

Review Article**Critical Thinking in the Iranian EFL Context: A Systematic Review***Shaho Hoorijani¹, Hossein Heidari Tabrizi^{1*}*

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Abstract

Critical thinking has been studied within different educational and professional settings as one of the renowned learning and innovation skills of the 21st century. However, the degree to which it is operationally defined, taught, and assessed in Iran is poorly documented. This complicates efforts to develop critical thinking disposition studies and assessment tools in the Iranian EFL context. In today's EFL contexts, it is a common belief that having critical thinking dispositions among learners and synthesizing them with action learning approaches provide them opportunities for better understanding and enhancing their new knowledge, especially in argumentative writing. Therefore, most educational programs put an effort into developing such potential among EFL learners. This paper aimed to systematically review critical thinking disposition studies in the Iranian EFL context. Firstly, a number of definitions, along with the dimensions of the concept from various scholars' viewpoints, are presented. Secondly, the typical features of critical thinkers and what resources they need are introduced. Finally, the issue from both theoretical and pedagogical standpoints was reviewed to understand the use of critical thinking in the education field in the Iranian EFL context. It is hoped that this systematic review sheds light on the gap between pedagogical rhetoric and classroom practices due to the lack of CT attention implications for future research for conducting CT-integrated pedagogies in the Iranian EFL context.

Keywords: Critical Thinking, Education, Iranian EFL Context, Systematic Review.

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1. Introduction

To think is human, everyone thinks; however, not everyone thinks well, and not all educators teach students how to think well (Ennis, 2011; Pithers & Soden, 2000). Developing critical thinking in students has been proposed as the most important skill set the education system can develop in students (Thompson, 2011). Although good thinking or thinking well is commonly associated with critical thinking (Pithers & Soden, 2000), this claim falls short when there is no clear definition of critical thinking or how to develop it in students. Thus, it is asked what critical thinking is.

Recently, more and more emphasis is put on the importance of critical thinking skills in education. It is believed that these skills are of significance to the success of the learners. Unlike the previous popular trends in educational contexts, nowadays the learners are encouraged to inquire about the validity and truth of ideas, challenge and question them, strive for their own opinions, argue over different types of knowledge through reasoning and logic, and in essence seek scientific, reflective, logical, and critical thinking instead of non-scientific, intuitive, illogical thinking (Fahim & Rezanejad, 2014).

In today's EFL contexts, it is a common belief that having critical thinking dispositions among learners and synthesizing them with action learning approaches provide them opportunities for better understanding and enhancing their new knowledge, especially in argumentative writing. Therefore, most educational programs put an effort into developing such potentiality among EFL learners. Considering the critical thinking disposition and its significant role in enhancing EFL learners to "question, challenge, and insist explanations and rationalizations for what is taught" (Siegel, 1985).

While there is little disagreement about the value of critical thinking (Alsaleh, 2020), many scholars note that teaching critical thinking across the curriculum is diverse and challenging (Ennis, 2013; Willingham, 2007). According to Willingham (2007), if you are to think critically, you must have a sound knowledge base of the problem or topic of inquiry and view it from multiple perspectives. For Willingham, solving a problem at a surface level requires limited prior knowledge and will not necessarily require critical thinking. In contrast, solving a problem critically requires looking at its deep structure to understand it from different viewpoints. While it is a frequent practice in the preschool classroom to engage children in diverse ways to view the world, pedagogies to scaffold

how children see the world from different perspectives are interwoven into curricula rather than identified as an explicit learning goal.

Fostering learners' critical thinking in academic institutions is often regarded as the most important difficulty facing modern education in an era of mass information. Enhancing learners' critical thinking skills is one of the important techniques for enhancing L2 learners' writing abilities. (Dabaghi et al., 2013). Writing can undoubtedly be regarded as a thinking process that requires authors to use a variety of tactics in order to establish a certain structure for legitimate purposes, such as writing official letters, analyzing a particular circumstance, and summarizing teachings.

The primary objectives of this systematic review were: (a) Identifying what characteristics of critical thinking are currently being explored in empirical research studies within the Iranian EFL context, (b) Examining what pedagogical approaches and methods have been proven effective in drawing out emergent thinking skills in the Iranian EFL context.

2. Critical Thinking: Nature and Defining Characteristics

It was not the aim of this review to explore the complexity of critical thinking as a broad term, rather, the researchers attempted to investigate where critical thinking fits into the Iranian EFL context. However, it is important to provide an overview of the concept before exploring how critical thinking relates to the Iranian EFL context.

2.1. Overview of Critical Thinking

The term 'critical' derived from the word *kriticos* or astute evaluation and *kriterion* means norms which word history denotes the progress of exact wisdom with regarding the norms (Pithers & Soden, 2001). In Webster's World University Dictionary (Taylor, 1965), critical thinking is equivalent to careful analysis and judgment which denotes an attempt at unbiased judgment so as to determine both advantages and disadvantages.

Nowadays, it is essential for educators to be aware of the concept of critical thinking and the characteristics or qualities necessary for being a critical thinker. According to Marin and Halpern (2011), the development of critical thinking skills is often considered the most significant reason for formal education because the ability to think critically is essential for success in the contemporary world, where the rate of new knowledge creation

is rapidly accelerating. Nardi (2017, p. 91) stated that “educators, parents, and opinion leaders often bemoan the lack of critical thinking in our lives, in our media, and perhaps most seriously in our schools”. It seems that encouraging students to learn critical thinking skills has become a challenge for educators all over the world (Sadeghi et al., 2020).

The body of knowledge concerning critical thinking encompasses various fields, including philosophy, psychology, and education. (Lia, 2011). This review primarily concentrated on the field of critical thinking in education, although there may be some overlapping definitions across different disciplines. More specifically, the focus of this review is on critical thinking in the Iranian EFL context. Therein, the first part of this section regards critical thinking as a broad concept as the researchers sought to explore the literature to expose what is known about critical thinking in the Iranian EFL context.

Critical thinking in education has garnered significant interest in research and pedagogy for more than a century. Dewey (1933), an advocate for education, highlighted the importance of this skill, suggesting that fostering critical thinking abilities would enable students to become impartial and participatory individuals within a democratic society. Dewey advocates that the instruction of critical thinking should commence by encouraging students to actively and continuously contemplate the unique aspects of a problem, drawing upon the information accessible to them. Numerous researchers concur with Dewey's proposition that the initiation of critical thinking in students is rooted in their active involvement with a problem. Sternberg (1986) presented critical thinking as the cognitive processes that individuals employ to resolve problems, make informed choices, and acquire novel concepts.

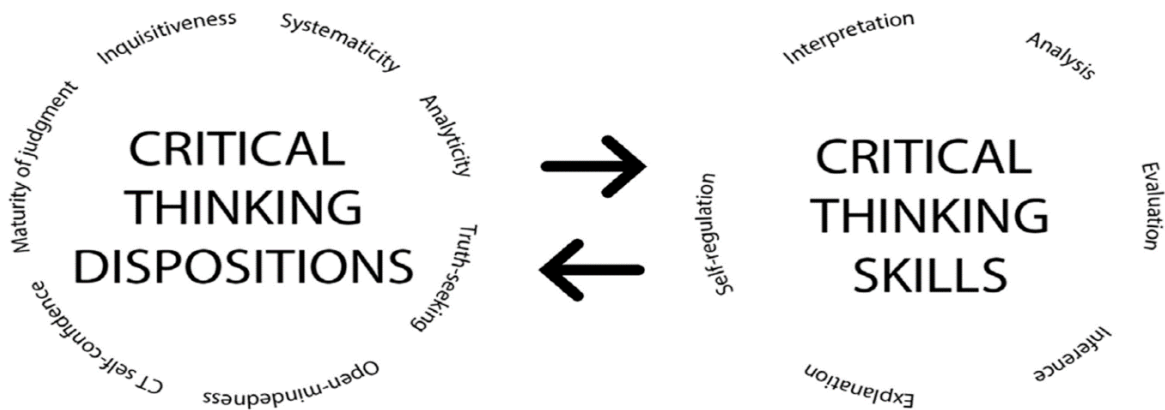
However, researchers in the field of critical thinking suggest that competencies are not sufficient, rather, both critical thinking skills and critical thinking dispositions are needed to become a critical thinker (Fisher, 2001; Kuhn, 1999). As expected, most scholars agree that critical thinking skills and dispositions are clearly related to each other. Critical thinking is the ability to interpret, evaluate, and analyze facts and information that are available, to form a judgment or decide if something is right or wrong. (Ennis, 1987; Facione, 2011). On the other hand, a critical thinking disposition is an inclination to be fair and open-minded, distinguishing truth from preconceptions or prejudices, and willingness to consider other points of view (Davies & Stevens, 2019).

2.2. Critical Thinking Disposition

When thinking skills are combined with a person's desire to behave critically, critical thinking skills and critical thinking dispositions are linked together (Facione, 1990). In view of this, educational institutions should prioritize the cultivation of critical thinking abilities alongside the implementation of effective techniques to promote a mindset conducive to thoughtful analysis. (Facione et al., 1995). Figure 1 illustrates Facione et al.'s conceptualization of CT:

Figure 1.

Some Elements of Critical Thinking Skills and Critical Thinking Dispositions (Facione et al., 1995).



The primary emphasis of this paper is on reviewing critical thinking skills rather than critical thinking dispositions. The findings will provide a concise overview of how both concepts are addressed in the studies that have been reviewed.

2.3. Critical Thinking in the ELT

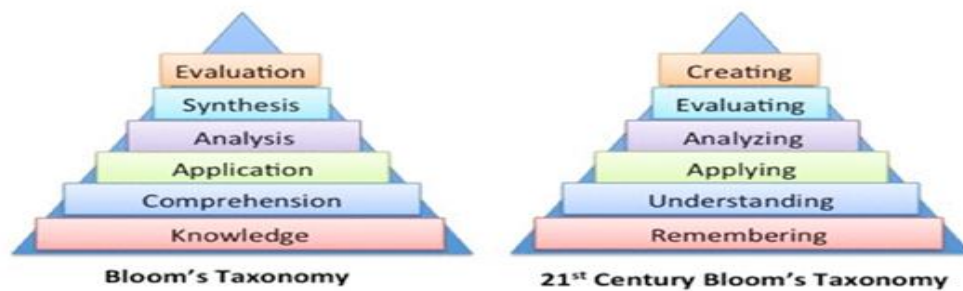
The majority of research on the formation of critical thinking or on how to enhance critical thinking abilities via the use of particular curricular materials or instructional approaches is theoretical and circumstantial (Duron et al., 2006). Coleman et al. (2012) also said that there isn't a lot of agreement on how to teach critical thinking skills in business education (Coleman et al., 2012).

Education scholars have also contributed to conversations concerning critical thinking. This category includes Benjamin Bloom and his colleagues. Their 1956 taxonomy of information processing abilities is one of the most frequently mentioned references for

educators when it comes to teaching and testing higher-order thinking skills. Bloom's taxonomy is hierarchical, beginning with 'comprehension' and ending with 'assessment'. People call the three apexes of critical thinking (analysis, synthesis, and assessment) three different types of critical thinking. (McKennedy et al., 2002). Figure 2 illustrates Bloom's Taxonomy Model and 21st Century and Bloom's Revised Taxonomy Framework:

Figure 2.

Bloom's Taxonomy Model and 21st Century and Bloom's Revised Taxonomy Framework (2001)



According to Sternberg (1986), unlike philosophical and psychological paradigms, the educational approach is founded on years of classroom practice and observation of student learning. Moreover, the frameworks that are used in education have not been tested as thoroughly as those that are used in philosophy or psychology. Others, on the other hand, pointed out that the educational method is constrained by its ambiguity. The taxonomy's concepts lack the clarity essential to direct teaching and evaluation effectively (Ennis,1985).

2.4. Characteristics of a Critical Thinker

Critical thinkers have willingness to learn much about a variety of topics and interested in learning more and be knowledgeable on searching for possibilities to apply critical thinking skills.

They have self-assurance in their own reasoning ability by considering opposing opinions and adaptability in weighing others' options and viewpoints also have a keen awareness of potential unexpected cases in order to foresee their effects and aware of others' viewpoints. They are objective in evaluating reasoning and have a sincere character when confronted with one's own assumptions, preconceptions, stereotypes, or egotistical inclinations and finally have wisdom in postponing, making, or changing

decisions readiness to review and alter positions when honest contemplation indicates that change is required.

2.5. Skills Identified as Integral to The Critical Thinking Process

One of the most important skills integrated to the critical thinking skill development is the adroitness in analyzing information, claims, or evidence (Bloom et al., 1956; Ennis, 1985; Facione, 1990; Paul, 2005), which to a high extent deals with inferring using inductive or deductive reasoning (Ennis, 1985; Facione, 1990; Willingham, 2007), that leads to reasoning strategies which are used to generate logical judgement and finally draw conclusions (Lipman, 1985; Paul et al., .2019).

An consequent and related conceptualizations Critical thinking is used in effective problem solving through the process of analyzing all available data related to the problem (McCormick et al., 2015; Sternberg, 1986; Snyder and Snyder, 2008); focused problem-solving improves thinking (Paul & Elder, 2020), therefore it could be concluded that thinking should be based on criteria (Lipman, 1985), and standards of thought (Paul & Elder, 2020, Scriven & Paul, 1987).

3. Method

Followed by the five steps to conduct systematic review-generating questions, identifying relevant works, evaluating the qualities of articles, summarizing the evidence, and reporting the findings (Khan et al., 2003), a set of exclusion and inclusion criteria were established.

According to the procedure of Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) (Page et al., 2021), a flow diagram was generated, shown in Fig. 3. Web of Science (Wos), Google Scholar, and Researchgate are the central databases used for primary search on CT studies in the Iranian EFL context, since the researcher intended to review high-quality articles.

A total of 150 peer-reviewed articles were yielded after the primary search. The first-round screening excluded the non-empirical and duplicated studies among the two main high-quality databases. Then, for the left 110 studies, a second-round screening was conducted to remove unrelated topics (e.g., studies were not focused on cultivating CT in the Iranian EFL context or relevant to other EFL areas such as other fields). In this way,

only a total of 70 articles were selected from the pool for fully reviewing. Although the sample is relatively small, the research topic of this review is only focusing on the cultivation of CT in the Iranian EFL context, and the database resources are high-quality.

The paucity of articles on this subject can be attributed to a several primary factors. Initially, notwithstanding the observable inclination toward the promotion of CT in the realm of Iranian EFL context, EFL learners have difficulties understanding the concepts of CT, especially in non-western countries due to the complexity of CT. The primary and core difficulty of teaching CT is to understand what CT means and what should be involved in a CT integrated curriculum (Lin & Xiang, 2019).

A systematic literature review was chosen since it provides researchers and publishers with access the advantages and disadvantages of a study in a well-defined approach that is easily duplicated (Liberati et al., 2009). Systematic reviews serve an effective function by summarizing a field of knowledge, highlighting what is currently known and investigating specific research gaps (Lachat et al., 2015). The literature presented in this report was first conducted by three electronic databases which were used to source data (Table 1). Which is outlined in the following table:

Table 1

Types of Literature and Databases

Type of Literature	Databases
Peer-reviewed journal articles	Google Scholar (GS) Web of Science Researchgate

As it is presented in Table 1, the researchers conducted the first step of the study by using three main electronic databases, by a search string that was developed to identify keywords in the Iranian EFL literature (Table 2).

Table 2

Search Keywords

"critical thinking" OR "thinking dispositions" OR "thinking skills" OR "thinking ability" OR "meaning-making" OR "problem-solving" OR "making sense" OR "adult's reasoning" OR "developing critical thinking" OR "reasoning" OR "Thinking classrooms" AND "Adult EFL context"

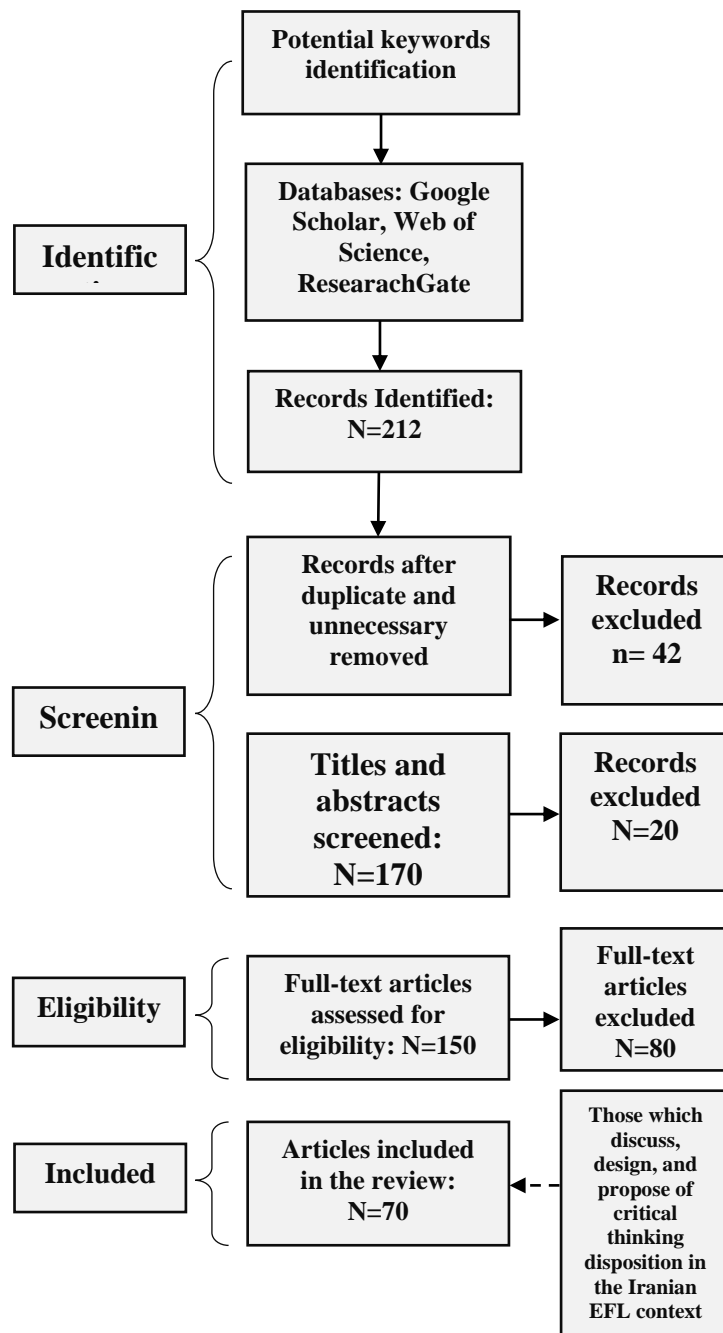
Researchers in Table 2 presented a developed search string to identify keywords. Considering the importance of the study and its related topic the most pertinent keywords that were related to critical thinking were identified and presented.

3.1. Eligibility Criteria

The present review included articles investigating features of critical thinking and instructional approaches to developing thinking skills in the Iranian EFL context. The systematic process leading up to data generation is illustrated in Fig. 3.

Figure 3.

Systematic Review Process for this Literature Review.



3.2. Inclusion/exclusion Criteria

In this review the scholarly articles reporting empirical studies which were qualified by the following criteria were considered for the final inclusion in the coding and synthesis procedure:

1. Studies published by Iranian researchers as original peer-reviewed articles in local and/or international journals dedicated to exploring critical thinking in the Iranian EFL context.
2. Related studies published from 2010 to 2023
3. Studies reported only in English language

And articles were excluded if they were:

1. Studies published by non-Iranian researchers and non-Iranian EFL context.
2. Related studies published before 2010.
3. Studies reported only in the Persian language

Scoping the review was conducted by developing specific inclusion criteria that would allow us to select relevant research studies (Table 3).

Table 3

Inclusion/exclusion Criteria

Criterion type	Inclusion	Exclusion
Publication	2010-2023	Before 2010
Quality assurance	Studies published in peer-reviewed journals	Not published in peer-reviewed journal
Language	English	Non-English articles
Topic	Critical thinking in the Iranian EFL context	Critical thinking in the other countries
Location	Iranian universities	Non-Iranian universities
Context	Adult EFL learners	Children EFL learners

Accordingly, of 212 articles were yielded after the primary search. The first-round screening excluded the non-empirical and duplicated studies among the three main high-quality databases. Then, for the left 150 studies, a second-round screening was conducted to remove unrelated topics. In this way, only a total of 70 articles were selected from the pool for full review. Although the sample is relatively small, the research topic of this review is only focusing on the cultivation of CT in the Iranian EFL context and the database resources are high-quality.

4. Findings

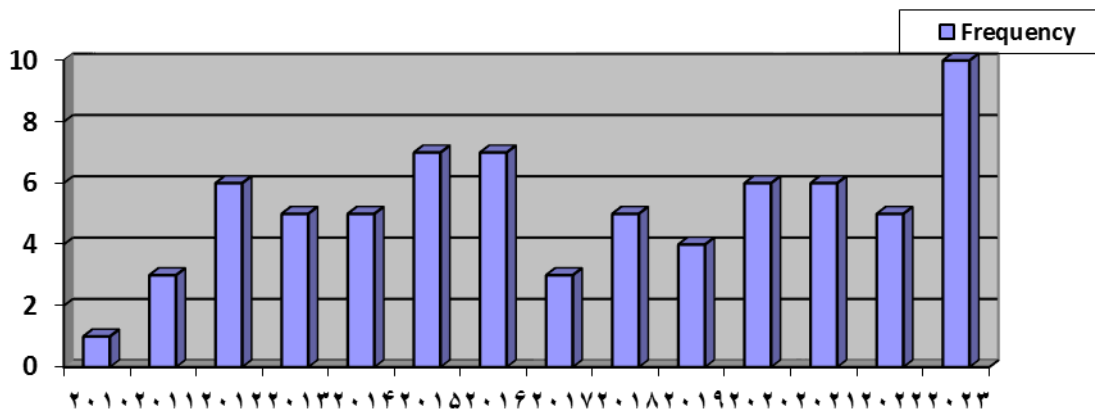
The findings of the present review study were organized and presented in this section in terms of relevant Excel files including a) publication date b) author(s) c) journal type d) CT research design and method e) the data collection instrument in 5 subdivisions.

4.1. Quantity Distribution of Articles in Terms of Publication Date

The articles in the report pool were first spread along a timeline to show their distribution regarding the published date. Figure 4 illustrates the quantity distribution of articles graphically under review within the decided span of time: that is, from 2010 to 2023:

Figure 4.

Studies from the Report Pool Filtered by Year of Publication



As shown in Figure 4, in the first decade of the third millennium, there are a variety of studies on critical thinking studies published in the Iranian EFL context (N=43); that is, 74 percent of the articles present in this report pool have been published in this period. From 2020 to 2023, it grows into one field of study with such popularity, especially in mid-2021. The publication rate has recently seen a drastic raise (N=27). In fact, from 2020 on, again, less than 26 percent of the articles have been issued in the last three years.

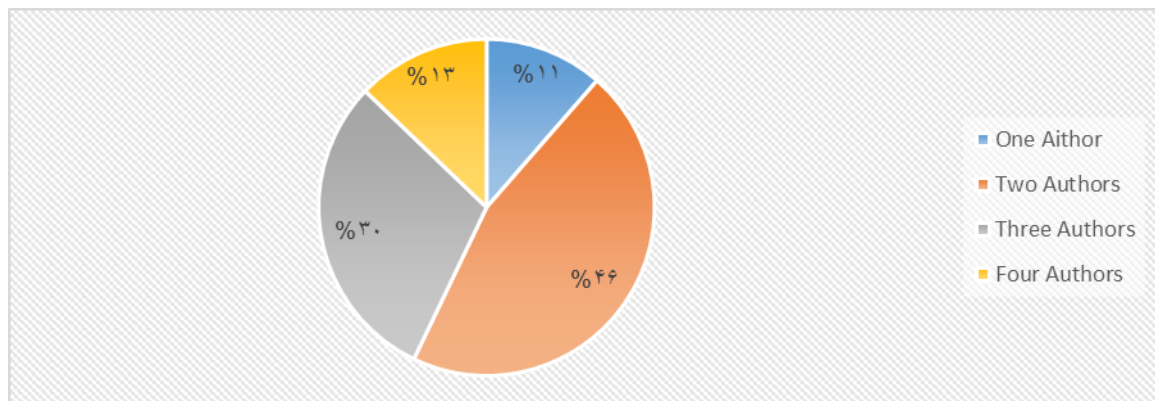
4.2. Article Distribution in Terms of Authors

The articles in the report pool were codified regarding the number of authors who produced them. It was revealed that articles with two authors were the most frequently found ones (N=32), followed by those with three authors (N=21), four authors (N=9), and solo-author articles (N=8).

Moreover, the names of 5 authors appeared in more than three articles. One had one solo article each and one which another colleague coauthored. One author coauthored two articles, each with one different author. One author coauthored three articles with the same colleague. It was found that two authors had three articles in the pool, one of whom contributed to two articles with two different authors. Another author with two articles contributed to one three-author article with the same team, while he published one solo-author article too. Finally, another author with three articles in the pool had three two-author articles together with two two-author ones with the same team. Figure 5 depicts the article pool classified in terms of their authors:

Figure 5.

Studies from the Report Pool Filtered by Number of Authors



4.3. Article Distribution in Terms of Journal Type

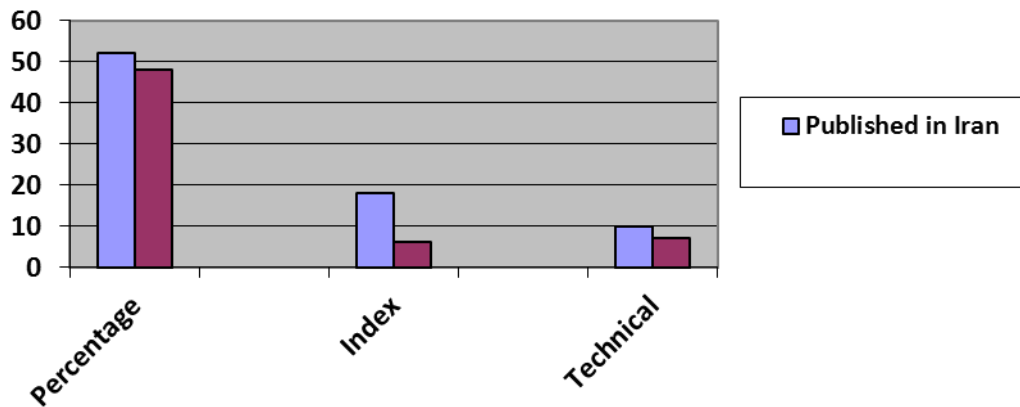
As the next step, the articles in the reporting pool were codified regarding the type, quality, and scope of the journals that published them. A total number of 70 articles under review were published in 48 scholarly journals. Twenty of these 48 journals are published in Iran, while the other 28 are published outside Iran. Moreover, six dedicated journals focused on reports of critical thinking studies, the title of which certainly had the keyword thinking and creativity in itself (two Iranian journals and four internationally-pushed ones). As for the number of articles published by each journal, the findings revealed that out of the total number of articles in the report pool, six and five articles were published in the two international journals dedicated to critical thinking research; namely, the Journal of Language Teaching and Research, and Procedia-Social and Behavioral Sciences. Two

international journals published eleven articles, and three Iranian journals published two articles each.

Regarding the quality of these journals, they were verified against locally internationally accepted indexes. As for the Iranian journals, 4 out of 16 were approved locally by the Ministry of Science, Research, and Technology (MSRT), out of which one Also indexed in Scopus. Considering the internationally published journals, eight are indexed in the Web of Science Master Journal List - WoS MTh by Clarivate (3 as ISI and three as ESCI) as well as Scopus; 11 more were only indexed in Scopus. Thus, a total of 28 accredited journals, six of which are dedicated to critical thinking, published 18 articles; the other 15 journals (including four behavioral ones) were indexed neither in WoS nor in Scopus. Figure 6 summarizes the findings in this regard:

Figure 6.

Studies from the Report Pool Filtered by Journal Type



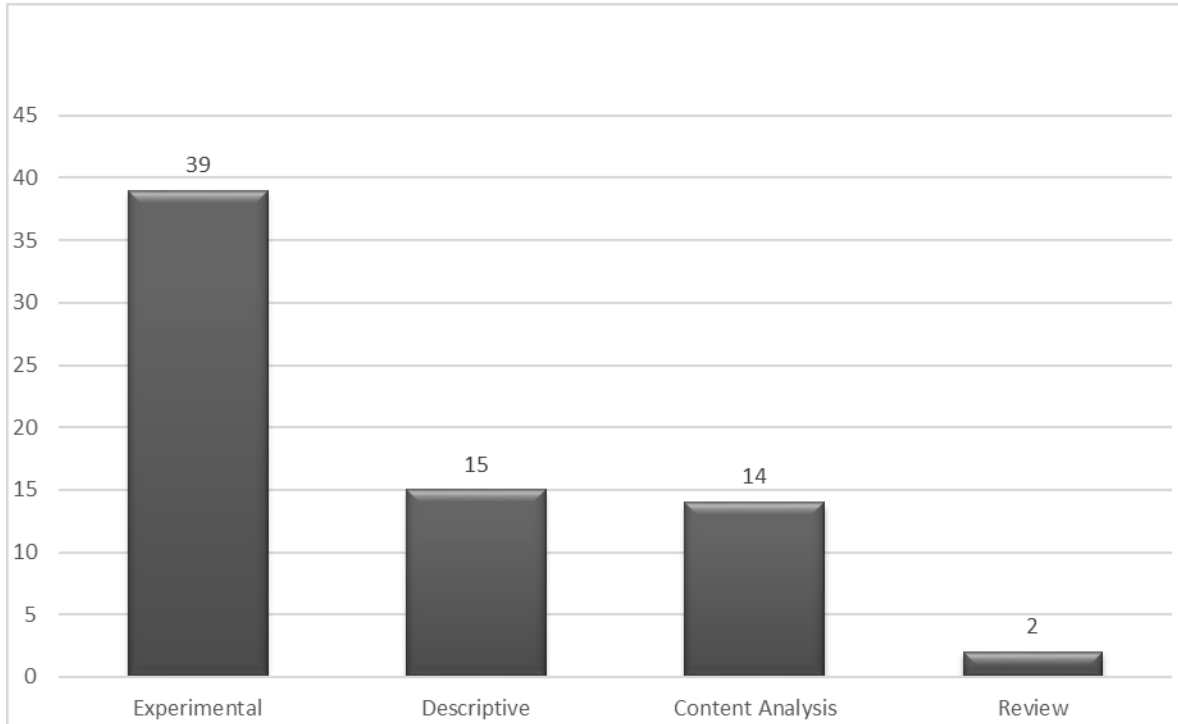
4.4. Article Distribution in Terms of the CT According to the Research Design and Method

The distribution of the studies on critical thinking skills according to research design is presented in Figure 7. When Figure 7 is examined, it is seen that nearly two-thirds, (n = 39) of the studies on critical thinking skills were conducted using the experimental research design which was all based on quantitative methods, descriptive (n=15), content analysis (n=14) and review (n=2). The literature review was the least frequently used (n = 2) research design. No study used the model development design. Figure 7 depicts the Distribution of the studies on critical thinking skills according to the research design,

regarding the research method the distribution of studies on critical thinking skills according to the research method is presented in this section.

Figure 7

Distribution of the Studies on Critical Thinking Skills According To the Research Design

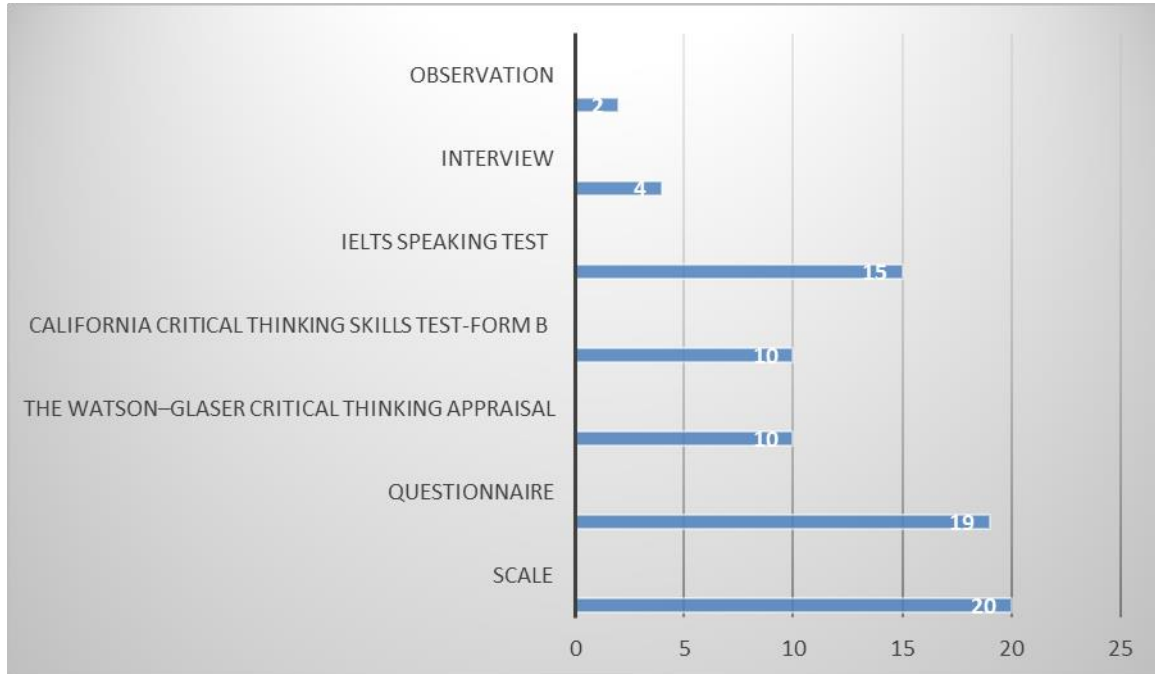


4.6. Article Distribution in Terms of the CT According to the Data Collection Instrument

The distribution of studies on critical thinking skills according to the data collection instrument is presented in Figure 10. When Figure 8 is evaluated, it can be seen that the most preferred data collection instrument is the scale (n=20), Questionnaire (n=19), the Watson–Glaser Critical Thinking Appraisal (n = 10), California Critical Thinking Skills Test-form B (CCTST) (n=10), IELTS speaking test (n=5), interview (n=4) and the least preferred one is the observation form (n = 2) among the six different data collection instruments. Figure 8 depicts the distribution of subjects on critical thinking skills according to the data collection instrument.

Figure 8

The Distribution of Subjects on Critical Thinking Skills According To the Data Collection Instrument.



5. Conclusion, Discussion, and Recommendations

This review study thoroughly investigated the most pertinent research on the conducted empirical studies on critical thinking studies in the Iranian EFL context. The review covered a comprehensive discussion of publication dates, research topics, research method and design, theoretical frameworks, and instruments employed in studying critical thinking studies in the Iranian EFL context. The findings of the present systematic review revealed some major trends in empirical research on how critical thinking has been incorporated in the Iranian EFL context. In this study, 70 articles on critical thinking skills from 48 journals, which are indexed in Google Scholar, Researchgate, and Science Direct databases were examined. The evaluation was done according to the findings obtained from thematic content analysis.

First, in terms of the distribution of publications (published during the specified time period), a lack in the initial ten years may be defended by the fact that the number of universities offering graduate programs in critical thinking was insufficient. As a result, it may be argued that this liner study was not well understood or applied by Iranian CDA researchers at the time. The increase in the number of studies released in the mid-2010s

can be linked to the fact that at the time, MA students majoring in TEFL were required to publish papers derived from their theses in order for their theses to be accepted with greater marks and certificate. The COVID-19 pandemic, which disrupted every academic endeavor, including research investigations and article publication, may be responsible for the dramatic reduction in the past three years. However, it is possible that this occurred as a result of a significant shift in protocol at such universities; beginning in 2018, students did not earn an academic score for published research derived from their theses. As a result, their intrinsic drive to publish is no longer there, leaving learners and supervisors demotivated.

Between 2010 and 2023, studies on critical thinking skills were conducted with 5 different subjects. Although the studies were carried out with different subjects, the majority of these studies seem to be about teacher efficacy on the effect of critical thinking on Iranian EFL learners. Content analysis from Saban (2008) about the Multiple Intelligence Theory revealed that the majority of studies focus on a single subject, with program practitioners primarily being educators. Therefore, it can be asserted that there is a necessity to increase the quantity of research pertaining to educators and educational programs. It is worth mentioning that there has been a lack of comprehensive research on the topic of critical thinking among Iranian EFL learners.

Publications on critical thinking skills have shown an increase over the last four years (2020-2023). This situation shows that the interest of Iranian EFL researchers in critical thinking skills is growing. When studies are assessed in terms of the gender of the researchers, it is seen that male scholars are more interested in studies related to critical thinking skills and attitude (Hoorijani & Heidari Tabrizi, 2023).

In analyzing the distribution of studies according to research design, it is seen that nearly two-thirds of the studies are conducted using experimental research design. Thus, it can be said that the possibility of experimental studies is high while studying a novel concept. However, none of the studies aimed to develop a model regarding critical thinking skills. Analysis of the distribution of studies on critical thinking according to research methods showed that nearly two-thirds of the studies are conducted on the basis of the quantitative method. This evidence is supported by the findings of the study by Memari (2021). There is a need for studies that are carried out using mixed methods, which is the least preferred method.

Evaluating the distribution of studies on critical thinking skills according to data collection instruments, it is seen that scales are the most preferred and observation is the least preferred instrument in the studies which overall used 6 different data collection instruments. It is concluded that the most preferred scale is the Watson–Glaser Critical Thinking Appraisal.

From the years 2010 to 2023, there have been a total of 70 studies on critical thinking skills based in the Iranian EFL context. Among them, there have been 42 experimental studies. Therefore, it can be said that experimental studies are large in number. This case increases the number of courses in which experimental studies were carried out. Although critical thinking skills have a place in the EFL curriculum as an essential skill, more than half of the experimental studies are at the level of undergraduate education and there have not been any studies for secondary education levels. This case shows that experimental studies regarding primary and secondary education are needed. There is also a need for studies especially writing courses because there is an absence of studies on them. Judge et al. (2009) stated that critical thinking studies could be applied to any level of education.

According to the findings, 51 papers, or nearly 74 percent of the articles under examination, were believed to be of better quality since they were published in prominent peer-reviewed journals with worldwide or regionally approved indexes. Furthermore, 19 papers are published in psychological journals, implying that they are of better quality.

As for the critical thinking topics for investigation, again, the focus of the Iranian scholars is only devoted to limited articles and genres, hence, leaving other text varieties under-researched. While there are plenty of studies on ideology-loaded, politically-sensitive expressive texts and journalistic reports, there is a lack of similar studies on informative texts such as official reports and operative ones like electoral speeches. In sum, these concerns all suggest the necessity for greater methodological diversity and innovation in future research. Scholars are highly encouraged to expand the research territory by employing less-used frameworks various text types and genres and exploring the effectiveness of critical thinking on the Iranian EFL context.

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Appendix A

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