment of the sample. A smaller subset of the surveyed individuals, representing 2.84% of the total sample, holds a doctorate's degree. This distribution highlights the diverse academic qualifications within the participant pool, indicating a prevalence of master's degrees and also acknowledging the presence of bachelor's and doctorate's degrees among the English language teachers involved in the study.

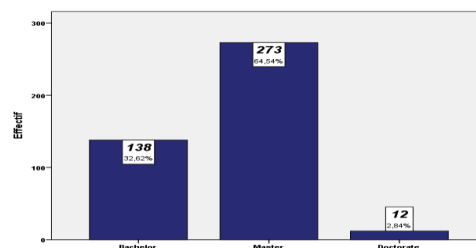


Figure 4.3. Response Frequencies for Participants' Educational Level

Regarding training, the findings indicate a significant trend. A substantial majority of the participants, constituting (75.65%), reported not having received any form of training in critical thinking. The implications of this lack of training are varied. Firstly, it suggests a potential gap in the professional development programs available to teachers, highlighting the need for a more emphasis on critical thinking training. Without such training, teachers may face challenges in effectively incorporating critical thinking strategies into their instructional methods. Besides, the absence of critical thinking training may impact the overall quality of education provided to students. Teachers who have not been exposed to specific training in this area may find it challenging to create learning environments that actively promote critical thinking.

Conversely, a comparatively smaller proportion of respondents, comprising (24.35%), indicated that they had undergone training specifically focused on critical thinking. This distribution underscores the prevalent lack of formal training in critical thinking among the surveyed English language teachers, while also acknowledging the minority who have had the opportunity to receive such training.



Figure 4.4. Response Frequencies for Participants' Training in Critical Thinking

This part tackles the relationship between teachers' level of use of critical thinking and their attitudes. In fact, it aims to find out an answer to the following research question "Is there any statistically significant correlation between teachers' level of use of critical thinking and their attitudes?". The relationship between the dependent variable (teachers' level of use of critical thinking) and the independent variable (teachers' attitudes towards critical thinking) was investigated using Pearson product-moment correlation coefficient. Correlation coefficients (r) can range from -1 to +1. A correlation of -1 reveals a perfect negative correlation. Meaning that when one variable increases, the other decreases. A correlation of +1 exhibits a perfect positive correlation. In other words, when one variable increases, the other increases as well. On the other hand, a correlation of 0 displays no relationship between the two variables (Graziano & Raulin, 1997). Teachers exhibiting positive attitudes toward critical thinking may indeed engage more frequently in critical thinking practices, but this correlation does not necessarily mean that positive attitudes directly cause the increased usage. It is equally plausible that other factors, not accounted for in our study, contribute to both positive attitudes. Educational specialists often recommend employing multiple methods and triangulating evidence to strengthen causal claims. This could involve incorporating qualitative research methods.

Several educational specialists recommend numerous interpretations to detect the strength of the correlation. Cohen (1988) offers the following guidelines: a coefficient of $r=0.50$ to 1.0 OR $r=-0.50$ to -1.0 implies a large correlation between the two variables. A coefficient of $r=0.30$ to 0.49 OR $r=-0.30$ to -0.49 displays a medium correlation between the two variables. A coefficient of $r=0.10$ to 0.29 OR $r=-0.10$ to -0.29 shows a small correlation between the two variables.

As the findings of this study indicated

(Table 4.1), there was a significant and positive correlation ($r=0.43$, $p=0.000<0.01$) between teachers' level of use of critical thinking and their attitudes. That is to say, as teachers' positive attitudes increases, teachers' level of use of critical thinking increases as well. As mentioned before, a coefficient of $r=0.30$ to 0.49 OR $r=-0.30$ to -0.49 indicates a medium correlation between the two variables. In this research, the coefficient of $r=0.43$ which implied that the relationship between teachers' level of use of critical thinking and their attitudes is medium (almost large). Besides, the p-value (0.000) is smaller than the level of significance ($\alpha=0.01$). Therefore, the null hypothesis which states that "there is no statistically significant correlation between teachers' level of use of critical thinking and their attitudes" can be rejected. Correspondingly, the alternative hypothesis suggested that "there is a statistically significant correlation between teachers' use of critical thinking and their attitudes" can be accepted.

Table 4.1. *Correlation Between Teachers' Level of Use of Critical Thinking and Their Attitudes*

Correlation		Teachers' attitudes toward CT	Teachers' level of use of CT
Teachers' attitudes toward CT	Pearson Correlation	1	,427**
	Sig.(2-tailed)		,000
	N	423	423
Teachers' level of use of CT	Pearson Correlation	,427**	1
	Sig.(2-tailed)	,000	
	N	423	423

** . Correlation is significant at the 0.01 level (2-tailed)

In order to offer a better idea of the nature of the relationship between the dependent variable (teachers' level of use of critical thinking) and the independent variable (teachers' attitudes towards critical thinking), a scatterplot was designed. As illustrated in the scatterplot below, there is a linear and positive relationship between the variables measured. Indeed, a linear relationship implied that the correlation can be represented in the form of a straight line. More specifically, the data points trend from lower-left to upper-right. In the light of this, it possible to say that there is a positive correlation. Another aspect that should be observed when dealing with a scatterplot is how close together the data points are to one another. It is clear from the scatterplot that the data points are close to each other. This suggests that the correlation is moderately strong.

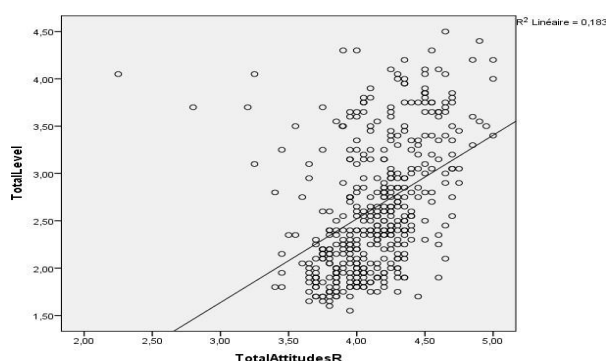


Figure 4.5. Means Plot for Teachers' Use of Critical Thinking and Their Attitudes

It appears quite possible from the results that there is a close relationship between teachers' level of use of critical thinking and their attitudes. This suggests that teachers with positive attitudes will have a high level of use of critical thinking, which, in turn, means that they will spend more time planning their lessons using critical thinking.

Several contemporary educational theories emphasize the pivotal role of teacher beliefs and attitudes in shaping instructional practices and, consequently, student outcomes. Connecting our findings to such

theories, such as Constructivism or Social Cognitive Theory, could offer a theoretical framework for understanding how teachers' positive attitudes influence their incorporation of critical thinking into lesson planning.

Additionally, our study's outcomes have practical implications for teacher training programs and curriculum development. Understanding the relationship between teachers' attitudes and critical thinking usage can inform the design of training initiatives aimed at cultivating positive attitudes and enhancing the integration of critical thinking strategies into lesson planning.

CONCLUSION

The results revealed that there was a significant and positive correlation ($r=0.43$, $p=0.000<0.01$) between teachers' level of use of critical thinking and their attitudes. This correlation can be attributed to the rationale that a higher level of proficiency in critical thinking skills among teachers corresponds to more favorable attitudes toward integrating critical thinking into their teaching methods. In essence, educators who possess an enhanced understanding of critical thinking are more inclined to exhibit openness to novel concepts and pedagogical approaches. Conversely, individuals less acquainted with the significance of critical thinking might adhere to more conventional teaching methods, resulting in less favorable attitudes toward its incorporation.

In simpler terms, the results suggest that educators who are well-versed in the principles and strategies of teaching critical thinking tend to exhibit a more positive disposition toward its implementation. On the contrary, those who lack comprehensive awareness of the importance of critical thinking might be less receptive to adopting innovative practices, leading to a more skeptical or negative attitude. This correlation underscores the vital role of

educators' knowledge and proficiency in shaping their attitudes, subsequently influencing their willingness to integrate critical thinking practices into their teaching methodologies.

The study carries several significant theoretical implications related to the practice of critical thinking in Moroccan high schools. These can be summed up as follows:

1. Indeed, this research carries the potential to significantly contribute to the advancement of critical thinking within Moroccan high schools. The study's outcomes hold important value in fostering the growth of critical thinking skills among learners. This research is particularly essential for both curriculum developers and teachers, as it provides valuable insights that encourage a reevaluation of matters pertaining to the cultivation of critical thinking within the Moroccan education system. For curriculum developers, the study offers an understanding of the current state of critical thinking integration, highlighting areas that may need improvement. The results can guide the revision of educational materials and the incorporation of critical thinking elements across subjects, ultimately shaping a more comprehensive and skill-oriented curriculum.
2. Teaching students to think more effectively should be a fixed goal for any teacher. Indeed, the development of high school students' critical thinking should be a continuous mission in order to prepare them for higher education as well as helping them develop essential skills for today's global economy.
3. Critical thinking should be promoted in all Moroccan high schools and introduced at primary and middle schools.
4. The findings showed that teachers hold positive attitudes towards critical thinking. Therefore, they needn't hesitate to introduce critical thinking in their teaching. Teachers should reconsider the way they teach and the materials they use by including different critical thinking activities during the lesson. Having an understanding of what really happened in the classroom will surely help to shape the development of critical thinking in education.
5. The study highlighted training as an important finding which must be taken into account so as to reach satisfactory results. All teachers need to be trained in how to teach critical thinking in their classes in their pre-service and in-service education to assess their teaching problems and upgrade their knowledge of critical thinking skills. In fact, appropriate training is required in order to help teachers who do not have basic skills in critical thinking to become familiar with it.
6. The Ministry of Education holds an essential role in shaping the educational landscape, and one crucial step it can take is to orchestrate dedicated training sessions for teachers centered on the integration of critical thinking into the education system. By doing so, there is a substantial potential to accelerate the adoption and integration of critical thinking practices across different educational levels. Organizing comprehensive training sessions for teachers would address the prevailing gap in formal instruction on critical thinking methodologies. These sessions could include a diverse range of strategies

such as workshops, seminars, and professional development courses. Such training initiatives would give teachers the chance to gain a profound understanding of the importance of critical thinking, its methodologies, and practical strategies for implementing it into their instructional practices.

7. Annual national or international critical thinking conferences should be organized in order to broaden teachers' knowledge of their students as learners and help them become critical thinkers. The focus of these meetings should be primarily on the successful integration of critical thinking in education. Admittedly, organizing seminars and workshops is important and beneficial for teachers to keep up to date with changes that usually occur in the field of education.
8. Resources teachers use to deliver instruction are important to the success of students' achievement. Teachers should be provided with the necessary teaching materials to teach critical thinking. Different materials are essential because they can significantly support students' learning and motivate them to participate in critical thinking.

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