European Journal of English Language Teaching
ISSN: 2501-7136
ISSN-L: 2501-7136
Available on-line at: www.oapub.org/edu

DOI: 10.46827/ejel.v11i1.6516 Volume 11 | Issue 1 | 2026

THE ROLE OF INTEGRATED IMPLICIT AND EXPLICIT (META) COGNITIVE READING STRATEGIES TRAINING IN REVAMPING ENGLISH (L3) READING COMPREHENSION GAINS AMONG MOROCCAN EFL HIGH SCHOOL STUDENTS: A QUASI-EXPERIMENTAL STUDY

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Abstract:
This study, conducted for a three-month period (from October through December) in 2017, aims at putting to the test the impact of integrated implicit and explicit (meta) cognitive reading strategy instruction (IECMRSI) on Moroccan EFL high school learners' reading achievement gains. To fulfill this stated objective, 76 high school-level students (Control Group: N=39; Treatment Group: N= 37) participated in this quasi-experimental study. The data were garnered by means of expository reading tests (the pre-test & the post-test), expository reading comprehension texts, and implicit/ explicit (meta) cognitive reading strategy training. The research outcomes attest to the robust potential held by the combined implicit and explicit reading strategy instruction in revamping the experimental groups' reading scores across the pre- and post-tests. As for the control group, it did not manifest any tangible progress regarding the reading achievement scores. Accordingly, some actionable recommendations and insightful implications associated with the teachability of English (L3) reading comprehension at the high school level are tacitly spotlighted.

Keywords: explicit/ implicit strategy instruction, metacognition, cognitive reading strategies, metacognitive reading strategies, reading achievement

1. Introduction

Scholarly research on metacognition, as a reflective, multimodal process involving planning, monitoring, and evaluating cognitive performance and learning practices

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(Flavell, 1971; Brown, 1980), is still in vogue. Indeed, metacognition, conceived as 'thinking about thinking' or 'cognition about cognition' (Flavell, 1981) within the vibrant domain of cognitive psychology, entails the engagement in the act of reasoning about one's thoughts, actions, and behaviors as well as the involvement in self-control in attempts to enhance the actual performance of a given cognitive task. Granted the core premise that metacognition and executive control (EC) formulate the firm groundwork for the conduct of a critical, inferential mode of reading, it is evident that the achievement of a robust form of comprehension can only be facilitated through metacognitive thinking. In this respect, executive control (EC), as a meta-strategic process requiring flexible recourse to working memory mechanisms and executive processes on a large scale, allows learners to perform a particular cognitive task (i.e., reading, writing, listening) in an organized, regulated, and efficient fashion. This is reinforced by Wang *et al.* (2009), who consider EC as the learner's capacity to plan and keep track of the use of text-based strategies for the purpose of achieving understanding. Most crucially, the methodical, resilient application of learning as well as reading strategies rests upon metacognition and executive functioning as key constituents in the meticulous execution of learning-oriented tasks. This reveals that the dependence on the working memory system is a foundational condition for strategically approaching different learning tasks with a maximal measure of efficiency.

As noted by Shimamura (2000), EC and metacognition reflect overlapping features and stark similarities in that they facilitate the performance of a vast set of cognitively-driven tasks. For the sake of clarity, they both play an instrumental role in helping learners decipher, analyse, and comprehend information and ideational content. Given this, it is manifest that the written text, being viewed as *"the verbal record of a communicative act"* (Brown & Yule, 1983, p.6), encapsulates insightfully rich input which the learners cognitively process to construct the intended meaning. That is, when the learners are exposed to any textual input, they are expected to deeply immerse themselves in a dynamically interactive and reflective process. This unravels that the written discourse is usually deemed as a piece of written language carrying the meaning the construction of which requires the resilient orchestration and practical application of cognitive (e.g., predicting, inferring, main idea selection, visualizing, underlining, note taking, paraphrasing) and metacognitive reading strategies (MRSs) such as planning strategies (e.g., goal-setting, background knowledge use), monitoring strategies (e.g., self-monitoring, self-questioning, rereading), and evaluating strategies (e.g., recalling, summarizing) (Msaddek, 2023, 2025). These two taxonomies of reading strategies (RSs) (i.e., cognitive, metacognitive) are firmly premised on cognitive flexibility and resilient thinking, which inherently represent the key essentials of an efficiency-driven English (L3) text processing.

Basically, in the Moroccan high school context, a large number of students find greater difficulties in deconstructing and generating an effective sense of the content encapsulated in a vast array of L3 written discourse. This can be attributed, as Grabe

(1991) maintains, to the fact that *"students do not simply recognize the words rapidly and accurately but are consciously attending to the graphic form"* (p.391). For this reason, learners should be encouraged by teachers to read English (L3) written texts through both top-down and bottom-up processing. In this way, learner readers can comprehend any text under study in a highly effective way. Yet, though most high school-level learners have recourse to bottom-up, top-down, and interactive processing modes previously nurtured through exposure to Arabic (L1) and French (L2) written texts from primary through high-school levels, they do experience some eventual difficulties in disentangling and comprehending the input of advanced EFL written discourse (Block, 1992; Hezam *et al.*, 2022). Hence, it is plainly critical to put to the test the viability of integrated implicit and explicit (meta) cognitive reading strategies instruction (IECMRSI) in revamping the learners' deep-level processing modalities and reading performance. This is the central axis around which the undertaken quasi-experimental study revolves.

2. Literature Review

2.1 The Metacognitive Theory

The term metacognition was initiated into the broad psycho-cognitive universe by Flavell (1971) with the chief intention of expounding the inherent mechanisms and control processes that are instrumentally activated by the human memory system. This led other cognitive and educational psychologists to push the set boundaries and draw a clear distinction between cognition and metacognition with a view to unearthing the intricate thinking processes, memory resources, and self-regulated behaviours involved in coping with cognitively-oriented activities (i.e., reading, writing). In this regard, whilst cognition is conceptualized as a mental activity involving such higher-order meta-processes as remembering, perceiving, learning and reasoning (Menary, 2007), metacognition, viewed through the prism of cognitive psychology and neuro-psychology as 'cognition about cognition', entails both recourse to the cognitive memory system (Flavell, 1981; Garner, 1987) which orchestrates the controlled and automatic information-processing modes and the dependence on the monitoring of cognitive tasks (i.e., reading, writing) through a select set of meta-level strategies intended to regulate and control the adopted course of action in various learning endeavors.

In fact, deemed as a fundamental action plan involving reflection on one's self-initiated thinking and enabling rational high-order reasoning, metacognition can be clustered into knowledge of cognition and regulation of cognition (Baker & Brown, 1984). Whilst knowledge of cognition denotes one's overall consciousness of cognitive resources and skills, regulation of cognition embodies one's potential meta-strategic moves of planning, monitoring, and evaluating (Anderson, 2002; Msaddek, 2013, 2025). They both play a fundamental role in managing and orienting self-regulatory mechanisms and self-directed actions. These two core components (e.g., knowledge of cognition, regulation of cognition) initiated by the working memory system are a typical incarnation of

metacognitive behaviors and control processes that facilitate the comprehension of the linguistic input and the generation of the language-bound output. This evinces that the execution of higher-order academic tasks (i.e., reading, writing) entailing declarative knowledge (the what), procedural knowledge (the how), and conditional knowledge (the when, where, and why) on a massive scale is robustly premised on the concerted, resilient usage of cognitive and metacognitive reading strategies (CMRSs).

Hence, metacognition, as a self-initiated mental process directed toward the fulfilment of learning-oriented goals (Flavell, 1971), occupies a constitutive part in revamping language learning and aiding the conduct of a wide spectrum of cognitive tasks (i.e., reading, writing) within the landscape of academia. This plainly reveals that the quality of dynamic monitoring and the utmost efficiency of executive control undertaken by the learners throughout the performance of a given cognitive task (i.e., reading, writing, listening, speaking) are fundamentally reliant upon the cognitive memory system, which facilitates the storage and retrieval of knowledge. In fact, the shrewd strategic awareness orientating the learners toward deeper, more robust engagement with any higher-order learning task is a core precondition to successful performance within the academic arena. When mature, autonomous learners are expected to cope with a cognitively demanding task, it is required that they reflect utter adaptability to the task requirements and strategic resilience in the deployment of cognitive processes and high-level mechanisms.

2.2. Major Reading Models

Reading is a complex cognitive process which requires the systematic use of higher-order strategies and deep-level heuristics (e.g., Kendeou *et al.*, 2014; Rapp & van den Broek, 2005; Turkeltaub *et al.*, 2003). It is conceived as the capability of constructing meaning through decoding the included written input. In effect, the performance of an efficacy-bound form of advanced-level L3 reading is contingent upon both metalinguistic awareness and metacognitive knowledge, which serve as the gateway to generating an efficient sense of the author's/writer's perceptions, views, and assumptions. Obviously, not only does reading involve such sophisticated skills as analysing, synthesizing, and critiquing the textual input in an effort to build up the high-level comprehension, but it also necessitates the deployment of cognitive (i.e., predicting, inferring, main idea selection, visualizing, underlining, note-taking, paraphrasing) and metacognitive strategies (i.e., goal-setting, background knowledge use, self-monitoring, self-questioning, rereading, recalling, summarizing) the execution of which is predicated on rationality, reflection, and meta-thinking (Msaddek, 2016a, 2016b, 2024, 2025). These three variables (i.e., rationality, reflection, meta-thinking) occupy a facilitative role in deriving the targeted meaning from any assigned written discourse across many languages (i.e., Arabic, French, English, Amazigh, Italian, German, Spanish, Portuguese, Russian, etc.)

In seeking to critically read any written passage and deeply engage with the included content, EFL learners adopt some approaches to make sense of the ideational input of the reading comprehension text. In fact, granted the cognitive complexity of the reading process (Kern, 1989) and the mental operations as well as the neural mechanisms it entails to an apparently substantial degree (Turkeltaub *et al.*, 2003), a SL/ FL written text can only be understood by the learners via implementing such reading modalities as the top-down, the bottom-up, and the interactive processes that prove to be of higher, more invaluable importance in assisting the readers to understand the textual meaning (Msaddek, 2023, 2025). In this respect, these reading modalities/ models (i.e., top-down processing, bottom-up processing, interactive processing) serve as efficient prerequisites to decipher, analyse, and comprehend the intended message of the texts written in Arabic (L1), French (L2), English (L3), or in any other language (i.e., Amazigh, Italian, German, Spanish, Portuguese, Russian).

To start with, the top-down processing prompts readers to depend heavily upon their prior knowledge as a potentially rich frame of reference, embedding critical perceptions, epistemic perspectives, and robust epistemologies. These componential elements, which are stored and retained in the working memory system, constitute a substantive part in facilitating the dimensional procedure of coming up with a varied corpus of predictions and thoughts with the intention of interpreting and understanding the underlying textual meaning. In this regard, Nuttall (1996) affirmatively declares that this kind of processing is consciously used by the learners with a view to pinpointing the purpose of the text and identifying the patterns of the writer's arguments and perceptions. It initiates the learners into the act of making logical inferences and deductions.

In effect, Nuttall (1996) expressly expounds that the top-down processing allows readers to form hypotheses, predictions, and assumptions that are considered as key factors to comprehend the meaning of the text and interpret the implicit content. To put it succinctly, using the top-down processing, readers make a series of hypothetical assumptions simply by reading the title of the text, noticing some key words in the text, or skimming the whole text under study. In this way, learner readers can make many predictions about the text under study which are strongly based on their own background knowledge and perspectival views.

Evidently, the top-down processing, which is 'conceptually-driven' in its essence, requires learners to be critical readers in the reading process. In other terms, the reader's previous knowledge, attitudes, predictions, and expectations, as claimed by many well-established, prominent reading researchers (e.g., Schwartz, 1984; Smith, 1982; Wood, 1983), play a significant role in readily decoding the textual input, swiftly finding out the contextual cues, and fully understanding the conceptual content of the text. The conduct of the reading procedure entails flexible recourse to working memory resources, which help readers to analyse, synthesize, critique, and question the ideational message of the text in an accomplished fashion. Thus, through this type of processing, which is predicated on inferential abilities and decoding mechanisms, learners depend upon their

overall prior knowledge so as to reach an efficacy-driven form of comprehension of the written passage.

As regards the bottom-up processing, it refers to the manner through which readers extract the information and meaning from the text. That is, in this type of processing, which is text-bound in nature, learners rely upon the process of finding the meaning of words and checking the syntactic structure of sentences included in the text (e.g., Gough, 1976; LaBerge & Samuels, 1985). In fact, the bottom-up processing enables readers to untangle the embedded meaning and construct a sufficient understanding of the text without entirely depending on their background knowledge or making any kinds of predictions about the subject matter of the text. This fact is strongly confirmed by Grabe and Stoller (2001), who state that bottom-up processing entails that "*the reader creates a piece-by-piece mental translation of the information in the text, with little interference from the reader's own background knowledge*" (p.32). This outstandingly showcases that readers, adopting this type of processing and immersing themselves in textual synthesis, reflect greater dependency on the multifaceted process of understanding the meaning of words, sentences, and paragraphs in order to make effectual sense of the content of the reading passage.

For this reason, readers are highly required to recognize all the concepts contained in the text for formulating an overall high-level comprehension of the stated ideas, postulates, and assumptions. Indeed, the focal emphasis, in this distinct mode of processing, is placed on the way readers derive the essential information from the written discourse. This shows that the bottom-up processing occupies an increasingly important role in the reading activity as readers are supposed to figure out the meaning of all the words and sentences incorporated in the written discourse (Msaddek, 2025). In other terms, through the nurturing of the bottom-up processing mode, readers can cope with and understand the information of the text in a principled way. This leads to the valid claim that the learners' adoption and deployment of the bottom-up processing helps them to mobilize their working memory resources and activate their previously acquired background knowledge in an endeavour to reinforce their comprehension of the textual message.

In what concerns the interactive model, it is manifestly explicit to postulate the view that this typology of processing remains one of the most successful strategies in teaching the receptive skill of reading. It is really a complete combination of top-down and bottom-up processes, which can be implemented simultaneously throughout the multifaceted reading process. This stated fact is firmly advocated by Eskey (1988), who admits that the interactive model involves the interaction between information obtained by means of bottom-up decoding and information provided by means of top-down analysis (p. 96). This exhibits that the dynamic interface between the bottom-up and the top-down models is sturdily contingent upon meta-level information processing modalities, which are typically embodied in automatic processing and controlled processing.

Worthy of critical, utmost consideration is the premise that the interactive processing is a systemic blending of the two reading modalities (i.e., top-down processing, bottom-up processing) that immensely enable smooth information processing. In simpler terms, as learner readers are invariably exposed to a wide spectrum of Arabic (L1), French (L2), and English (L3) written discourse along the continuum of their studies at the high school level, they tend to interactively adopt both the top-down and the bottom-up processing modes with the purpose of inferring the intended meaning, and thus attaining high-level, adequate comprehension. Thus, the assurance of any sophisticated form of reading performance rests upon both the bottom-up processing, which is purely text-based, and the top-down processing, which is manifestly knowledge-oriented.

According to Samuels and Kamil (1988), there are two interactive models in the multidimensional reading process. The first one, proposed by Stanovich (1980), is called the Stanovich Model which shows that both top-down and bottom-up processes can be used together to construct the meaning included in the text insofar as they complement each other and compensate for their shortcomings and inadequacies in the performance of reading in Arabic (L1), French (L2), English (L3), or any other language. Hence, the readers' acquired background knowledge and the written text are key factors for understanding the textual message in an effective manner. The second one, the Rumelhart Model, is postulated by Rumelhart (1977) to unveil the core significance of the simultaneous use of both top-down and bottom-up processing modes for the achievement of fuller, deeper comprehension of the textual input. Further, Rumelhart (1977) came up with this model in order to explain the cognitive processes and metalinguistic awareness which aid the learners to undertake the reading act in a highly efficient, flexible mode. This type of model, whilst exhibiting the overarching importance of metalinguistics in the analysis of reading comprehension texts, be they in Arabic (L1), French (L2), or English (L3), shows *"how syntactic, semantic, lexical, and orthographic information can influence our perceptions"* (Samuels & Kamil, 1988, p.29). In fact, these two interactive models (i.e., Stanovich Model, Rumelhart Model), which operate in a starkly complementary fashion in helping learners to grasp the textual input in L1, L2, or L3 reading, reflect all the characteristic properties of the multifaceted, dynamic process of reading that aims at optimizing language learning in all its forms amongst learners.

2.3. The Metacognitive Aspects of Reading

It is axiomatic that the proactive engagement in English (L3) reading substantively necessitates metacognitive reflection and higher-order thinking for the attainment of a mature, advanced level of comprehension. The latter, as put forward in seminal research studies (e.g., Kim, 2022), is neatly intertwined with both literal and inferential understanding, which prompt the learners to delve deeply into the intentionally stated speculations, premises, and perceptions, and thus enabling a deep-level form of comprehension. Indeed, the conduct of a metacognitively-oriented type of reading

requires that the learners take ownership of the sophisticated strategic moves for basing their L3 reading act on a firm foundation. This can only be achieved if learners' reading strategy awareness and strategy use are developmentally reinforced via metacognitive strategy instruction that serves as a strong platform for the assurance of an efficiency-driven sort of L3 reading.

Given the goal-oriented nature of metacognition (e.g., Aghaie & Zhang, 2012; Flavell, 1971; Msaddek, 2013, 2016a, 2016b; Schraw & Moshman, 1995; Veenman *et al.*, 2006) and its multidimensional role in any learning endeavour within the vast arena of education, it is plausible that cognitive and metacognitive reading strategies (CMRSs) are of critical, tremendous value in the perceptual analysis and reasoned synthesis of the written discourse. Not only should the CMRSs be applied by the learners before embarking on the cognitively demanding reading process, but they should also be deployed during and after the actual performance of reading. This underscores the potential view that metacognitive thinking, conscious regulation, and strategic control can be exercised by the learners through the application of both automatic reading strategies (RSs) (i.e., predicting, inferring, main idea selection, visualizing, underlining, note taking, paraphrasing), which are purely cognitive in nature and deliberate/ intentional RSs (e.g., goal-setting, background knowledge use, self-monitoring, self-questioning, rereading, recalling, summarizing), which are metacognitive in essence.

Further, the involvement in constant progress monitoring and the immersion in self-regulated processes during the reading comprehension act formulate the cornerstones of assuring improved reading practices. In effect, the multifaceted nature of L3 reading presupposes the enactment of a strict sequence of deep-level strategic steps (i.e., planning, inferring, self-questioning, monitoring, evaluating) that fulfil the overriding objective of reading, which is manifested in optimum comprehension achievement. However, the development of these metacognitive abilities and tactics among learners can only occur if systematic, structured instruction in CMRSs is delivered effectively. For clarification purposes, the procedure of alerting the learners to the importance, typologies, and deployment of these RSs (i.e., cognitive, metacognitive) is a crucial prerequisite in any educational setting for heightening the learners' strategy awareness, and thus strengthening their reading strategy use (Msaddek, 2016a, 2025). This allows the learners to expand their metacognitive knowledge, which is embodied in declarative knowledge (i.e., awareness of one's cognitive abilities, task nature, and strategy use), procedural knowledge (i.e., awareness of how to deploy strategies), and conditional knowledge (i.e., awareness of when, where, and why to apply strategies).

In examining the global body of literature (e.g., Aghaie & Zhang, 2012; Brown, 1981; Garner, 1987; Lawrence, 2007; Msaddek, 2013, 2016; Veenman *et al.*, 2006), which puts a bright spotlight on the critical significance of metacognition in text processing, it is safely assumed that the conduct of an efficiency-bound form of reading is immensely conditioned by high-order metacognitive and critical thinking. This necessitates that the learners possess a sufficient base of metacognitive experience, which guides and informs

the multimodal process of reading in various ways (Garner, 1987; Zhang, 2002). Actually, the inquiry-oriented essence of the reading act is fluidly directed by means of CMRSs, which require from the learners to adopt a purpose-driven, empowered approach to analysing and synthesizing the encompassed content with a view to untangling the thematic perspectives and topical premises articulated by the author/ writer. In this regard, whilst the usage of cognitive reading strategies (CRSs) is typified by automaticity on a measurable scale, the deployment of metacognitive reading strategies (MRSs) (i.e., planning, monitoring, evaluating), as robust strategic steps embodying metacognition in all its characteristic dimensions and typical features, is manifestly characterized by intentionality (Msaddek, 2025). Hence, metacognitive thinking, which invariably involves the deployment of planning, monitoring, and evaluating, is core to effectual textual analysis and synthesis.

2.4. Core Typologies of Reading Strategy Instruction (RSI)

It is noteworthy to stipulate that the overall significance of reading strategy instruction (RSI) tacitly manifests itself in the development of the learners' potential ability to process and understand the advanced-level L3 written texts more efficiently and accurately. This was achieved in this experimental study through the dependence on the integrative method of implicit and explicit RSI. Thus, it can be stated that the systemic process of instructing EFL learners in the effective, fluid use of reading strategies (RSs) can be carried out by instructors, as educational practitioners in the vast educational sphere, through the adoption and application of the effective instructional methods outlined in what follows.

2.4.1. Explicit Strategy Instruction (ESI)

Explicit strategy instruction (ESI) contributes to the development of strategic, high-order reading amongst learners. According to Carnine *et al.* (2004), explicitness-based training involves three core stages (i.e., strategy introduction, strategy practice, and strategy application). These three phases make up the core of explicit reading strategy training. They are, in fact, of essential importance and higher value in that they can enable EFL learner readers to internalize the emphasized RSs. Each stage constitutes the solid foundation for the execution of the subsequent stage. This reveals the dynamic interrelatedness among the three stages of cognitive and metacognitive reading strategies instruction (CMRSI). The main rationale for the adoption of this explicitness-based training is that it can aid the learners to strengthen their knowledge pertaining to diverse strategies, initiate them into the operation of practicing the taught strategies, and help them foster the potential of applying them more independently (e.g., Brevik, 2019; Derry & Murphy 1986; Jones *et al.* 1987). This typology of instruction puts a heavy emphasis on declarative, procedural, and conditional knowledge of strategic moves.

In effect, enabling the deliberate, intentional application of strategies, ESI is deemed an effective mode of exposing the learners to the generic heuristics (i.e., cognitive,

metacognitive) in a direct fashion (Msaddek, 2016a, 2025). In that way, the target learners can be alerted to the intrinsic viability of strategy use and marked efficiency of strategy application in order to engage in the inferential act of comprehending the textual content. The provision of explicit training in a broad web of text-processing techniques/ heuristics can serve as a potential avenue to enhance the learners' strategic behaviors and elevate their reading performance while processing any given L3 reading text (i.e., narrative, expository, argumentative). Hence, ESI occupies a contributive role in assisting the learners to fluidly retain the presented strategies.

2.4.2. Implicit Strategy Instruction (ISI)

Implicit strategy instruction (ISI), the act of implicitly instilling the most optimal RSs in learners' minds, enables effective comprehension of textual input among language learners. This mode of reading-oriented instruction is defined by many leading, well-established researchers as 'embedded instruction' (O'Malley & Chamot, 1990, p.153) or 'blind training' (Cohen, 1998, p. 93). The reason why it has been labeled as embedded/ blind training is that learners can foster the taught strategies intended to facilitate and reach textual comprehension without being cognizant of their invaluable importance, their differing types, and their practical application through this kind of instruction. Clearly, an implicitness-oriented instruction aids learners in spontaneously and unintentionally deploying RSs throughout the cognitive process of L3 reading.

However, 'embedded' instruction was blatantly critiqued by many researchers (e.g., Brown, Armbruster, & Baker, 1986). These prominent, renowned scholars declare that an implicitness-bound type of strategy instruction cannot furnish the learners with an ample opportunity to internalize the strategies and put them into effect in a broad range of learning scenarios. Based on this perspective, ISI does not help the learner readers to acquire a rich metacognitive knowledge base of coping strategies. This tacitly showcases that implicitness-based strategy instruction cannot impact the learners' text-processing capabilities and text-analysis moves on a massively large scale, given its short-term effect and restricted scope in strategy retention. Hence, once exposed to this typology of strategy training, it is to be put forward that the learners' potentiality in deriving the core meaning from any assigned advanced-level, high-order reading passages will not be typified by measurable efficacy and utmost efficiency. Granted this state of affairs, a systemic combination of implicit and explicit instruction of learning heuristics and RSs, being advocated by many researchers (e.g., Mehrpour *et al.*, 2022), can serve as the bedrock for the furtherance of self-direction and self-control, as well as the nurturing of self-regulation among learners in order to upgrade their reading performance in L3 within the sphere of academia.

2.5. Prior Research Studies on Reading Strategy Instruction (RSI)

It is plausible that a myriad of research studies relevant to reading strategy training have been conducted by many leading researchers and prominent scholars within the larger

academic arena. In most of these seminal studies, it is tacitly shown that instruction in reading strategies (RSs) constitutes an integral part of improved reading comprehension among the targeted learners. Actually, a vast plethora of experimentally-oriented research studies, falling within the broad landscape of metacognitive reading strategy instruction (MRSI), have proven that learners can effectively immerse themselves in the cognitive navigation of the EFL textual input upon the reception of and exposure to the systematic reading strategy training.

To start with, Aghaie and Zhang (2012) conducted a four-month-long quasi-experimental study. The core rationale behind the undertaking of this study was to investigate the impact of explicit instruction in cognitive and metacognitive reading strategies on their reading comprehension achievement and strategy transferability. The study, whilst underscoring explicit modeling and explanation as core components of any adopted reading strategy instruction, nurtured the quasi-experimental design by targeting one control and one experimental group. The results indicate that the treatment group that received an explicitness-oriented instruction in cognitive and metacognitive reading heuristics outperformed their counterparts in the control condition in both reading gains and strategy transferability at the post-testing stage. Further, the reached outcomes substantiate the notion that the learners, being exposed to explicit strategy training, did reflect improved reading behaviors and dynamic reading strategy transfer across a multiplicity of written texts.

Another noteworthy quasi-experimental study was carried out by Tiruneh (2014). It specifically addressed 8th graders by implementing the REAP strategy. The prime rationale behind conducting this study was to instruct the subjects in REAP (read, encode, annotate, and put into your own words) with a view to enabling them to generate and effective sense of the text and construct an effective understanding. The targeted subjects were randomly assigned to a treatment group (N=33) and a control group (N=32) and were exposed to a pre- and post-test. Whilst the control group received the regular reading comprehension instruction through the delivery of ten (10) lessons, the treatment group was initiated into the explicit instruction of reading through the REAP strategy. The results showcased that the subjects in the treatment group significantly outperformed their counterparts in the control condition.

Iwai (2016) undertook an experimental study in which 116 teacher candidates/ pre-service teachers, 20 males and 96 females, were comprehensively instructed in metacognitive reading strategies (MRSs). They were pursuing an extensive teacher education program for developing utter readiness for the teaching profession. The study drew upon the Metacognitive Awareness of Reading Strategies Inventory (MARSI) as the potential indicator of the targeted subjects' mastery of the MRSs under focus. The explicit goal was to examine the marked impact of explicit instruction in MRSs on the subjects' overall awareness and actual application of the target heuristics. After receiving explicit metacognitive strategy intervention for a semester-long period, the pre-service teachers reflected substantial, increased reading strategy awareness that aided in processing,

analyzing, and synthesizing the textual input. These features that heightened consciousness of MRSs among the target subjects can emanate from exposure to metacognitive reading strategies instruction (MRSI).

Ajideh *et al.* (2018) conducted a quasi-experimental study addressing Iranian ESP university students. The participants were undergraduate students studying Islamic Arts and Architecture Engineering at Tabriz Islamic Art University. They were randomly divided into two experimental groups and two control groups. The number of the control and experimental groups majoring in Arts was 28, whereas the number of the control and experimental groups studying Architecture was 26 students. The participants in the experimental condition were exposed to explicit instruction in MRSs by means of the Cognitive Academic Language Learning Approach (CALLA) for strategy instruction. The attained outcomes exhibit that metacognitive reading strategy instruction (MRSI) did assist the treatment group to outperform the controls at the level of ESP reading comprehension scores.

Mehrpour *et al.* (2022) carried out a quasi-experiment by scrutinizing the perceived effect of explicit and implicit reading strategies instruction on Iranian EFL learners' reading achievement. The primary impetus for this quasi-experiment was to substantiate whether explicit or implicit training in reading strategies (RSs) could lead to improved reading gains among the target subjects (N=117). In effect, while the reached outcomes revealed the positive effect of both modes of strategy instruction (i.e., implicit, explicit), it was proven that the key viability of explicit rather than implicit reading strategy instruction in elevating the EFL learners' reading performance is to be underscored and given utmost importance in the area of reading comprehension instruction.

Üstündağ-Algın (2025) undertook an explicitness-oriented instruction in reading comprehension strategies through the usage of EFL short stories. The quasi-experiment involved an experimental group (N=24) and a comparison group (N=26) with the purpose of pinpointing the marked discrepancies between the two groups at the level of reading performance, both at the pre-intervention and the post-intervention phases. Lasting for a 16-week period, the training focused on the use of short stories in an attempt to enable the target learners to internalize the optimal reading strategies (RSs) (asking questions, visualizing, making connections, and summarizing) throughout the training period. The findings revealed that, whilst the comparison group's reading comprehension outcomes did not advance at a significant level, the experiment group's mean scores substantially increased across the pre-post-test continuum.

These intervention-driven studies, among others, conducted within the wide scope of reading strategy instruction (RSI), exhibit the core viability of exposing the learners to differing strategies that aid in both the conceptual construction of textual comprehension and improved reading achievement. Thus, building on the thematic orientation of these experimental studies, the current research study resolutely intends to combine both implicit and explicit instruction of CMRSs in an effort to reinforce the learners' metacognitive knowledge base and upgrade their reading comprehension

performance. Only by integrating these two modes of RSI (i.e., implicit, explicit), which play a complementary role in inculcating the taught strategies in the learners' minds, is it likely that the target learners' reading comprehension gains will be incrementally elevated. This is what the present study tends to substantiate with a view to either underscoring the key efficacy of integrated implicit and explicit instruction of CMRSs or negating its substantive importance in the dynamic sphere of L3 reading comprehension at the high-school level.

3. The Current Study

3.1. Participants

A total of 76 high school-level students took part in this quasi-experimental study. The targeted participants belonging to the two groups (i.e., control, treatment) were undertaking their studies at the second-year baccalaureate level during the academic year: 2017-2018 at a Moroccan public high school in Salé. The control group included 39 students, whereas the treatment group consisted of 37 learners. Their ages ranged between 17 and 18 years-old.

3.2. Research Questions

Taking account of the main objective underpinning this quasi-experimental study, which is incarnated in measuring the impact of implicit and explicit (meta) cognitive reading strategy instruction on Moroccan high school learners' L3 reading comprehension outcomes, two overriding research questions were formulated:

1) To what extent do implicit/ embedded and explicit/direct cognitive and metacognitive reading strategies instruction (IECMRSI) impact the high school-level learners' reading comprehension scores?
2) Do implicit/ embedded and explicit/ direct instruction in cognitive and metacognitive reading strategies (CMRSs) supplement the reading-based teaching methods adopted in Moroccan high schools?

3.3. Procedure

The present study, based on a quasi-experimental research design, adopts a mixed approach combining both the qualitative and the quantitative methods. In effect, granted that the study is exploratory, causal, and experimental in a myriad of dimensions, it draws upon this kind of approach to ensure the attainment of consistent findings. Recourse to the mixed approach, as a form of 'triangulation', constitutes a baseline for strongly confirming the reached findings. As claimed by Yeasmin and Rahman (2012), *"triangulation increases the depth and understanding of the phenomenon under investigation"* (p.158). In this perspective, expository reading comprehension tests (i.e., pre-test, post-test), which were coupled with both implicit and explicit instructional intervention and a range of expository texts, tended to serve this purpose throughout this quasi-

experimental study. Indeed, the reading strategy training undertaken occupied a complementary part in the process of either validating or disconfirming the potential importance of implicit/ embedded and explicit/ direct instruction in cognitive and metacognitive reading 'heuristics' in EFL high school settings.

Most importantly, the systemic instruction in the (meta) cognitive RSs (i.e., goal-setting, predicting, background knowledge use, inferring, main idea selection, visualizing, underlining, note taking, paraphrasing, self-monitoring, self-questioning, rereading, recalling, summarizing) was provided to the experimental group in both an implicit and explicit manner. Actually, an additional two-hour session per week was dedicated to this treatment apart from the regular sessions attended by the targeted learners. In fact, in the course of this reading strategy intervention, CMRSs were explicitly explained and implicitly practiced with a view to strengthening the EFL treatment learners' (meta) cognitive knowledge of RSs and assuring their full grasp of the strategic moves involved in the assimilation of any written discourse. This was practically effected in a gradual manner by almost the whole group as the instructor, once assisting the participant learners to utilize the RSs, gave them the opportunity to 'strategize' their reading of the written discourse on their own.

Two L3 expository reading comprehension tests (i.e., pre-test, post-test) were assigned to the EFL subjects (Control Group & Treatment Group). The expository reading pre-test was administered to both the control and experimental groups prior to embarking on the implicit and explicit cognitive and metacognitive reading strategies instruction (IECMRSI) in order to tap their reading comprehension performance level. In essence, the pre-test, in this study, indicated the extent to which the target two EFL groups were similar or different in terms of reading comprehension achievement. In a similar fashion, the expository reading post-test was delivered to both groups (control and treatment) at the end of the training sessions. Actually, the key impetus for the assignment of the reading comprehension post-test was to determine whether the process of training the target EFL learners (the treatment group) in making efficient use of (meta) cognitive reading strategies (CMRSs) can have any potential impact on their reading comprehension outcomes.

The study involves two kinds of variables. The first one, the independent variable, is related to the treatment condition to which the experimental group was subject. Succinctly put, the experimental treatment was intended to enable the learners belonging to this group to acquire and utilize the target RSs across the expository written discourse in L3. As regards the second type, the dependent variable, it is incarnated in the targeted student-readers' reading achievement scores. In many respects, the independent variable is deemed an influencing factor on the dependent variable. This particular notion is in succinct accordance with what Kothari (2004) expounded by claiming that *"the effect upon the dependent variable is attributed entirely to the independent variable(s)"* (p.34).

3.4. Strategy Intervention

It is clear that three main stages were meticulously followed in the course of this cognitive/metacognitive reading strategy intervention. This three-stage approach of explicit strategy instruction was advocated by Carnine *et al.* (2004). At the first stage, 'the strategy introduction', the experimental EFL subjects were made aware that CRSs are utilized to comprehend the meaning inherent in the text. Obviously, each strategy was explicitly explained to the subjects in an adequate manner. Following this, the instructor heightened the target learner readers' awareness of metacognitive text-related strategies and their significant role in ensuring the achievement and construction of the text meaning. Thus, the prime aim of the first stage was merely to consolidate the EFL treatment learners' cognitive and metacognitive knowledge regarding RSs and to guarantee a full grasp of the mechanisms involved in the interpretation of the written input among them.

At the second stage, 'the strategy practice', the instructor assigned the treatment group a wide variety of expository written texts by requiring the target EFL learners, in each session, to process, analyze, and synthesize the given written text. This was executed with the assistance of the instructor. Indeed, the written texts that were under scrutiny encompass many basic tasks such as wh-questions, meaning-inferring, statement paraphrasing, and summary writing. These variables required EFL student-readers to put into practice the strategies presented and expounded in the first stage. More explicitly, the instructor acted as a guide towards encouraging the targeted student-readers to make use of the focused reading 'tactics' in an effort to provide valid, consistent responses to the questions of the assigned text under critical study. In fact, almost all the strategies, cognitive and metacognitive, were employed by the treatment group participants in order to develop a complete sense of the administered written texts. This stage aims at allowing the learners to get fully acquainted with the process of strategy use during text reading (Dewitz *et al.*, 2009).

As a foundational step of the reading strategy training, the third stage, which involves 'the strategy application', requires that the experimental EFL learners independently implement the acquired RSs. This was practically effected in a gradual manner by almost the whole group as the instructor, once assisting the participant learners to utilize the RSs, gave them the opportunity to 'strategize' their reading of the written discourse on their own. It is necessary, in actuality, to note that the development of the ability to deploy the meaning-making strategies across the text input is highly premised on the extent to which the target EFL student-readers practiced the target strategies during the second stage, in which the instructor assisted them to construct a conceptual comprehension of the textual content under focus. Thus, this stage enables an independent and effective use of RSs among the target learners (Reid & Lienmann, 2006).

These three key stages of explicitness-based reading strategy training were reinforced by directing the learners toward the implicit application of CMRSs. This was performed via asking the target experimental group participants a wide series of high-

order text-based questions, prompting them to automatically and implicitly implement the intended strategies (i.e., cognitive, metacognitive). Clearly, the high school-level learners, given their limited knowledge about reading strategies (i.e., goal-setting, predicting, inferring, self-monitoring, self-questioning, main ideas selection, visualizing) and taking into account their lack of sophisticated, academic vocabulary related to L3, are not cognitively ready to apply the targeted coping strategies in an autonomous fashion. In consideration of this state of affairs, the systemic combination of implicit and explicit teaching of CMRSs, aiming at encouraging the EFL learners to construct declarative, procedural, and conditional knowledge relative to text-processing heuristics, can guarantee the enhancement of L3 reading comprehension practices and the advancement in reading test scores.

In what concerns the EFL reading comprehension texts assigned throughout the period of strategy training instruction, they are concerned with widely different subject matters and topical issues. The assignment of the expository written discourse to the experimental group learners significantly contributed to engaging them more dynamically and extensively in the act of reading. In fact, the broad range of texts that were selected by the researcher offered a certain kind of potential difficulty and challenge for the target group. This implies that EFL student-readers under the treatment condition were supposed to make use of the potent, enabling reading strategies (RSs) and depend on 'higher-order' thinking skills in an attempt to fully understand what is contained within the frame of the text. In this sense, Duke *et al.* (2011) state that:

> *"[C]hallenging texts may have other equally, if not more, important attributes, such as promoting high engagement, providing material for students' content area investigations or writing, providing inducement to apply fix-up and other coping strategies*." (p.60)

The above-postulated quotation substantively underscores the fact that exposing the SL/FL learner readers to some reading texts, which are characterized by a certain measure of difficulty in terms of content, can be more conducive to the flexible application of a wide repertoire of RSs that facilitate, to a wider extent, the conducted comprehension process. This shows that coping with difficult L3 textual content, which necessitates strategic resilience on the part of learners, depends upon the use of metacognitive thinking, critical analysis, and rational synthesis as the core components of undertaking an efficient reading act.

The collected data were analyzed by means of the Statistical Package for Social Sciences (SPSS) (Version16.0). Descriptive as well as inferential statistical analyses were performed to determine the means and standard deviations regarding the reading achievement scores attained by the control (N= 39) and treatment group (N= 37) at the pre-and post-testing phases. Further, meticulous recourse to the independent samples t-test was made with a view to revealing the mean differences and the significance level

set within the parameters of the probability value (P<.05) in both the control and experimental conditions.

4. Findings

4.1. Effect of IECMRSI on the Learners' Reading Comprehension Outcomes at Pre- & Post-testing

4.1.1. The Control and Treatment Groups' Reading Comprehension Scores at Pre-testing Phase

As indicated in Tables 1 and 2 below, the observed difference between the EFL high school learners in the control condition and the ones in the treatment condition at pre-testing is starkly typified by a great measure of non-significance since their reading comprehension scores are approximately similar. The results providing support to this stated claim are presented in the following tables.

Table 1: Descriptive Statistics on Reading Comprehension Scores on Pre-testing

	Group	N	Mean	Std. Deviation	Std. Error Mean
Reading Achievement	Control	39	5.9359	2.52404	.40417
	Treatment	37	5.2027	2.49572	.41029

Table 2: The Independent Samples t-Test for the Control and Treatment Groups' Reading Comprehension Scores at Pre-testing

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Reading Achievement	Equal variances assumed	.018	.895	1.273	74	.207	.73319	.57610	-.41471	1.88110
	Equal variances not assumed			1.273	73.869	.207	.73319	.57593	-.41440	1.88079

P<.05

The independent-samples t-test indicates that the reading test scores did not show any significant difference. Due to the lack of exposure to implicit/embedded as well as explicit/ direct cognitive and metacognitive reading strategies instruction (IECMRSI), both groups (i.e., control group, treatment group), seem to be parallel in terms of the reading comprehension scores obtained. Whereas the control group's mean score was

(M=5.9359, SD=2.52404), the treatment group's mean was (M=5.2027, SD=2.49572) with a t-test value of (1.273). Thus, it is plainly posited that their actual performance in the L3 advanced-level reading comprehension is almost equal insofar as they did not exhibit manifestly higher scores on the pre-test. This is reinforced by the set probability value (P-value), which demonstrably attests to the marked insignificance level (.895) evinced in Table 2 above.

4.1.2. The Control and Treatment Groups' Reading Comprehension Scores at Post-testing Phase

The output presented in Tables 3 and 4 indicates that the correlation between IECMRSI and the learners' reading test scores is potentially significant. Indeed, the marked mismatches between the controls and the treatment group regarding their reading scores at the post-testing stage are a clear-cut attestation to the core usefulness of the integrated implicit/ explicit instruction of cognitive and metacognitive reading comprehension heuristics. The attained results are manifested in the ensuing tables.

Table 3: Descriptive Statistics on Reading Comprehension Scores on Post-testing

	Group	N	Mean	Std. Deviation	Std. Error Mean
Reading Achievement	Control	39	6.0000	2.32832	.37283
	Treatment	37	8.7838	2.12309	.34903

Table 4: The Independent Samples t-Test for the Control and Treatment Groups' Reading Comprehension Scores at Post-testing

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Reading Achievement	Equal variances assumed	.951	.333	-5.437	74	.000	-2.78378	.51197	-3.80390	-1.76367
	Equal variances not assumed			-5.451	73,889	.000	-2.78378	.51071	-3.80142	-1.76614

P<.05

The independent-samples t-test results reveal that the EFL learners assigned to the experimental condition substantially benefited from the implicitness-oriented and explicitness-bound instruction of CMRSs. In fact, the delivered strategy instruction, as a potential form of raising the learners' shrewd awareness of a varied web of RSs (i.e., cognitive, metacognitive) proved to be a contributing factor to augmenting the treatment

group's reading test scores. Though the control group's mean score slightly increased from (M=5.9359) to (M=6.0000) across the pre-post-test continuum, no statistically significant difference was observed owing to the absence of the delivery of cognitive and metacognitive reading strategy training. By contrast, the treatment group, being instructed in a wide host of CMRSs in an explicit and implicit fashion, achieved tangible progress by attaining a mean score of (8.7838) at post-testing.

Clearly, the substantive, incremental move from (M=5.2027) to (M=8.7838) at the mean score level from the pre- to the post-testing stage amongst the treatment group is a plausible reflection of the great, promising potential held by the integrated IECMRSI in the developmental enhancement of the learners' reading comprehension achievement in English (L3). The dramatic variation in the attained means between the controls and the treatment group at post-testing exhibits the profound impact of IECMRSI on the learners' reading comprehension outcomes. This state of affairs features the statistical significance level (.000) attesting to the key viability of IECMRSI adopted in this instructional intervention. Hence, the conducted reading-based strategy training did lead to a substantially improved level of performance in L3 reading comprehension among the treatment group.

5. Discussion

The present study, contextualized within the boundaries of metacognitive theory in all its intricate facets, tended to measure the conceived impact of the combined implicit and explicit (meta) cognitive reading strategy training on Moroccan EFL high school learners' reading comprehension achievement in L3. It showcased that the learners' acquisition of metacognitive knowledge of RSs, which culminates in increased reading achievement gains, correlates with the delivery of both implicitness-oriented and explicitness-bound reading strategy-based instruction in an EFL high school context. The findings corroborate the view that high school-level learners reflected improved reading outcomes following the exposure to implicit/ embedded and explicit/direct cognitive and metacognitive reading strategies instruction (IECMRSI).

Considering that the cognitive process of reading entails high-level interactive processing involving top-down (e.g., Nuttall, 1996) and bottom-up (e.g., Grabe & Stoller, 2001) processes as well as metalinguistic skills (Guo *et al*., 2011), it is critical to reinforce the high school learners' meta-awareness of CMRSs through implicit and explicit instruction. Actually, the targeted strategies (i.e., cognitive, metacognitive), premised on metacognition in strikingly myriad dimensions, are to be deployed by the learners throughout the procedure of L3 textual processing insofar as the reading process requires constant, sustained interaction between the reader and the text. The learners, by engaging themselves in the activity of synthesizing L3 written texts, are meant to combine the textual information with their background knowledge (i.e., content, cultural, and formal schemata) to facilitate the comprehension act. This proves that an efficient, self-regulated

form of reading in L3 can be achieved not only by means of the top-down, bottom-up, and interactive processes, but also through the resilient application of (meta) cognitive strategic moves (i.e., goal-setting, inferring, main idea selection, paraphrasing, self-monitoring, self-questioning, rereading, recalling, summarizing) which are integrally necessary for the critical analysis and the sophisticated interpretation of a given L3 textual content.

The stated findings reveal that there exists a positive, dynamic correlation between implicit/ explicit (meta) cognitive reading strategy instruction (IECMRSI) and Moroccan EFL high school learners' reading comprehension test scores in L3. Indeed, upon constant exposure to the methodical application of high-order, meta-level RSs (i.e., cognitive, metacognitive) through asking questions about the core input of the targeted L3 texts used in the instructional intervention for a three-month period, the learners fostered the focused strategies, and thus deployed them in their subsequent L3 reading practices. This was substantively supplemented with other reading methods, such as the SQ3R method (Survey, Question, Read, Recite, Review), and the three-stage method (i.e., pre-reading, while-reading, post-reading) in the regular sessions with the intention of reinforcing their meta-awareness of RSs whilst processing the other reading texts included in the EFL textbook, *Ticket to English*. The reached outcomes are manifestly consistent with the ones foregrounded by prior eminent educational researchers (e.g., Dignath & Veenman, 2021; Mehrpour *et al.*, 2022; Takallou, 2011; Tiruneh, 2014; Wu *et al.*, 2021). This espouses the functional value of implicit and explicit instruction in CMRSs, which are deemed the essential prerequisites assuring the development of metacognitive reading ability and the enrichment of metacognitively-driven experience amongst Moroccan EFL high school learners.

All in all, given the higher-order competencies and deep-level proficiency required of high school learners to successfully cope with L3 textual passages, it is plain that integrated implicit and explicit (meta)cognitive reading-strategy training contributes to elevating the learners' potential to disentangle the perspectival claims embedded in L3 written discourse. In fact, the conduct of an efficacy-bound, high-level processing of the L3 textual input by engaging learners in self-questioning and responding reflects that, not only should EFL learners acquire the top-down, bottom-up, interactive processes which facilitate the act of gaining effective comprehension, but they should also nurture the underlying generic CMRSs in a principled fashion. This enables them to remedy any comprehension breakdown encountered throughout the reading process in English as a foreign language (EFL). Only via inducing the learners to implement the bottom-up, the top-down, and the interactive models, coupled with IECMRSI, is it possible that learners will evince acute metacognitive awareness of reading strategy use and increased familiarity with corrective /remedial strategies, and thus developing the sophisticated capability to understand the inherent meaning of the English (L3) reading comprehension texts.

6. Conclusion

The conducted study targeted the assumed impact of embedded and direct (meta) cognitive reading strategy instruction on the Moroccan high school learners' L3 reading comprehension scores. The intriguing insights gained from this small-scale quasi-experimental study clearly advocate for the systematic integration of implicit/embedded and explicit/direct (meta) cognitive reading heuristics instruction in the high school curriculum. This type of integrated instruction did prove of potentially intrinsic value for incrementing the learners' reading efficiency and enriching their metacognitive experience gained through the concerted application of cognitive (i.e., predicting, inferring, main idea selection, visualizing, underlining, note taking, paraphrasing) and metacognitive reading strategies (MRSs) (i.e., planning strategies, monitoring strategies, evaluating strategies). It is clear that IECMRSI contributed to improving the targeted learners' pre-processing skills, monitoring techniques, and evaluative strategic moves involved in L3 reading at the high school level.

Further, the findings plausibly manifest that the targeted EFL high-school learners, upon the reception of embedded and explicit (meta) cognitive reading strategies teaching, did succeed in constructing both a mental conceptualization of the suitable course of action that is to be taken in content processing and an effective understanding of the input incorporated in the L3 texts. In effect, the merged IECMRSI, which is characteristically viewed as an alternative form of the traditional EFL reading comprehension instruction, is of greater, more robust relevance to the advancement of the high school-level students' reading potential and the nurturing of an efficient, mature form of critical text-based analysis and synthesis. This typology of implicit and explicit reading strategy instruction can prompt the high school learners to engage in self-regulated, goal-oriented reading that is firmly based on the enactment of metacognitive thinking processes, meta-level strategies, and metalinguistic skills. It did assist the target EFL learners to convert their metacognitive knowledge (i.e., declarative, procedural, conditional) of RSs into actual practice for optimally performing the L3 reading process in a well-intentioned and principled fashion.

Thus, it is implied that the Moroccan EFL high school learners be exposed to an implicitness-oriented and explicitness-driven type of (meta) cognitive reading strategy instruction. This cannot negate the potential value of pre-teaching vocabulary items for optimizing the learners' cognitive readiness, nor can it rule out the core significance of other efficient reading methods such as the SQ3R method (Survey, Question, Read, Recite, Review), the SQ4R method (Survey, Question, Read, Recite/ or Respond, Record, Review), and the three-stage method (i.e., pre-reading, while-reading, post-reading stages) which are widely implemented by the overwhelming majority of high school teachers in Moroccan EFL classrooms. Moreover, the findings attained in light of the current study dictate that the systemic combination/ blending of implicit and explicit instruction in (meta) cognitive reading strategies (e.g., predicting, inferring, main idea selection,

visualizing, underlining, note-taking, paraphrasing, goal-setting, background knowledge use, self-monitoring, self-questioning, rereading, recalling, summarizing), coupled with other effectual methods of reading comprehension instruction (i.e., SQ3R, SQ4R, three-stage method), be espoused and adopted by the English language practitioners in Moroccan high schools across varying levels and differing geographical areas. Hence, once all these procedural steps are straightforwardly taken by foreign language (FL) teachers with a view to initiating Moroccan EFL high school-level learners into the conduct of a metacognitive, inferential mode of L3 reading comprehension, the learners will accumulate rich metacognitive experience and shrewd metacognitive reading strategy awareness, which will qualify them to be autonomous strategy users and proficient learner readers.

In spite of the utility of the research outcomes, some inevitable limitations should be cited. First, the study targeted a single high school in Salé. Thus, it is suggested that future research, falling within the purview of metacognitive reading strategy instruction, be utterly representative via addressing a myriad of Moroccan high schools in different locations across the country. Second, granted that the targeted subjects were only exposed to one pre-test and one post-test, it is recommended that prospective research depend upon the administration of two to three post-tests for robustly corroborating the findings and ensuring the perceived efficiency of the integration of implicit and explicit cognitive/metacognitive reading strategies instruction (IECMRSI) in the Moroccan high school setting. Third, in consideration of the fact that the current instructional quasi-experiment focused on a single text genre (i.e., expository) in English (L3), it is advisable that subsequent research relative to metacognitive reading strategy instruction target multiple text types (i.e., narrative, descriptive, argumentative, scientific, technical) in English (L3), Arabic (L1), French (L2), or even in other languages (i.e., Amazigh, Spanish, Portuguese, Italian, German, Russian) in order to shape a richly extended literature on textual reading and construct a robust cross-linguistic perspective vis-à-vis the multidisciplinary reading process. Last, the issue of gender was not taken into account in the present quasi-experiment. This opens up fruitful directions and promising avenues for thoroughly researching the impact of implicit and explicit cognitive /metacognitive reading strategies instruction (IECMRSI) on male and female learners' L3 reading performance with a view to unraveling the dynamically interactive interplay of gender variable and high-order, metacognitive discourse processing in English (L3).

Authenticity Statement

This manuscript is typically characterized by originality. The research design used in conducting this small-scale study is based on the one adopted in my previously defended doctoral thesis (2015), which is entitled *"Moroccan EFL Students' Learning of Cognitive and Metacognitive Reading Strategies: Rabat FLHS Semester One Students as a Case Study"* (Conducted from 2010 to 2015).

Conflict of Interest Statement

The author declares no conflicts of interest.

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