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Thinking about Thinking: Unveiling Self-Regulation as a Critical Thinking Skill in EFL Settings

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Abstract

In the context of 21st century education, fostering critical thinking skills has become a cornerstone of higher education, particularly in EFL settings. This study investigates the metacognitive dimension of critical thinking, focusing on self-regulation skills encompassing self-examination and self-correction subskills. Conducted with Master 1 EFL learners of Applied Linguistics at Mentouri University, Constantine 1, the research aims to assess students' self-regulation abilities, compare their self-perception with their actual performance, and provide insights into their reflective reasoning processes. Using a quantitative approach, the study employed a test based on Facione's (1990) critical thinking model, divided into two sections: a self-assessment Likert scale and multiple-choice questions measure. The findings revealed a moderate level of self-regulation among participants, with noticeable discrepancies between self-assessed abilities and actual performance. The study concludes with recommendations for pedagogical interventions aimed at improving students' self-regulation skills and calls for further research to explore longitudinal and qualitative dimensions of self-regulated critical thinking.

Key Words: critical thinking, self-regulation, metacognition, EFL settings, Algerian higher education

1. Introduction

The demands of 21st century education have shifted dramatically, emphasizing the need for learners to move beyond relying solely on rote learning and repetitive drilling. In an era defined by rapid technological advancements, students are expected to engage actively with

knowledge, question assumptions, and solve complex problems with critical insight, especially amidst the information overload that emerged in the globalized age. This transformation necessitates equipping learners with critical thinking skills that are vital to manage their everyday social and professional lives.

At the heart of developing critical thinking lies metacognition and reflective thinking, which serve as key mechanisms for monitoring, evaluating and improving one's reasoning processes. Metacognition reflects an individual's awareness of his own thinking, and in this context, it is represented by the skill of self-regulation. The latter involves two interrelated sub-skills: self-examination, which refers to the ability to assess one's thought processes, and self-correction, which focuses on making necessary adjustments to improve reasoning outcomes. The present paper investigates the national context by targeting Algerian higher education. Specifically, we opted for master 1 EFL learners of applied linguistics at Mentouri University, Constantine 1, as a population from which we selected 20 participants randomly as a sample from a total population of 90 students which is representative.

While critical thinking levels of EFL learners have been extensively explored in previous research, there remains a noticeable gap in studies examining its connection with metacognition, particularly self-regulation. This study seeks to bridge this gap by investigating the metacognitive dimension of critical thinking through:

- Assessing EFL learners' level of critical thinking, particularly self-regulation skills.
- Comparing participants' self-perception of their self-regulation abilities with their actual level.

In this regard, this research is fueled by the following questions:

1- To what extent are Master 1 EFL learners able to regulate their reasoning process?

2- Are they aware of their actual level of self-regulation as a critical thinking skill?

We hypothesize that:

1- Master 1 EFL students have a moderate level of self-regulation.

2- They possess a clear awareness of their actual level of self-regulation abilities.

So as to address the research questions, the quantitative method was deployed, using a two test based on Facione (1990) model of critical thinking. It comprises a self-assessment scale and a series of MCQs along with justifying the reasoning followed each time to gather deep insights on the participants' level of reflective thinking.

2-Literature Review

2-1-Critical Thinking: An Overview

Conventional education has often been criticized for its emphasis on imparting knowledge rather than equipping learners with the skills necessary to navigate real-world challenges. In today's rapidly changing world, what learners truly need is not merely information but the competence to manage social and professional situations effectively after graduation, essentially, preparing them for the workforce. Therefore, the role of modern education transcends the traditional goal of knowledge transmission, shifting towards cultivating essential skills, most notably critical thinking skills.

These skills represent an amalgamation of cognitive abilities that enable students to critically evaluate the knowledge they encounter and apply it effectively. As Sternberg (1986) defines it, critical thinking "comprises the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts" (p.3). This definition stresses the dynamic and multifaceted nature of critical thinking, highlighting its role in active problem-solving and informed decision-making. In a similar vein, Facione (2000) emphasizes an essential dimension of critical thinking: the ability to recognize and reject personal biases. Since bias is an inherent aspect of human thought, students must develop the skill to critically assess the accuracy and reliability of the information they encounter, regardless of its source.

The foundation for this elevated form of thinking can be traced back to Socrates (as cited in Fisher, 2001), who rejected the notion of merely providing learners with ready-made answers. Instead, he introduced a method of questioning aimed at stimulating deeper thought. According to Fisher (2001), Socrates viewed education as a process centered not on providing final answers but on challenging those answers, examining underlying assumptions, posing deeper questions, and thoughtfully reflecting on established knowledge.

2-2- Critical Thinking in EFL

In English as a Foreign Language (EFL) settings, critical thinking plays a pivotal role in fostering both language proficiency and overall academic success. According to Paul and Elder (2001) critical thinking is an advanced cognitive skill, characterized by intentionality and self-regulation. Unlike everyday, automatic thoughts, critical thinking is a deliberate and reflective process where individuals are actively aware of their reasoning and decision-making.

What often distinguishes high-achieving students from low-achievers is their level of critical thinking skills, which play a decisive role in academic success and language proficiency. Abbasi and Izadpanah (2018) demonstrated, through correlation analysis, a significant relationship between critical thinking and academic success. Their regression tests

also demonstrated that English language proficiency can be reliably predicted based on the learners' critical thinking skills. Shahzadi et al. (2020) reinforced these findings by revealing a strong positive correlation between critical thinking skills and academic achievement among intermediate students. Similarly, Gajić (2021) conducted a quantitative study and confirmed a robust connection between students' critical thinking abilities and their proficiency in acquiring foreign languages.

Further, scholars have highlighted the role of critical thinking in enabling learners to solve problems and engage in complex classroom tasks (Facione, 2000; Eggen & Kauchak, 2015). Lin (2018) adds that students who aspire to excel in both academic and professional settings must prioritize the development of critical thinking skills, as these competencies are essential for navigating challenges and achieving long-term success.

2-3-Importance of Cultivating Learners' Critical Thinking

Critical thinking equips students with essential skills to address social, scientific, and practical challenges effectively (Shakirova, 2007). In the age of rapid information growth, Al-Ghadouni (2021) emphasizes that critical thinking helps students access, evaluate, and use information accurately while fostering independence and reducing reliance on others. Additionally, critical thinking enhances the students' ability to analyze ideas, solve problems systematically, and approach learning with curiosity and skepticism. It promotes active participation, effective communication, and greater involvement in the educational process, leading to improved academic and professional outcomes. In EFL education, critical thinking plays a significant role in helping learners process and understand language content more effectively. It enables them to select relevant information, apply suitable learning strategies, and improve their overall language proficiency (Facione 1990; Halpern 2014). These skills are crucial for EFL students to achieve academic success and adapt to diverse learning contexts. Overall, critical thinking is vital for fostering independent thought, sound judgment, and strategic learning skills, making it an indispensable component of both general and EFL-specific education.

2-4-Components of Critical Thinking

Critical thinking is widely recognized as a multifaceted construct, comprising dispositions and skills that play a distinct yet complementary role in fostering effective thinking. While skills refer to the ability to perform specific cognitive tasks, dispositions represent the willingness or inclination to apply those skills consistently and effectively across

different contexts (Facione, 1990). In simpler terms, a skill is the ability to think critically, while a disposition is the attitude or mindset that drives an individual to engage in critical thinking.

According to Facione (1990), critical thinking dispositions include open-mindedness, inquisitiveness, systematicity, analyticity, truth-seeking, and self-confidence in reasoning. These traits determine whether a person will actually engage in critical thinking, even when they possess the necessary cognitive skills. Halpern (1998) emphasizes that without these dispositions, critical thinking skills remain underutilized, as individuals may not see the value in applying them consistently.

On the other hand, critical thinking skills refer to the cognitive abilities required to analyze, evaluate, and synthesize information effectively. Bloom's Taxonomy (1956) highlights key cognitive skills such as analysis, evaluation, and synthesis, which are essential for higher-order thinking. Similarly, Facione (1990) identifies six core critical thinking skills: interpretation, analysis, evaluation, inference, explanation, and self-regulation. Paul and Elder (2001) also emphasize these skills but place significant importance on clarity, accuracy, precision, and logical reasoning.

2-5- Metacognition and Critical Thinking

While critical thinking is primarily recognized as a cognitive skill, it cannot be reduced to purely mental processes; it also integrates a significant metacognitive component. Halpern (2014) explains that "Metacognition comes into play as the governor function that directs how to plan and assess the prior knowledge, and how to monitor the thinking development" (p. 27). In other words, metacognition serves as an oversight mechanism, guiding individuals to strategically plan their approach to tasks, evaluate their existing knowledge, and continuously monitor their progress and reasoning. Likewise, Paul (1995) highlights the reflective nature of metacognition by describing it as "thinking about your thinking while you're thinking in order to make your thinking better" (p. 91). This emphasizes the importance of self-awareness in the thinking process, where individuals are not only engaged in analyzing and solving problems but are also consciously observing and refining their cognitive processes in real time.

The integration of metacognition into critical thinking ensures that the thinking process is not only logical and structured but also reflective and adaptable. Learners who develop metacognitive awareness are better equipped to identify flaws in their reasoning, question their assumptions, and adjust their strategies when encountering challenges. In

essence, critical thinking extends beyond structured reasoning and logical analysis; it requires an ongoing internal dialogue that evaluates thought patterns, measures their effectiveness, and refines them to improve outcomes.

2-6- Self-Regulation

Facione's (1990) model of critical thinking is widely regarded as one of the most comprehensive frameworks in both educational and research contexts. Its popularity stems from its structured and holistic approach to identifying the essential core skills of critical thinking. According to this model, critical thinking comprises six interrelated skills: interpretation, analysis, evaluation, inference, explanation, and self-regulation. Each skill plays a specific role in fostering a critical mindset, but self-regulation stands out as a metacognitive dimension that enhances all other skills through reflection and continuous improvement. The latter involves actively planning, monitoring, and assessing one's thought processes to ensure clarity, accuracy, and sound reasoning. It requires individuals to reflect on how they think, why they reach certain conclusions, and whether their reasoning is valid. This reflective approach enhances objectivity, minimizes biases, and supports better decision-making. Paul et al. (1997) highlighted the importance of self-reflection, urging individuals to challenge deeply-rooted beliefs and question assumptions that may seem unquestionable. Similarly, Dewey (1910) emphasized reflective thinking, advocating for a conscious and deliberate examination of thoughts to avoid reliance on taken-for-granted information.

2-6-1-Facione's Self-Regulation Skill

Self-regulation involves ongoing monitoring and evaluation of one's reasoning and thought processes. It empowers individuals to reflect on their conclusions, critically examine their assumptions, and modify their thinking strategies if flaws are detected. This reflective awareness not only helps in identifying weaknesses in reasoning but also contributes to producing well-informed and objective conclusions. As a metacognitive skill, self-regulation functions as a quality control mechanism, ensuring that reasoning remains consistent and well-founded. It encompasses two fundamental sub-skills.

Self-Examination: It refers to the conscious evaluation of one's own reasoning process. A self-aware critical thinker actively questions their own assumptions, beliefs, and biases, striving to eliminate prejudice, emotional interference, and subjective judgments. They continually monitor the application of cognitive skills, challenge their opinions, and reassess their conclusions to ensure logical coherence and accuracy.

Self-Correction: It is the ability to identify flaws or inconsistencies in one's reasoning and make the necessary adjustments. When errors are detected, a critical thinker demonstrates intellectual humility by revising flawed assumptions, modifying methods, or reconsidering conclusions. This willingness to refine one's thinking highlights a commitment to achieving accuracy and logical consistency.

2-6-2- Significance of Self-Regulation Skills

The importance of self-regulation cannot be overstated, as it directly influences the students' ability to think critically, learn independently, and adapt to new challenges. Kusmaryono and Nizaruddin (2023) highlighted a strong connection between critical thinking, self-regulation, and independent learning, emphasizing that students who are capable of regulating their thought processes are better equipped to take charge of their own learning journeys. Additionally, Domino et al. (2024) identified several key self-regulation skills essential for effective learning, including Planning, Executing, Monitoring, Responding, and Reflecting. These skills form a cycle of continuous improvement, allowing students to set goals, implement strategies, assess their progress, and make necessary adjustments. Ultimately, self-regulation serves as both a foundation and a driving force behind critical thinking. It bridges the gap between cognitive processes and reflective practices, ensuring that critical thinking is not only systematic and logical but also adaptive and self-aware. For EFL learners, developing self-regulation skills is particularly crucial, as it enhances their ability to approach language learning with independence, resilience, and a growth-oriented mindset.

2-7-Assessing Critical Thinking

In the journey of prompting critical thinking skills, assessment is crucial. It informs teachers of their teaching methods and strategies and the learners' progress. To this end, various methods can be deployed including surveys, interviews, teacher-designed tasks, self-assessment reports, and standardized tests. Each approach has its merits; while surveys and interviews provide qualitative data on learners' perceptions and experiences, standardized tests offer measurable, objective results. Among the most common critical thinking standardized tools is the California Critical Thinking Skills Test (CCTST), elaborated based on Facione's (1990) model. It comprises 34 multiple-choice questions designed to evaluate five core critical thinking skills. These questions aim to measure how well individuals can reason through complex scenarios, make informed decisions, and draw sound conclusions. However, the effectiveness of standard tests like the CCTST depends on their adaptation to

specific educational contexts, particularly in EFL settings. Non-native learners may face challenges related to language barriers, unfamiliar cultural references, or context-specific examples embedded in the test content which impedes the tests' validity. Therefore, adapting such assessments to align with the linguistic proficiency and cultural background of EFL learners is crucial (Ennis, 1993; Halpern, 2014). By integrating several assessment tools, educators can measure critical thinking skills more effectively combining the rigor of standard tests with self-reported insights along with qualitative data to ensure rich and well-supported findings.

3-Methodology

3-1-Context

The current research is framed within the context of Algerian higher education, particularly targeting EFL learners. As the educational landscape is being revolutionized, Algeria strives to align its educational objectives with global academic standards. As a result, developing critical thinking skills has emerged as a fundamental goal in higher education curricula. In this regard, this study emphasizes the metacognitive dimension of critical thinking skills, investigating self-regulation skill, which encompasses self-examination and self-correction. Given the increasing importance of fostering reflective and independent learning, this research aims to assess the participants' level of self-regulation, exploring how these students evaluate and adjust their reasoning processes.

3-2-Population and Sampling

The population of this study consists of Master 1 EFL students majoring in Applied Linguistics at Mentouri University Constantine, Algeria, with a total population of 92 students. A sample of 20 students was randomly selected to ensure objectivity and reduce potential bias. Although the sample size may seem limited, it provides valuable insights into the participants' level of critical thinking. This limitation is primarily due to the timing of the study, during which many students were absent which rendered it challenging to include a larger sample. The choice of Applied Linguistics was intentional, as, according to the English department, students with the highest undergraduate averages tend to select this specialization. This academic excellence increases the likelihood of identifying advanced levels of critical thinking skills among participants. Furthermore, ethical considerations were respected; participants were informed beforehand that their contribution to the research is voluntary, anonymous and confidential.

3-3-Research Tools and Methods

This research is descriptive in nature, aiming to gauge EFL learners' self-regulation levels as part of the critical thinking process. To this end, a paper-and-pen test was administered within a timeframe of 15 mn. The test consists of two sections designed to provide both measurable data and insights into participants' reasoning processes. The first section features a self-assessment scale comprising four five-point Likert-scale items, ranging from "strongly disagree" to "strongly agree". This section allows participants to reflect on and evaluate their own self-regulation practices. The second section, however, includes five multiple-choice questions (MCQs), each requiring participants to justify their selected option. This justification component offers a deeper understanding of their reasoning and self-corrective thought processes. Further, the collected data were analyzed quantitatively, enabling an objective assessment of the participants' self-regulation levels within the critical thinking framework.

3-4-Scoring

The scoring system was carefully designed to ensure balance between the two test sections, reflecting both subjective self-assessment and objective evaluation of self-regulation skills. In the Likert scale section, each of the four items was assigned a score ranging from 1 to 5 points, based on the participant's response. Consequently, the total score for this section, which represents the participants' self-perception of their self-regulation abilities, is 20 points. However, in the MCQ section, each question was divided into two components. The multiple-choice response was scored 2 points for a correct answer and 0 points for an incorrect one While the justification response was scored based on reasoning quality; 2 points were given for a logical and relevant reasoning, 1 point was given for a logical but incomplete reasoning and 0 points was assigned for an irrelevant or incorrect reasoning. With five questions in total, the maximum score for this section is also 20 points. Balancing both sections ensures that the study captures self-regulation from both subjective and objective perspectives, offering a more comprehensive evaluation of the participants' critical thinking abilities.

3-5-Test Validity and Reliability

To ensure test validity, the assessment was grounded in the comprehensive framework of critical thinking skills developed by Facione (1990) that was established through consultation with a Delphi panel of experts. In constructing the MCQs, efforts were made to emulate the California Critical Thinking Skills Test (CCTST) while adapting the items to the

national context of EFL learners, taking into account their language proficiency levels. While Facione's model encompasses six core skills, this study specifically focuses on the metacognitive dimension of critical thinking, represented by self-regulation, involving two sub-skills: self-examination and self-correction.

To further enhance the validity and reliability of the test, two experts were consulted to evaluate the content's relevance, clarity, and comprehensibility, contributing to both content validity and face validity. Additionally, construct validity was considered to ensure that the test items accurately measure what they are supposed to measure.

Ultimately, feedback and recommendations derived from this expert consultation were meticulously incorporated to refine and enhance the quality of the test, ensuring its robustness as an assessment tool.

To assess internal reliability, we opted for calculating Cronbach's alpha, which measures the extent to which test items are internally consistent. Using the Statistical Package for Social Sciences (SPSS 26), the reliability coefficient was found to be 0.72, indicating acceptable internal consistency. This suggests that the items reliably measure the intended construct.

Table 1: Cronbach's Alpha

Statistiques de fiabilité		
Alpha de Cronbach	Alpha de Cronbach basé sur des éléments standardisés	Nombre d'éléments
,721	,705	9

4-Results

4.1 Test Results Overview: Self-Regulation Abilities of EFL Learners

This section presents the results of the self-regulation abilities test administered to 20 Master 1 EFL Applied Linguistics students. The data were analyzed using SPSS.26, and the findings are displayed across two sections: the Likert Scale and the Multiple-Choice Questions (MCQs). The table below provides a summary of the minimum, maximum, mean scores, and standard deviation for both the combined test, the Likert scale, and the MCQs.

The average percentage for each section offers insight into the overall performance of the participants.

Table 2: Test Scores: Overview

	Combined Test	Likert Scale	MCQs
Number of participants	20	20	20
Min Score	17	10	2
Max Score	37	18	20
Mean Score	27.35	14.9	12.45
Average Percentage %	68.37	74.5	31.12
Std. Deviation	6.21	2.44	26.24

The table above reveals the overall performance of the participants, as measured by the combined test, in which a mean score of 27.35 out of a possible 40 points represents an average percentage of 68.37%. The standard deviation of 6.21 indicates a moderate variation in the participants' performance, with scores ranging from 17 to 37, which suggests that while most participants performed within a middle range, there were some notable differences in individual results.

As for the Likert scale section, which is designed to assess self-regulation from the learners' perspective, yielded a mean score of 14.9 (74.5%). This indicates relatively high self-regulation awareness among the participants, with scores ranging from 10 to 18. The low standard deviation of 2.44 reflects a more consistent response pattern across the participants, suggesting that most students have a similar perception of their self-regulation abilities. The MCQs section, on the other hand, demonstrates a mean score of 12.45 (31.12%). The wide range of scores, from 2 to 20, along with the high standard deviation of 26.24, indicates that there was significant variance in participants' ability to apply self-regulation strategies.

4-2-Classifying EFL students into Categories

By converting the scores into percentages then dividing them into categories, we obtained three categories as follow:

Table 3: Self-Regulation Categories

Category	Score Ranges	Number of participants
Low self-regulation level	0 - 13.33 points	0 participants
Moderate self-regulation level	13.34 - 26.66 points	10 participants
High self-regulation level	26.67 - 40 points	10 participants

As appeared in table 3, participants fall into two categories. Half of them (10 respondents) are considered moderately self-regulated scoring from 17 to 26 points across the two sections of the test while the other half proved to have high self-regulation abilities with scores ranging from 29 to 37 points.

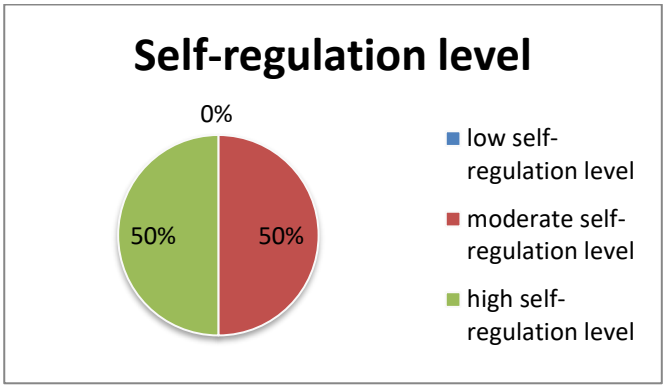

Figure 1: Self-regulation levels among EFL learners

4-3. Self-Assessment Findings

Table 4: EFL learners' awareness of self-regulation skills significance

Items	Min Score	Max Score	Mean Score	Average Percentage
I frequently assess my thinking, verify its correctness, and make adjustments to enhance my thought process.	2	5	4.1	82
I question my own views by examining opposing viewpoints and counterarguments to gain a more comprehensive understanding.	2	5	3.3	66
I always reflect on my decisions, evaluating their accuracy and impact to confirm they are solid and well-supported	1	5	3.9	78
I am able to detect when my thought process is incorrect or biased, and I take proactive steps to correct and overcome these biases.	1	5	3.6	72

The table above demonstrates Self-Assessment Findings related to the self-regulation skills, focusing on participants' ability to monitor, evaluate, and adjust their thought

processes. It includes four key items reflecting two key components of self-regulation skills: self-examination and self-correction.

The first item seeks to check how the frequency of checking one's own thinking, verify its accuracy, and make improvements when needed from participants' perspective. Scores range from 2 to 5, with an average of 4.1 (82%), showing a strong habit of self-assessment. The second item examines whether participants challenge their own views and beliefs by considering different perspectives and counterarguments. Scores vary between 2 and 5, with an average of 3.3 (66%), indicating moderate engagement in this reflective practice. Moreover, the third item focuses on how participants reflect on their decisions to ensure they are well-founded and impactful. Scores span from 1 to 5, with an average of 3.9 (78%), reflecting a solid level of self-evaluation. The fourth and last item, however, assesses participants' ability to notice biases in their thinking and actively address them. Scores range from 1 to 5, with an average of 3.6 (72%), suggesting a fairly strong awareness of cognitive biases.

4-5. MCQs Findings

Table 5: EFL learners Actual Skills test performance

Questions	Min Score	Max Score	Mean Score	Average Percentage
Q1	0	4	2.65	53
Q2	0	4	2.35	47
Q3	0	4	2.2	44
Q4	0	4	2.65	53
Q5	0	4	2.5	50

This section, yet, is deemed to offer a more objective perspective on participants' level of metacognitive critical thinking skills as it provides real situations for the students simulating their everyday life situations to check how they would typically react in each. Further justification was required so as to delve deeper into their thinking process.

The mean scores for the questions range from 2.2 to 2.65, indicating a moderate level of response from participants. For Q1 (How to manage emotions and maintain motivation after receiving critical feedback on a project?), the mean score is 2.65, corresponding to 53% of the maximum possible score which is a moderate rate. In Q2 (What is your best time management strategy to get a hard task accomplished in a limited time?), the mean score is 2.35, reflecting a low percentage (47%) of students who have effective time management strategies. Q3 (How

can you maintain focus on a task while facing distractions?) shows the lowest mean score of 2.2, or 44%. For Q4 (What would your response be when you get frustrated due to committing mistakes while working on a task?), the mean score is again 2.65, which is 53%. This reflects a moderately effective response from participants when dealing with frustration due to mistakes. Further, the last question (If you are assigned several tasks at the same time, how can you manage the situation?) has a mean score of 2.5, corresponding to 50%. This indicates a moderate ability to manage multiple tasks simultaneously, with some participants demonstrating effective multitasking skills. Overall, the data reflects a moderate level of performance across all five questions, with participants generally scoring below the maximum possible score but showing consistent results within this range.

5--Interpretation and Discussion of Test Results

5-1-Overall Performance (Combined Test)

Measuring Master 1 EFL students of applied linguistics self-regulation abilities revealed significant insights. The overall performance of participants was moderately high in which the mean of the combined test was 27.35 out of possible 40 points which corresponds to 68.37%. The standard deviation of 6.21 indicates moderate variance in the total test scores. While the average score suggests that most participants had an adequate level of self-reflection, the scores distribution highlights that there are notable differences in how well participants performed with scores ranging from 17-which is a moderately low level- to 37, which reflects excellent self-regulation skills.

The Likert scale, which assessed self-regulation from the participants' perspective, yielded a mean score of 14.9 (74.5%). This suggests that, on average, the students have a relatively high level of awareness regarding their self-regulation abilities. This result is encouraging, as it demonstrates that the participants generally recognize the importance of self-regulation in their academic and personal lives. The standard deviation for the Likert scale is relatively low (2.44). It suggests that most students had similar responses. This consistency could imply that the participants share a common understanding of self-regulation, which is likely to be influenced by their academic background. It is noteworthy to mention that self-reported data, like that from the Likert scale may not depict the actual level of learners, being influenced by personal biases such as social desirability or overconfidence which is embodied in the high scores ranging from 10 to 18.

The MCQs, however, are more likely to yield more robust findings as they are designed to assess the participants' ability to apply self-regulation strategies in various scenarios along

with the justification requirement that unveils the depth of learners' reasoning processes. The mean score of 12.45 (31.12%) is notably lower than the Likert scale results. This indicates a significant gap between the participants' perceived self-regulation abilities and their actual ability to apply these strategies in real-life situations. This might be interpreted as although some students are still struggling with self-reflection strategies, they are highly aware of how they normally behave and the significance of thinking about their own thinking. Further, this discrepancy might be tied to teachers practices in EFL classes in which we suppose that they exposed these learners to metacognitive strategies theoretically but they either did not go further cultivating and modelling these skills with their students or they followed ineffective strategies and methods doing so. Aouaidjia and Sakraoui (2024) confirmed a positive correlation between self-regulation skills and writing performance in EFL academic settings, highlighting the importance of effectively integrating metacognitive strategies into teaching practices. We, therefore, encourage EFL tutors, in general, and teachers of Algerian higher education, in particular, to prompt critical thinking skills with much focus on metacognition in EFL classes using a variety of methods and techniques so as to urge EFL learners to take lead over their own thinking and further, their own learning. Having students scoring 2 points out of 20 and others reaching the full score, with a notably high standard deviation (26.24), exhibits a vast distance between learners capabilities; while some of them are capable of evaluating their thinking, adjusting it constantly, questioning their views and beliefs and correcting their thought processes so as to come up with sound decisions, others are totally incapable of this leaning more towards biased thinking, taking the perceived information for granted, and refraining from investigating and rejecting fallacies. This confirms that self-regulation and critical thinking skills are not inherent capacities, but rather learnable. The differences in scores might be due to individual differences as academic experience, motivation, or prior exposure to self-reflection training as it might be due to social factors as emotional support and learning environment. The main hindrances to developing critical thinking skills among learners, as identified in the study of Touati (2016), include external factors such as the burden of traditional management styles, inadequate administrative support, increased teacher workload, limited resource materials, and unclear curriculum objectives regarding process skills. Additionally, internal classroom challenges, including large class sizes, lengthy syllabi, mixed-ability students, and a lack of innovative and reflective teaching practices, further impede the cultivation of critical thinking abilities. Hereby, we suggest teachers intervention through differentiated instruction and a focus on

real-world applications guiding learners not only to acquiring critical thinking skills but also to transferring them into various out-of-class situations.

Overall, as the pie chart (1) demonstrates, all participants demonstrated an adequate level of self-regulation in which 10 respondents fall into the moderate level category and another 10 respondents reflected high self-reflection capabilities while none of them was considered as having a low level of self-regulation despite the low scoring in the MCQs part. This balance can be attributed to the high self-perception results, as participants displayed a notable awareness of their self-regulation abilities, which likely influenced their overall performance.

5-**2-Self-Assessment Findings Interpretation**

Despite the high awareness reflected by the total score of the likert scale findings, students' capacities differ across items. The first item was recorded as having the highest mean score (4.1) which represents a high frequency of assessing one's own thinking, checking its accuracy and adjusting it constantly. Monitoring personal thoughts lies at the heart of self-reflection avoiding potential biases. Rogers (2001) explained that ''through reflection, learners develop their ability to integrate the insights they gain into their learning/life experience so that they can make better choices and improve their learning'' (37). This highlights the essential role of reflective practices in enhancing learners' capacity to evaluate and refine their cognitive processes, ultimately fostering more effective learning outcomes. Whereas the second item scored the least (3.3) indicating learners' challenges with questioning their deeply-held beliefs by considering opposing views and counterarguments. Indeed, questioning beliefs that are rooted in one's culture or religion is challenging as humans are the product of their environment and, thus tend to see the world from a single perspective pertinent to the in-group they belong to. Moving beyond the egocentric and ethnocentric boundaries to view the world with critical lens requires effective skills and appropriate training. Additionally, the third item received a relatively high mean score (3.9, 78%), highlighting a strong tendency among participants to engage in reflective practices as regards decision making. This is one of the crucial skills students must cultivate so as to end up with sound and well-supported decisions about their social and professional lives. Last but not least, the fourth item marked a moderately high mean score (3.6) revealing participants' ability to recognize potential flaws in their thinking and willingness to overcome them and correct themselves. This awareness is deemed to be the first proactive step towards building further self-examination and self-correction skills. The minimum score of this item (1)

reinforces the fact that engaging in active self-correction is harder than simply indulging in a reflective thinking and recognizing flaws. Therefore, students need to be equipped with the necessary toolkit to manage such situations.

5-3-MCQs Findings Interpretation

It appears that what students can actually do does not align with what they suppose can do. The variance of answers in which some students scored 0 in particular questions while others scored 4 out of 4 reveals distinct levels of self-regulation among them. As for the first question, which targets capacities of managing emotions and motivation maintenance while working on a project, received the highest mean (53%). It indicates that nearly half of the respondents are not capable of managing their psychological state dealing with negative feedback. Some students selected illogical options as “I would avoid seeking feedback” or “I would totally ignore the feedback”. They justified their choice as being the right way to avoid frustration”. This might be the effect of negative non-constructive feedback they receive from their teachers in while a balance should be maintained between pointing out the imperfections and successful instances of a student. The second item, however, received lower mean score (2.35) reporting weak time management strategies for more than half of the participants. Some of them went for “I would focus on the task to finish it before the deadline regardless the quality” option justifying that “after all, a win is a win”. Few students selected the “I would leave the work to the last minute before the deadline” assuming that they “prefer to work intelligently rather than hard” which still illogical reasoning. The lack of time management and logical reasoning skills may pose significant challenges to learners' academic success. As distractions vary, especially in the digital age, students need to overcome them to maintain focus on the worked-on- task. However, this skill is the least common among participants across the five self-regulation areas (44%). Some respondents preferred ignoring distractions and proceeding the work even if less focused while others tend to carry on working on the assignment hoping distractions will stop”. This reveals their inability to hold charge of their own learning process. Senouci (2019) stressed the need for implementing metacognitive strategies to develop learning autonomy suggesting the strategy-based instruction (SBI) as a powerful tool. Integrating such strategies can empower learners to manage distractions effectively and maintain sustained attention on academic tasks, ultimately fostering greater autonomy in their learning journey. Moreover, Students were asked about their preferred approach to overcome frustration when committing mistakes working on an assignment. Some selected “I would ignore the mistake and pretend it did not happen”

whereas very few who opted for "I would give up on the task because it is too difficult". Both options reveal illogical flawed reasoning. Yet, more than half of the respondents showed sound thinking opting for taking a break and learning from the mistake to improve. Finally, facing an overload of assignments is a common challenge among students. Therefore, we investigated their response to such situations. Findings unveiled a moderate mean score (50%) for this question. This indicates that some learners are capable of taking control over their learning process by prioritizing tasks and setting clear plan and goals. Most justifications that align with this option were sound and well-supported as "focusing on several tasks at the same time may distract my brain and lower the quality of my work". Still, some of them favoured delegating tasks to others escaping their responsibility or even working on several tasks simultaneously without a clear plan. This corroborates with the study conducted by Guettaoui and Arab (2023) who analyzed a bulk of previous studies on learning autonomy among Algerian learners confirming that EFL learners in Algeria, generally, lack this skill.

6-Conclusion

This study underscores the critical role of self-regulation as a metacognitive dimension of critical thinking among Master 1 EFL learners of Applied Linguistics at Mentouri University, Constantine 1. In an era characterized by rapid technological advancements and an overwhelming influx of information, the ability to monitor, evaluate, and refine one's reasoning processes has become indispensable.

This paper aims to assess learners' self-regulation skills, compare their self-perception with their actual performance, and provide insights into their capacity for reflective thinking. The results revealed that while participants demonstrated a moderate level of self-regulation, discrepancies emerged between their self-assessed abilities and their actual performance, highlighting the need for targeted pedagogical interventions. These findings emphasize the importance of integrating metacognitive strategies into EFL curricula to foster learners' self-awareness, self-examination, and self-correction skills. Educators are encouraged to create reflective learning environments that empower students to become active participants in their reasoning processes. Future research could expand on this study by exploring larger sample sizes or incorporating qualitative methods to gain deeper insights into learners' reflective practices. Additionally, longitudinal studies could track the development of self-regulation skills over time to better understand their impact on overall critical thinking proficiency. In conclusion, fostering self-regulation as a core critical thinking skill is not merely an academic

necessity but a vital component in preparing learners to navigate the complexities of the modern world with confidence, clarity, and intellectual independence.

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