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Fostering Critical Thinking in EFL Reading through Socratic Questioning: An Action Research Study

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ABSTRACT

Currently, students require a complex set of skills to succeed academically and professionally. However, Moroccan EFL students seem to lack higher-order skills, particularly critical thinking in reading comprehension, necessitating innovative teaching techniques. Against this backdrop, this action research examines the efficacy of Socratic Questioning (SQ) in fostering critical thinking development during reading in Moroccan EFL classrooms. The study adopted a sequential explanatory mixed-methods design in two phases: the first phase involved pre- and post-intervention critical thinking tests to quantify changes among 40 Moroccan baccalaureate students in a Moroccan high school, while the second comprised a focus group discussion with 12 students to explore SQ implementation challenges in reading. The intervention produced a moderate normalized gain in critical thinking skills, highlighting SQ's potential as a pedagogical driver. Conversely, entrenched systemic barriers and affective obstacles constrained its full effectiveness. Accordingly, this action research has generated a set of recommendations to strengthen the role of SQ in developing EFL students' critical thinking to upgrade their reading skills.

KEYWORDS

Socratic questioning; Critical thinking; Reading comprehension; EFL students; Action research.

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1. Introduction

Critical thinking skills development is essential in EFL (English as a foreign language) teaching and learning to equip students with analytical abilities for real-world communication. EFL classrooms need to go beyond rote memorization that leads to students' low engagement and limits their capacity to think critically. In the same vein, critical thinking empowers EFL learners to analyze evidence, evaluate viewpoints, and draw inferences rather than merely decode words, particularly because they encounter texts rich in cultural nuances, biases, and implicit arguments. Nevertheless, traditional EFL instruction emphasizes grammar and vocabulary, promoting surface-level comprehension that leaves students susceptible to misinformation and to difficulties with analysis and reflection. In this regard, Moroccan high school students struggle with inference and evaluation, exacerbating disinterest in reading and conflicting with demands for higher-order thinking. Therefore, integrating critical thinking through Socratic questioning appears to enhance reading proficiency, speaking fluency, metacognition, motivation, and transfer to writing. Consequently, this prepares learners for authentic literacy demands while bridging curriculum aspirations with practical outcomes.

2. Review of literature

Teaching reading holds paramount importance in EFL contexts as it serves as the foundational gateway to language proficiency, cultural understanding, and cognitive development. Reading exposes EFL learners to vast, contextualized input, building passive and active vocabulary. Authentic texts also demonstrate grammar patterns in use, from sentence structures to idiomatic expressions, fostering intuitive mastery without rote memorization. As a receptive skill, reading reinforces listening, speaking, and writing; learners encounter natural phrasing for pronunciation, debate ideas for oral practice, and model organization for composition. In EFL settings, reading is supposed to cultivate higher-order skills like inference, evaluation, and synthesis. Also, it should promote learner autonomy, motivation, and cultural awareness, preparing students for real-world tasks. Ultimately, through reading, the teacher's goal is not only to develop students' linguistic skills but also to foster their higher-order skills, especially critical thinking. One of the most cited definitions of critical thinking in EFL contexts was formulated by Paul and Elder (1997):

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Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action (Elder, 1997, p:371).

Relatedly, the purpose of language learning and the integration of critical thinking is meaning-making (Masduqi, 2011), which means that students' linguistic competency highly impacts students' critical thinking abilities (Indah and Kusuma, 2016). This action research is informed by a theoretical framework that helps to study the research topic from a particular lens, shapes the research questions asked, guides data collection and analysis, and directs the study results (Creswell and Poth, 2018). In formulating a theoretical perspective for investigating the impact of Socratic Questioning (SQ) on critical thinking skills' development among EFL high school students, this research adopted multiple theoretical frameworks to investigate the research problem. This review integrates three core frameworks to examine how Socratic Questioning (SQ) serves as a transformative tool for critical thinking skills development in high school EFL reading instruction. The Paul-Elder Framework (2006) positions disciplined inquiry as a cornerstone for critical thinking (CT) development, emphasizing structured elements of reasoning, intellectual standards, and virtues to foster rigorous analysis in educational contexts like EFL.

This framework provides a solid background for effective reading instruction, as it encourages students to identify the purpose, assumptions, points of view and inferences they draw from a text, all essential components of reading instruction. To achieve this purpose, Paul and Elder's framework emphasized the role of Socratic Questioning (SQ) or systematic questioning to help students move from passive decoding to deep cognitive engagement. Socratic questioning takes the form of a dialogic interaction (Socratic dialogue) that motivates students to share their diverse point of views and to enrich the dialogue by adding their own perspectives (Schuitema et al., 2018). It relies on interactive exchanges about real-life experiences under mentor guidance. Paul and Elder (2016) provide robust theoretical support for SQ in critical thinking instruction, noting that Socratic facilitators pose questions that are "systematic, disciplined, and probing" (p. 4). Correspondingly, Socratic questioning is deeply rooted in social constructivism (Vygotsky, 1978), which considers social interaction and dialogue as drivers for developing high-order cognitive functions including critical thinking. In an EFL context, Socratic questioning acts as a form of scaffolding, shedding light on one of the core concepts of social constructivism, the Zone of Proximal Development (ZPD).

The teacher uses open-ended questions to guide students from their current level of understanding to a more complex, analytical level they could not reach alone. As a result, knowledge is not transmitted but constructed through the exchange of opinions and perspectives. In other words, when teaching reading through SQ, meaning is constructed through the dialogue undertaken between the teacher and students. Accordingly, SQ aligns with Bloom's revised taxonomy, which classifies educational objectives into cognitive levels, from basic recall to advanced critical thinking. It is considered a roadmap for designing reading tasks in EFL contexts, which progress from literal comprehension to analysis and evaluation. SQ operationalizes the transition from lower-order skills to higher-order ones, fostering critical engagement in EFL reading.

Literature on the impact of Socratic questioning on fostering high-school students' critical thinking skills in reading has been very scarce, particularly in the Moroccan context. The few studies that investigated this topic demonstrated that SQ generally functions as a metacognitive tool that regulates the reading process (Al Maliki, 2017; Mahmud and Tryana, 2023; Mahoney et al., 2023). It has been found that SQ encourages creativity and a good sense of interpretation. Additionally, it increases students' critical reflection on reading texts and materials they encountered (Nissah, 2020; Ozarac and Nur, 2025). Conversely, these studies shed light on a number of challenges that hinder the adoption of Socratic questioning as a strategy for higher-order thinking. The success of this technique depends on teachers' effective usage of questioning techniques (Mahmud and Tryana, 2023). For students, low language proficiency, weak engagement in reading sessions, and anxiety about being questioned seem to form a real barrier to the implementation of SQ. Besides, adopting SQ appears to be time-consuming, which entails prior preparation by both teachers and students (Dalim et al., 2022). For this reason and others, this action research aims to investigate the impact of Socratic questioning on fostering Moroccan EFL high-school students' critical thinking skills in reading comprehension.

Research questions and objectives:

This action research strives to answer the following questions:

1. How does Socratic questioning impact Moroccan EFL high-school students' critical thinking skills in reading comprehension?
2. What are the challenges that students face with the implementation of Socratic questioning in EFL reading sessions at high school?

Hence, this research attempts to reach the objectives below:

- Examine the impact of Socratic questioning on fostering Moroccan EFL high-school students' critical thinking skills in reading comprehension.
- Identify the obstacles that teachers and students encounter in applying Socratic questioning in reading sessions.
- Suggest a set of recommendations to optimize the use of Socratic questioning for increased critical thinking in reading comprehension in Moroccan EFL high-school contexts.

3. Research methodology

3.1 Research method and design

This action research has followed a mixed research design to investigate the impact of Socratic questioning on critical thinking (CT) skills in reading comprehension. Mixed-Methods Research Design is defined by Johnson et al. (2007) as:

The type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches ……. for the purposes of breadth and depth of understanding and corroboration. (p. 123).

The mixed research strategy adopted is the explanatory sequential design. It is a two-phase design that starts with the collection and analysis of quantitative data, followed by qualitative data collection and analysis to explain and elaborate on quantitative analysis results to answer the research questions and meet its objectives (Creswell and Clark, 2018). The quantitative data were collected through the administration of a pre- and post-intervention reading comprehension tests adapted from the Watson Glaser critical thinking test (Watson and Glaser, 2011) to examine the impact of implementing Socratic questioning on students' critical thinking skills development in reading. Then, the qualitative data were gathered through a focus group discussion with students to explore their perceptions and challenges regarding the Socratic questioning technique. Subsequently, both data analysis results were combined to draw conclusions and suggest recommendations to foster Moroccan EFL high-school students' critical thinking in reading comprehension.

3.2 Population and sampling

The target population of this action research is Moroccan EFL high-school students. Specifically, I targeted a physics baccalaureate class of 40 students studying in a high school in Meknes. The participants gave their informed consent to participate in the pre- and post-test, and n=12 students agreed to take part in the focus group. To select the study sample, I have followed purposive sampling; it is one of the non-probability sampling methods for both quantitative and qualitative data collection, by which the researcher selects samples based on his or her subjective judgment rather than on random selection (Creswell, 2012). Based on my observations in class and students' performance in previous reading comprehension tasks and activities, many students in the studied class exhibited a lack of critical analysis and a shallow interpretation of reading texts.

3.3 Data collection instruments

The current research has made use of two distinct data collection methods. The first one is a reading comprehension test for critical thinking skills administered before and after the implementation of SQ, to investigate its impact on students' critical thinking in reading comprehension, while the second one is a focus group discussion used to identify the challenges students encountered with the SQ method. The reading comprehension test was adapted from the Watson Glaser Critical thinking test (WGCTA) (2011). The latter is a widely used, timed, and multiple-choice assessment tool to evaluate how well students analyze information, draw deductions, and interpret data. It focuses on five critical analysis skills: inference (whether an inference is true or false), assumptions (identify underlying assumptions), deduction (draw logical conclusions), interpretation (assess if a conclusion is justified in the text), and evaluation (decide if arguments are solid or not).

The pre- and post-test include a devised reading text suitable for EFL pre-intermediate students about sustainable development—one of the themes in the baccalaureate program—and is intended to trigger students' critical thinking skills. It contains 10 multiple-choice question items scored out of 10, one point for each question. The test measures changes in critical thinking skills before and after the Socratic intervention, covering the five skills already mentioned (inference, assumptions, deduction, interpretation, and evaluation). Students should take the test within 30 minutes. The focus group discussion included n=12 students who reported their perceptions, motivations, and challenges they encountered with the Socratic questioning method. This action research has adopted the cyclical process of planning, acting, and fact-finding to link theory with practice by focusing on four main stages (planning, acting, observing, and reflecting) (Lewin, 1940). These steps are clearly represented in the following figure:

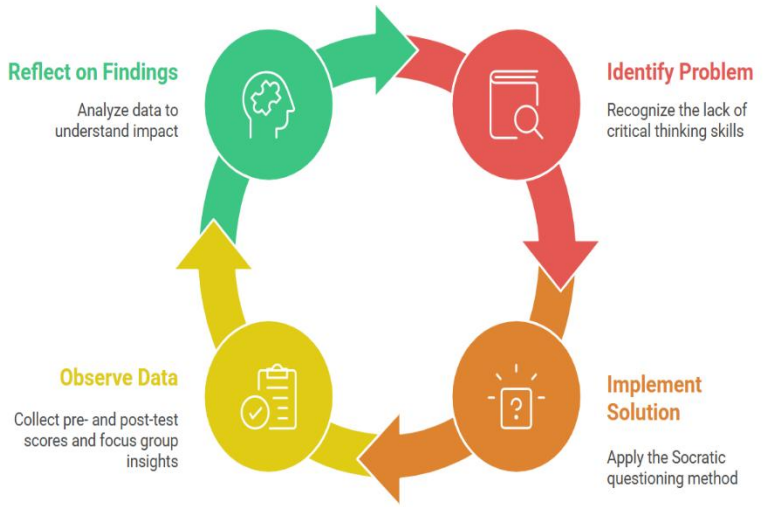


Figure 1. The action research cycle

Based on class observations and students' performance in reading comprehension, students exhibited very poor critical thinking in their understanding and interpretation of the reading texts. Consequently, I tried to look for an effective method to develop their critical thinking skills by implementing Socratic questioning in reading comprehension sessions. To collect data, pre- and post-tests were administered to students to measure their critical thinking skills before and after the implementation of SQ, while a focus group discussion shed light on the main challenges students met with the SQ method. The quantitative and qualitative analysis of the data collected helped to understand the impact of implementing SQ on students' critical thinking skills in reading comprehension. Reflection on the findings generated valuable insights into the research topic and informed a set of recommendations to optimize the use of SQ for critical thinking skills' development in Moroccan high-school EFL settings.

3.4 Implementation

The intervention procedure of this research followed the cyclical action research process to draw valid conclusions on the impact of SQ on developing students' critical thinking skills in reading comprehension in Moroccan EFL settings. The action research cycle started with identifying baccalaureate students' poor critical thinking in reading. After that I decided to conduct this action research by implementing the SQ method in reading sessions. After getting students' consent (n=40) to participate in this study, I administered a 30-minute pre-test adapted from the Watson Glaser Critical thinking test (WGCTA) (2011), to collect baseline data on critical thinking dimensions like analysis, evaluation, and inference, which establish individual and group proficiency levels before intervention.

Due to time constraints, I implemented the SQ method for two weeks, with two sessions a week, each lasting 50 minutes. First, I introduced short texts about topics related to the themes covered in the textbook "Ticket 2 English" for baccalaureate students using pictures (sessions 1 and 3) and short videos (session 4) and I pre-taught some key vocabulary items in all sessions (5 to 8 words). Students read the texts silently and underlined difficult vocabulary items. This warm-up activity took 10 minutes. Second, I divided the class into five mixed-ability groups of 8 students, who started rereading the texts to discuss together the simplified and adapted Paul's taxonomy of six Socratic questions (Paul, 2011), as illustrated below:

Table 1. Adaptation of Paul's Socratic six questions by Mason (2011)

Type of Questions	Examples
Questions that require clarification	• Why did you say that? • What does that mean? • How does this relate to your earlier statement?
Questions probing assumptions	• Can that statement be validated? • What beliefs are assumed here? • Might there be other agendas involved by those who are making these claims?
Questions probing reasoning and evidence	• What do you think the causes are? And why? • Is there any evidence or facts that support this? • How complex is the issue?
Questions probing perspective	• Is there another way to look at this? • What are the arguments to the contrary, if any? • Can you provide an overall rationale?
Questions probing implications	• What consequences can you see arising? • Can a generalisation be made?

Type of Questions	Examples
Questions about the question	• Why is this question relevant? • What does this mean in practical terms?

I circulated in class to provide the groups of students with the needed guidance and to clarify any points of confusion. After discussing the questions in groups, I started asking the questions one by one and discussed the responses with students. The same procedure was followed in the four reading sessions with different texts and adapted questions targeting students' critical thinking skills. After the end of the four Socratic seminars, the fifth session was devoted to conducting the post-test. Students took 30 minutes to do the test, after which I collected data and started the quantitative data analysis. To collect qualitative data, I planned a focus group discussion with n=12 students for 45 minutes, to explore the participants' perceptions and challenges regarding the implementation of the SQ method in reading sessions. Additionally, students proposed suggestions to optimize the SQ method for critical thinking development. After collecting and analyzing the qualitative data, I combined the quantitative and qualitative data analysis results to reflect on the research findings and evaluate the relationship between the SQ method and students' critical thinking skills in reading comprehension.

3.5 Data collection and analysis procedure

The current action research has followed a sequential explanatory mixed-methods design, in which I collected quantitative data through pre- and post-intervention critical thinking tests administered to a class of n=40 baccalaureate physics-stream students. The test included six questions; each question was scored on a scale from 0 to 3. I analyzed the data collected through SPSS (Statistical Package for the Social Sciences) using descriptive statistics (frequency and means) to describe the students' mean scores, and inferential statistics in the form of a paired-samples t-test to compare the means of the pre- and post-test, and identify the impact of the SQ intervention on students' critical thinking skills in reading. After that, I conducted a focus group discussion with n=12 students of the same class, to explore their perceptions and challenges concerning the implementation of the SQ method in reading sessions for critical thinking development. I conducted the thematic analysis following Braun and Clarke's six-step approach (2006): familiarization, coding, theme generation, review, definition, and reporting. I recorded and transcribed the discussion, then coded it for a thematic analysis that generated students' views regarding the SQ method and the different obstacles they encountered. Additionally, they also proposed suggestions on how to maximize SQ benefits for reading comprehension to meet their needs and interests.

4. Results and discussion

The quantitative and qualitative data analysis made it possible to answer the research questions and achieve the objectives of this action research. The quantitative data analysis of the pre- and post-test scores made it possible to identify the impact of Socratic questioning on Moroccan EFL high-school students' critical thinking skills in reading comprehension. Therefore, to answer the first research question:

1. How does Socratic questioning impact Moroccan EFL high-school students' critical thinking skills in reading comprehension?

The table below summarizes the descriptive statistics examining the effect of Socratic questioning on the development of EFL learners' critical thinking skills across six distinct categories by comparing pre-test and post-test results. Student progress is measured using both raw score gains and normalized gains, with a maximum score of 3 points per category and 18 points overall. The assessments were based on rubric-guided evaluations of students' ability to apply Socratic questioning skills (clarification and challenging assumptions).

Table 2. Effectiveness of Socratic Questioning Intervention on EFL Critical Thinking Skills

Socratic Question Category	Pre-Test Score	Post-Test Score	Raw Mean Gain	Normalized Gain (g)
Clarification	2.15	2.85	+0.70	0.82 (High)
Probing Assumptions	1.10	2.10	+1.00	0.53 (Med)
Reasons & Evidence	1.45	2.65	+1.20	0.77 (High)
Viewpoints & Perspectives	0.85	2.05	+1.20	0.56 (Med)
Implications & Consequences	0.60	1.55	+0.95	0.40 (Med)
Questions about Questions	0.40	1.15	+0.75	0.29 (Low)
Class Total (Weighted)	6.55 / 18	12.35 / 18	+5.80	0.51 (Med)

The table reveals a medium overall normalized gain (g=0.51) across six Socratic questioning categories, indicating moderate effectiveness of the intervention in developing EFL students' critical thinking through reading tasks. The highest performance means are associated with clarification (g=0.82) and reasons and evidence (g=0.77) showing substantial gains, which means students improved their ability to give clear explanations and to support claims with evidence. On the other hand, moderate

progress is noticed in probing assumptions (g=0.53), viewpoints and perspectives (g=0.56), and implications and consequences (g= 0.40); these skills require higher-order thinking that questions underlying beliefs and perspectives, and may entail more training on Socratic questioning. The lowest gain is attributed to questions about questions (g=0.29); it seems that the SQ method failed to improve students' metacognition and their ability to think about their thinking strategies. Eventually, there is a moderate effect of SQ implementation on Moroccan EFL students' critical thinking in reading comprehension (g=0.51). After comparing the means of the pre- and post-test scores through the paired t-test, the following table summarizes the results:

Table 3. Paired t-test summary results

Variable	Mean (Pre)	Mean (Post)	Mean Difference	P-value
Outcome measure	6.55	12.35	+5.80	0.001

The table presents a paired t-test summary of the effectiveness of the Socratic questioning intervention, showing a significant improvement in EFL critical thinking scores from pre-test (M=6.55) to post-test (M=12.35). The P-value <0.001 indicates strong evidence that the intervention systematically improved the critical thinking skills of the research participants in reading comprehension. The present findings are consistent with prior mixed-methods research on Socratic questioning (SQ) in EFL contexts, demonstrating moderate overall learning gains alongside notable variation across cognitive categories. Specifically, gains were strongest in concrete comprehension skills, while abstract and metacognitive dimensions showed moderate to low improvement. This distribution aligns with international SQ research while also foregrounding context-specific challenges within Moroccan EFL classrooms. Comparable outcomes were reported by Yang et al. (2014), who found that SQ enhanced Chinese EFL learners' reading comprehension by 42%. The pronounced gains were observed in clarification and reasoning categories.

In contrast, the more modest gains observed in probing assumptions (g = 0.53), considering viewpoints (g = 0.56), and examining implications (g = 0.40) are consistent with earlier research highlighting the difficulty of developing metacognitive skills through SQ. Ritchhart (2002) similarly reported lower gains in metacognitive domains (g = 0.32–0.45), noting that sustained interventions of 12 weeks or longer were required. The weakest performance in meta-questioning ("questions about questions") further parallels Al-Hoorie's (2016) Saudi EFL study.

In Morocco, these findings add depth to the existing research on the impact of SQ on students' critical thinking. El Qahtani (2013) reported substantially lower SQ gains among Moroccan high school learners (g = 0.24), largely due to exam-oriented instructional pressures. The higher gain achieved in the current study (g = 0.51) suggests that targeted action research adaptations may mitigate some systemic constraints. Additionally, students' reported hesitation toward questioning authority reflects culturally embedded pedagogical norms, corroborating Belhiah's observation (2018) that rote-learning traditions suppress abstract reasoning gains by approximately 35%. As a matter of course, these Moroccan specificities were also unveiled during the focus group discussion held with students. Correspondingly, the qualitative data analysis of the focus group discussion with Moroccan Baccalaureate EFL students (n=12) helped to answer the second research question:

2. What are the challenges that Moroccan EFL high-school students face with the implementation of Socratic questioning in EFL reading sessions at high school?

The thematic analysis generated a number of themes that reflect the difficulties faced by the research participants:

5. Linguistic constraints

The research participants reported their perceived low English proficiency as one of the main barriers to interacting effectively with Socratic questions. They also mentioned their struggle with understanding some vocabulary items and some types of questions. For instance, student 6 said: "I know the answer in Arabic, but I cannot say it correctly in English." Another student (9) added: "I did not understand some words used in the questions". Students' English language proficiency did not help them to come up with in-depth answers; their interaction with the SQ method was limited and shallow.

6. High cognitive demands

Students have clearly stated their preference for traditional questioning methods in reading, favoring traditional questions such as true-or-false questions, Wh-questions and others, instead of Socratic questions. In other words, students seem to be resistant to innovative teaching practices that target higher-order thinking, as student 1 declared: "we are not used to these questions ; they are too difficult, true or false questions are easier." Besides, students expressed their preference for inferring information from the text, rather than making interpretations, expressing viewpoints or building assumptions; student 4: "we usually answer questions using sentences from the text". As a matter of fact, students are used to using lower-order thinking skills involving basic recall and comprehension in reading, rather than critical thinking skills.

7. Affective barriers

There are many psychological factors that affected students' engagement with Socratic questions, particularly classroom anxiety, fear of making mistakes, and shyness. In this regard, students expressed their fears of answering questions wrongly and experiencing intimidation in class; thus, they expressed anxiety when speaking publicly, particularly when they are not sure of the answer because of the types of Socratic questions raised in discussions. Student 8 declared: "I wanted to answer the questions, but

I was fearful that other students would laugh at me", another student (9) said: "I could not answer the questions because I thought it was not correct". These affective factors hinder students' engagement with SQ seminars and mitigate the impact of this method on students' critical thinking development.

8. Classroom group dynamics

One of the main challenges that the research participants highlighted is the high number of students in class. The large class size of 40 students did not help to provide equal opportunities to all students to interact with Socratic questions. Student 1: "I wanted to answer a question but another student raised his hand before I did". Hence, many students expressed their frustration because of not participating in the discussion. Furthermore, students complained about some of their group members, who did not exhibit the necessary seriousness and interest; student 3 stated "some of my classmates were not serious enough, they kept joking and did not want to work collectively". Others clearly mentioned their preference for working individually rather than in groups; student 4 stated: "I prefer to do reading tasks individually, not in groups." Individual differences may raise challenges for optimizing the SQ method to develop critical thinking in reading comprehension.

9. Curriculum and time constraints

Students considered SQ seminars time-consuming, especially because the curriculum is overloaded. Students do not perceive the value of the SQ method, as they need to cover exam-specific content to prepare for the English national exam. They believe that these questions are very different from the ones used in the national exam. Hence, they think it is useless to run SQ seminars in all reading sessions; student 5 confirmed: "these questions will not help us to get good grades in the English national exam, we usually extract the answers directly from the text".

Students perceive Socratic questioning (SQ) as misaligned with the Moroccan baccalaureate national exam format, viewing it as irrelevant to their grade-focused priorities. Ultimately, Morocco's high-stakes exam culture, where rote strategies dominate EFL reading, is a barrier to students' development of higher-order thinking skills including critical thinking.

5. Implications and Recommendations

This mixed-method action research has demonstrated the moderate efficacy of Socratic questioning in enhancing Moroccan EFL baccalaureate students' critical thinking in reading. Conversely, there are many persistent barriers that hinder the effective implementation of SQ for critical thinking development. The research findings have implications for different aspects of the teaching and learning process in Moroccan EFL settings. The linguistic constraints mentioned by students imply that Socratic questioning (SQ) cannot be implemented in isolation in EFL contexts. Educators must adopt various types of scaffolding through bilingual explanations and pre-teaching vocabulary specifically for reasoning to bridge the gap between cognitive ability and linguistic output. In addition to that, educators need to facilitate the engagement of low-proficiency students by providing rubric-guided response frames.

As students showed resistance to working from the very beginning on higher-order thinking, it is preferable to put Bloom's taxonomy into practice. Teachers can start with lower-order thinking reading questions, then move smoothly to higher-order thinking questions that focus on critical thinking. As a matter of fact, this would increase students' preparedness to think critically, make interpretations, build assumptions and draw conclusions. This research has also resulted in some structural implications that highlight curriculum development issues in Moroccan EFL teaching and learning. As the SQ method seems to be misaligned with the curriculum focus on rote learning and memorization, the washback effect of the English national exam affects the effective implementation of SQ seminars in reading.

Moroccan EFL textbooks should target the development of critical thinking, as it is reinforced in the pedagogical guidelines for teaching English in Moroccan high-schools (2007). Higher-order thinking skills in general should be fostered throughout the four language skills to align Moroccan EFL teaching with the 21st-century skills needed to thrive in this globalized and high-tech world. In addition to that, to sustain the implementation of SQ seminars in reading, formative and summative test formats, including the Moroccan English national exam, must evolve to include critical evaluation tasks. Without this systemic change, critical thinking skills will remain peripheral to students' academic priorities.

Another implication of this research highlights the importance of reimagining classroom culture by focusing on a student-centered method of teaching reading in Moroccan EFL settings. To reduce the high levels of anxiety and fear in the classroom, there is a need for a shift towards making students more responsible for their learning and helping them to be at the center of the SQ seminars. Students should be encouraged to give their opinions, suggest reading topics, select group and/or pair work modes, and voice their needs and preferences. As a result, students will feel more confident and their motivation will increase, which will make them more engaged in SQ seminars and will reduce their classroom anxiety. The role of students in SQ seminars should have another dimension that fosters students' decision making, leadership, and autonomy.

To add to this, there is a necessity to reduce the class size and to implement the SQ method with smaller groups of students to encourage all students to participate in SQ discussions. This will also aid the teacher to focus on individual difficulties and address them in class. Besides, Information and Communication Technologies (ICT) can make SQ seminars more fun through the use of interactive whiteboards, the internet, artificial intelligence applications, and others.

The research implications guided the generation of a set of recommendations that optimize the application of the SQ method in reading for critical thinking development in Moroccan EFL settings.

❖ Implications For educators:

- Implement bilingual Arabic-English question scaffolds and pre-session glossaries targeting SQ vocabulary to bridge proficiency gaps.
- Provide sentence frames and rubric-guided response templates enabling low-proficiency students to engage in deeper analytical responses.
- Adopt a gradual transition in reading tasks from Low-Order Thinking Skills (LOTS) to High-Order Thinking Skills (HOTS).
- Encourage assessment reform that includes critical thinking in the National Baccalaureate English Exam to ensure positive washback and motivate student engagement with deep reading strategies.
- Create a stress-free classroom environment by adopting innovative and fun teaching methods and strategies.
- Foster students' autonomous learning and self-regulation strategies.
- Adopt explicit learning to enhance students' metacognition skills.
- Integrate the use of ICT and artificial intelligence tools in SQ seminars.

❖ Implications for syllabus designers:

- Focus on integrating higher-order thinking skills, including critical thinking, in the four language skills throughout the Moroccan English textbooks.
- Design reading materials that adopt Socratic questions in reading comprehension.
- Integrate Metacognitive Rubrics that contain self-assessment rubrics in the syllabus.
- Develop blended Learning resources, which provide official digital handbooks or website links that model Socratic seminars, allowing students to observe and practice critical questioning at their own pace.

❖ Implications for education stakeholders:

- Reform the national assessment frameworks to include higher-order thinking questions.
- Restructure Classroom Environments by reducing the class size of Moroccan EFL classrooms.
- Provide systemic professional development opportunities that foster long-term Action Research mentoring.
- Adjust the official pedagogical guidelines to reduce the sheer volume of content coverage in the baccalaureate syllabus to optimize genuine and authentic EFL teaching and learning.

10. Conclusion

In conclusion, this action research confirms Socratic Questioning (SQ) as an effective driver of critical thinking development in reading in Moroccan EFL classrooms, achieving a moderate normalized gain, though its full potential hinges on overcoming entrenched systemic and affective obstacles. The findings reveal a critical disconnect between students' cognitive capabilities and the rigid demands of an exam-centric baccalaureate system. Eventually, future research should adopt longitudinal studies that measure the effect of SQ seminars in reading on changes in critical thinking skills over long periods of time. Also, there is a need to examine the integration of the SQ method in other language skills and to measure its impact on other higher-order thinking skills such as problem solving. In addition to that, investigating the impact of technology implementation in SQ seminars has been scarce in the literature; future research should take into account this variable to test its efficacy in optimizing the role of SQ in fostering critical thinking in EFL settings.

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