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TEACHING FOR THE FUTURE: TOWARD THE DEVELOPMENT OF CRITICAL MIND IN LITERATURE REVIEWS' WRITING

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Dedication

To YASMINE, NESRINE and INES

Abstract

Preparing learners to able to think critically is one of the key objectives of different disciplines, and which most language teachers seek for enhancement of academic success in Higher Education. Therefore, this study aims to develop critical thinking skills among the master students as they draft their reviews. Different approaches are explored to foster critical thinkers in writing. The uses of self-assessment, and peer assessment are important components of active learning to develop critical thinking. This study adopts the quasi-experimental method to analyze the perceptions of 120 Masters and their teachers on assessment activities and their feedback given on a rubric named the Critical thinking for Literature reviews Analytical Rubric (CLAR). Both students' and teachers' perspectives on the learning methods are elicited by observations, questionnaires and semi-structured interviews. The findings analyzed using PSPP reveal that all strategies demonstrate some leads for fostering critical thinking skills. The main results display that both teachers and learners should understand the value of collaborative learning and the importance of metacognition while writing literature reviews (LR). Finally, the introduction of the CLAR rubric, and peer-assessment practices could promote critical thinking in LRs writing process. Thus, further studies are recommended to be conducted on this rubric or other rubrics to improve the usage, perceptions, and knowledge of critical thinking in writing.

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Chapter 1

General Introduction

1.1 Background of Study

Today, educational systems in all areas have demonstrated a great interest in monitoring what the learners gain from their learning experiences, both for their self-benefit and for their countries' improvement. This is mainly prevailing in the recent developed cultural, social, economic, technological and all domains that require an individual to possess more than a basic stream of knowledge, instead to acquire different skills that are transferable to real-world situations.

According to Nur Miftahul "Despite the years of primary and secondary schooling, students fail to apply the content knowledge learned at school in real-life problems" [Nur Miftahul and Zubaidah, 2017]. This issue might be due to the lack of opportunities to introduce Critical Thinking (CT) in class. A critical thinking-centered learning context should be assured to encourage students to continuously evaluate their thinking on themes of their discipline and make true adjustments. In this process, students shape their thinking to become critical thinkers.

As a matter of fact, critical thinking has been listed among the most important components of educational objectives of many countries across the

world including the USA [Pineda, 2004], China [Tung and Chang, 2009], Oman [Sandhya and Al-Mahrooqi, 2015], and Singapore [Cheong and Cheung, 2008]. The integration of critical thinking skills in formal education is better done in two strategies: The first involves standing-alone subjects where critical thinking is taught as an independent course or module. The second strategy involves integrating the skills across the other subjects or modules. In addition, Haryani in [Haryani et al., 2018] claimed that writing activities encourage students to develop metacognition and reasoning skills, and the ability to analyze and synthesize information.

The evident link between writing and critical thinking skills is better expressed by Putri saying "clear writing leads to clear thinking. Clear thinking is the basis of clear writing." [Putri, 2018], more than any other form of communication, writing holds writers responsible for their words and ultimately makes them more thoughtful human beings. Similarly, Nancy added that "writing is a cognitive process involving the shaping of thought" [Nancy and Gettig, 2019].

There are different approaches to developing CT skills, such as problem-based learning, question-based learning, collaborative learning, and e-learning [Andersson and Kroisandt, 2019]. Peer assessment has also been considered as an important technique to generate formal writing. The effectiveness, yet, lies in the different approaches adopted by teachers and whether they are likely to facilitate the development of critical thinking. A possible ways involves the development of a rubric that can be adopted during the Literature Reviews (LRs) writing activities for fostering CT is proposed in this thesis.

A rubric is "a tool that guides the production of students' work as well as a tool

for assessment by presenting expected performance criteria and levels of performance quality" [Dawson, 2017]. This study seeks to develop a rubric to assist students in developing critical thinking skills while writing LRs.

1.2 Statement of the Problem

Taught papers in the second graduate levels and post-graduate syllabuses involve LRs writing which have even emerged as a form of written evaluation of some fields. The literature review (LR) is an important sub-genre of postgraduate research proposals, dissertations and theses, and also is an effective research genre in its own right [Hart, 2018]. However, reviewing the literature can be a challenging task, particularly for EFL students. Writing a LR includes a synthesis of a complex range of analytical competencies as well as academic composition skills, in addition to an understanding of what is meant by critical argument.

Most often students are not capable of giving a nearly accurate summary of a LR nor its functions, and they cannot explain the concept of argument in the context of academic genres. In fact, this term needs to be recognized despite its complex perceptions and arguments related to the different cultural, linguistic and educational traditions. In general terms, a LR needs the ability to synthesize information from several sources, along with summarizing, paraphrasing and citation skills.

CT has not been an important concern in different Arabic countries although it is of increasing interest in Asia and Europe. Several academic conferences have been held to discuss the effectiveness of CT and its development in Asian countries, for

instance, the one held in Singapore in 1998. In which 900 school teachers and 300 presenters, including American experts in teaching thinking skills, and Robert Swartz, the Director of the National Centre for Teaching Thinking in the USA. Representatives of many countries also attended, from Australia, the UK, Canada, China, Japan and Venezuela; unfortunately, no representatives from Arab countries attended this important conference, which may indicate a lack of consciousness of CT by Arab scholars and researchers in the last decade.

Later, only limited studies on the importance of CT have been conducted in some Arabic countries mainly Saudi Arabia [Barnawi, 2011, Alwehaibi, 2012]. They recommended to be more critical in instruction to train youth and enable them to distinguish between logic and rhetoric. Moreover, a consensus among various international organizations in the higher education in Saudi Arabia highlighted that "to better the educational outcomes of students and enable them to meet the work requirements, raising the level of CT skills and knowledge of students to be with their global counter parts" [Cottrell, 2017].

My own recent experience as a student, a secondary teacher for five years, and a lecturer in an Algerian University for six years affirms that CT is still lacking among students and teachers in Algeria. I totally concur with the views of several Arabic scholars, who argued that in universities in particular, the notion of critical thinking is neglected.

Graduate and second graduate EFL students exhibit a great deal of difficulties in writing restricted rhetorical and genre knowledge, as well as limited understanding of content, sequencing and even developing different phases of a thesis, and mainly

a LR section (Pre-test Analysis). Thus the researcher wants to work through these difficulties within a supportive methodology which will increase teachers' empathy with students; process based and student-centered experiences with a link between composition theories and pedagogical practices in order to make our learners critical writers addressing the difficulty of exploring LRs.

1.3 Aim of Study

The purpose of this study is to foster critical thinking skills in Master Students while they write LRs.

1.4 Research Objectives

The objectives of this study are:

1. To determine the Master students' perceived level of critical thinking
2. To determine the extent to which the master students are critical in writing LR.
3. To identify challenges master students' encounter in reviewing literature.
4. To determine activities which effect the development of critical thinking in LRs' writing.
5. To examine the effectiveness of self and peer assessment in developing critical thinking skills.

6. To evaluate the effectiveness of the Critical Thinking for Literature Reviews Analytical Rubric (CLAR) as an assessment tool for the drafts of the literature reviews.

1.5 Research Questions

This study intends to examine the development of EFL students' critical thinking skills through a rubric and certain activities. More specifically the study sought to answer the following questions:

1. What are the Master students' perceived level of critical thinking?

2. To what extend are the master students critical in writing LR?

3. What challenges do the master students encounter in writing LRs?

4. Which activities did the (teachers / students) find effective in developing the master students critical thinking skills in writing LR?

5. To what extent do students find (self-assessment / peer-assessment) effective in developing their CT Skills?

6. What are the (teachers' / students') perceptions of using the CLAR to foster CT skills?

7. To what extent do students find the CLAR effective in developing the critical thinking skills while writing LR?

1.6 Research Methodology

A variety of tools are used for analyzing both qualitative and quantitative data to examine the effectiveness of some instruments to foster CT Skills of EFL Students while writing LRs: observations, questionnaires, semi-structured interviews, students' use of the CLAR, and writing samples as well. This study, based on a quasi-experimental method, will be carried out with the second graduate students (Master) in the English Department at Letters and languages faculty, University of Laghouat. The targeted population whom are selected based on the convenience sampling technique is consisted of 120 participants voluntarily participated in the control group students (N=60) who received conventional classroom instruction, whereas the experimental group (N=60) they received treatment (CLAR rubric), and will be assigned to a series of writing assignments, self and peer-assessment activities which will assist them to be critical and reflective, the state that will find value in critical methodology and most importantly in writing LRs.

1.7 Scope of the Study

This study sought to develop and enhance critical thinking skills in students while they write LRs. The conventional approach of teaching students to transcribe language in written form, teaching spelling and grammatical structures, is no longer the main aim of writing lessons [Keen, 2018]. Generally, students were required to produce pieces of writing in each module based on its requirements. The conventional view claims that writing functions to support and reinforce patterns of phonology, grammar

and vocabulary, is being substituted by the notion that writing in both second and foreign languages is a worthwhile activity in and of itself. Writing is an expression and communication form that assists students to communicate ideas, emotions, and many attitudes in a written mode.

It is very challenging task to plan and teach writing mainly with that great deal of paradoxical approaches to teaching writing used by teachers, product approach and process approach [Astrid et al., 2019, Nordin et al., 2017]. Writing ought to be considered as a process - a way of learning - rather than an end product - a way of informing. Thus, Hyland in [Hyland, 2019] explained that the emphasis in writing instruction focuses on the process of creating writing and it has moved from the final product to the whole process with its many stages of planning, drafting, revising, and editing. As a result, the focus on writing process empowers students by making them describe their writings at every stage of the writing process [Ellis, 2018]. Along with the teacher's and peer feedback will find new sentences and new words as they write a first draft, and revise what they have written for a second draft.

Moreover, in assessing students' writing ability, the teacher will have to decide on the grading system to be adopted: Should he/she give a single score to a composition? Or should he/she score the different qualities of a composition separately? According to Winstone [Winstone et al., 2017], there have been several marking methods that are used for testing that can reduce time of evaluation, promote learners' engagement in learning process and improve intra-rater reliability and consistency of scoring as well. However, the composition marking methods are still questionable. Among the early written composition marking techniques were scales, or groups of answers, to score

learners' products from the most elemental to the most refined. Yet, this work adopted the analytic rating scale. In assessing any piece of writing analytically, teachers have to attain reliable and valid scores, choose relevant tasks, permit sufficient writing time, put clear writing prompts, and select suitable eloquent modes [Daud et al., 2018]

Khatib and Mirzaii in [Khatib and Mirzaii, 2016] claimed that an analytic scale "relies on a rating guide that separates and weights textual components and the rater's criteria should be focused and prioritized before the scoring process begins". Teachers who use analytic scoring reckon writing as a demonstration of different single skills that when graded respectively and added together will result in a fitting assessment of a composition. This approach views writing as a complex entity made up of several traits each of which is scored individually. An analytic writing score includes a sum of the separate scores.

The analytic scoring rubric has a positive advantage for the development of critical thinking skills. The detailed descriptions of performance criteria provide gradual directions about the quality of each aspect of the writing task. For instance, criteria may involve the clarity of the thesis statement, the relevance of literature, the accuracy of citations and the coherence of data. More specifically, the instructor has to be analytical as s/he assesses the quality of a work as per each assessment criterion while the assesses have to also give a great amount of thoughts to their performance in terms of each criterion reflective of the given grades and subsequently to improve the work.

1.8 Significance of the Research

Based on what was presented in the previous literature, many instructional tools were used before this research to develop CT skills; problem-based learning, question-based learning, collaborative learning, and e-learning. Collaborative learning provide opportunities for students to work collaboratively towards attaining a learning goal. One of these prominent activities is peer-assessment; Yan in [Yan and Brown, 2017] explained that while assessing each other, "the students are expected to think, to assess themselves, to accept challenging expectations and be collaborative learners". In addition, Backer in [De Backer et al., 2017] argued that peer assessment provides the practice ground for self-assessment. Students evaluating themselves, in doing so, they develop their metacognition skills and awareness of their own thinking [Smith et al., 2017].

Assessment with all its activities represents one approach to develop CT. Another approach is introduced in this research, and which is a rubric including the key criteria and expected levels of performance for facilitating the evaluation process. The rubric was created to enhance students' critical thinking skills.

1.9 Organization of Chapters

The present thesis includes six chapters: Chapter one, the general introduction sheds light on the research aim, objectives, research questions and methodology of the study. The second Chapter presents the Literature review and explains all what is related to critical thinking. Chapter three presents the research paradigm, data collection tools and the data analysis tools. Chapter four analyzes the results regarding the qualitative

the quantitative findings. Chapter five discusses the interpretations of the main findings from the semi-structured interviews and the questionnaire. Chapter six presents the founded conclusions, some implications for this study besides recommendations for further research.

Chapter 2

Literature Review

Contents

2.1 Introduction

Critical thinking is a common goal of different disciplines and the objective that most language teachers seek; it is an intellectual process which is, like many contents, pro-

gressive through time and experiences. Students nowadays need to be challenged in different strategies in order to make easier the development of their learning. Thus, teachers should integrate instructional tools and techniques that can efficiently promote students learning and critical thinking. On one hand, developing critical thinking skills is one of the major processes that students need more specifically when learning and using a language. On the other hand, a good literature review reflects the analytic abilities of the writer and it often presents different interpretations of data or conclusions which they are drawn from evidence. The researchers at whatever level of their experiences needed to write literature reviews in their academic research. They write their reviews for readers and provide them with a clarified picture about the structure of the work. In this process the researchers show their abilities to reformulate and evaluate what the previous works have brought, they draw the conclusions and outcomes from all the relevant references that they found. Through this process the researchers use some strategies and techniques to write reviews in the easiest way. This opens an opportunity for their readers to expect what the researchers are going to do in their whole research work. This chapter is devoted to highlight the main concepts and approaches related to critical thinking and its importance, features and types. Moreover, this chapter will clarify how the critical thinking skills can be developed through the writing process, and more particularly, through writing literature reviews.

2.2 Approaches to Critical Thinking

Learning is the continuous process of obtaining knowledge and skills. Language is the medium for learning and thinking. Further, language learning requires not only the language system (structure/grammar) but it requires a creative use of language system in real communicative situation. Thus, the implementation of critical thinking as a language pedagogy in the field of English as Foreign Language has started recently and it consequently requires further investigation. Moreover, some findings from research into English Foreign Language (EFL) contexts reveal that this pedagogy has been effective in improving learner's skills. This section presents a broad and general overview of the common terminology used in the discussion of critical thinking and its basic notions. Furthermore, it examines the primitive conceptions of critical thinking established by Dewey, Glaser and Russell, and it also provides multiple definitions of critical thinking skills from multi-directional understanding angles, and then their significance in the educational contexts is highly clarified.

2.2.1 The Notions of Critical Thinking

Developing an accurate, commonly accepted definition of critical thinking is absolutely essential which research demonstrates that most institutions lack a substantive concept of critical thinking because it is foundational to the effective teaching of any subject and it must be at the heart of any professional development program. Critical thinking is that mode of thinking about any subject content, or problem in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing and reconstructing it. It entails effective communication and problem-solving abilities, as well

as a commitment to overcome our native egocentrism and socio-centrism.

2.2.1.1 Definition of Thinking

The identification of thinking with speech was assailed by the Russian psychologist Lev Semyonovich Vygotsky and by the Swiss development psychologist Jean Piaget, both of whom observed the origins of human reasoning in children's general ability to assemble nonverbal acts into effective and flexible combinations. It allows being to model the world and to deal with it according to their objectives, plans, ends and desires. Also, it involves the mental manipulation of information, as when we forms concepts, engage in problem solving, reason and make decisions. It is occurring as automatically as blood circulation in the human body and perhaps during both the wakeful hours and while we sleep too and hence the difficulty in defining it. Perhaps we should define the kinds of thoughts or thinking we are concerned with in this post. Thinking allows humans to make sense of, interpret, represent or model the world they experience, and to make predictions about that world, it is therefore helpful to an organism with needs, objectives, and desires as it makes plans or otherwise attempts to accomplish perhaps this is how sciences came to exist and could be conveyed to future generations. Yet, thoughts can refer to the ideas or arrangements of ideas that results from thinking, the act of producing thoughts, although thought is a fundamental human activity familiar to everyone, there is no generally accepted agreement as to what thoughts are or how they are created, thoughts are the result or product of spontaneous acts of thinking.

2.2.1.2 Early Conceptions of Critical Thinking

Throughout the evolution of critical thinking, there has been much inconsistency in the conceptual definition of critical thinking which its reference can be found in the early 1900s, when Dewey [Dewey, 1997] wrote about thinking; he stated that "the essence of critical thinking is suspended judgment" He suggested that deduction and induction are the primary components of critical thinking, induction is used to move from detailed facts to general principles while deduction is used to test the hypotheses developed through induction. In other words; Dewey linked critical thinking to the application of logic for analyzing information. For example, sitting in the students union and watching the number of students using cell phones, one may hypothesize that all college students have cell phones, this example is an application of inductive reasoning, to test this hypothesis, a class of students could be asked to raise their hands if they have a cell phone, testing this sample of students in an example of deduction. Thus, Dewey emphasis on critical thinking was prevention of conclusions until a problem is completely understood. However, Kiyosawa considered critical thinking as "the process of examining concrete verbal materials in the light of related objective evidence, comparing the object or statement with some norm or standard and concluding or acting upon the judgment made" [Kiyosawa et al., 2019]. Further, The British philosopher Bertrand Russell, even dedicated what he called the 10 "commandments" of critical thinking:

1. Do not feel absolutely certain of anything.

2. Do not think it worthwhile to proceed by concealing evidence, for the evidence

is sure to come to light.

3. Never try to discourage thinking, for you are sure to succeed.

4. When you meet with opposition, even if it should be from your husband or your children, endeavor to overcome it by argument and not by authority, for a victory dependent upon authority is unreal and illusory.

5. Have no respect for the authority of others, for there are always contrary authorities to be found.

6. Do not use power to suppress opinions you think pernicious, for if you do the opinions will suppress you.

7. Do not fear to be eccentric in opinion, for every opinion now accepted was once eccentric.

8. Find more pleasure in intelligent dissent than in passive agreement, for if you value intelligence as you should, the former implies a deeper agreement than the latter.

9. Be scrupulously truthful even if the truth is inconvenient, for it is more inconvenient when you try to conceal it.

10. Do not feel envious of the happiness of those who live in a fool's paradise, for only a fool will think that it is happiness.

Critical thinking according to Bertrand Russell is "A habit of basing convictions upon evidence, and of giving to them only that degree of certainty which the evidence

warrants, would, if it became general, cure most of the ills from which this world is suffering" [Nicolaides, 2017]. Russell's ideas on education describe the needed abilities of forming opinions, finding impartial solutions, and identifying and questioning assumptions, and insist that the thinker needs do develop the appropriate habits leading the thinker to wish to learn and aim for the truth.

2.2.1.3 Metacognition as an Aspect of Critical Thinking

One of the aims of education is for students to think critically, in order to achieve this end, it is important to identify certain cognitive factors that can facilitate it, specifically developing student's critical thinking skills is facilitated through metacognition that has always been selected in literature to be a predictor of critical thinking. Metacognition is about planning, monitoring, and evaluating one's own thinking and learning, it is usually known as "thinking about thinking" Yet, Metacognition is considered a critical component of successful learning. It involves self-regulation and self-reflection of strengths, weaknesses, and the types of strategies you create. It is a necessary foundation in culturally intelligent leadership because it underlines how you think through a problem or situation and the strategies you create to address the situation or problem [Miller, 2016].

Metacognition skills consist of a series of competencies for learning and thinking, they include a number of skills required for active learning critical thinking: reflective judgment, problem solving, and decision-making. Some researchers argue that these are components of metacognition [Kitsantas et al., 2019]. There is a relationship between learners use of cognitive or metacognitive and their critical thinking ability, this

positive relation may be a replication of many previous studies concerning the effectiveness of critical thinking on the ultimate success of language learners in the challenging process of foreign language learning. Thus; in order to function effectively in society, encounter different problems, and promote independent learning, individuals must be able to think critically and reason effectively since a significant relationship was found between critical thinking and metacognition as its aspects. Further, Mastrothanais in [Mastrothanais et al., 2018] defined metacognition as knowledge and regulation of cognition. Cognition's Knowledge is further referred to as awareness and what learners know about their own cognition. Regulation of cognition refers to a set of tasks that aid students control their learning, resources, use of strategies, awareness of comprehension problems, planning, monitoring, and assessing their own thinking.

2.2.1.4 Distinguishing Critical Thinking from Creative Thinking

In an educational context, critical students should know how to make judgments, to identify thesis, reasons, assumptions and conclusion. Paul and Elder defined critical thinking as "the process by which we evaluate claims and arguments and determine which have merit and which do not" [Paul and Elder, 2019]. Criticality is about making choices Unlike Creative thinking that is about bringing novelties and new ways. Huang presented in [Huang et al., 2017] the key difference between them saying : "Creative thinking is divergent, critical thinking is convergent; whereas creative thinking tries to create something new, critical thinking seeks to assess worth or validity in something that exists; whereas creative thinking is carried on by violating accepted principles, critical thinking is carried on by applying accepted principles. Although

creative and critical thinking may very well be different sides of the same coin they are not identical". Creative and critical thinking skills are considered important for learners. Alfaro-LeFevre expressed in [Alfaro-LeFevre, 2016] the importance of both of these skills when she claimed: "When reasoning fails, Imagination saves you When Intuition fails, reason saves you". There has been a very little examining research on if they are related. Wechsler stated that: "Critical skills go hand in hand with creative ones" [Wechsler et al., 2018]. What many researchers agreed upon is that teachers should enhance the capability of students to critically and creatively think.

2.2.1.5 Critical Thinking as a Social Practice

Critical thinking presumes that each person constructs or makes sense of his or her own reality; is able to recognize the limits of his or her knowledge and to see knowledge as over changing, even shifting and unstable. Thus; the process of critical thinking involves the experience of a challenging situation or issue. Moreover; critical thinking is the systematic application of critical thinking skills to real life situations that can only be learned and defined through practice within a particular discipline. Further, drawing on critical thinking theory for social work practice implies a focus on the structural causes of individual problems promoting client rights, challenging inequality, and recognizing patterned disadvantages related to. For example, Gender, race, sexuality and class, as "social problems" are conceptualized as socially constructed rather than as fixed realities, the capacity to interrogate underlying political ideologies and discourses is essential to the critical thinking endeavor for social work. Immersing students in critical thinking requires critical talk, dialogue and engagement by both

teachers and learners; this means situating learning tasks, units or courses in a context where reflective talk and incisive discussion is encouraged. Thus, critical thinking is a combination of skills and attitudes for social work practice.

The majority of the literature on critical thinking interests on the ways in which human beings develop the capacity, through several cognitive processes and skills, to assess or interpret information. Within the standardized educational context, it is often linked to pedagogical strategies aimed towards improving and developing learners' capacity for logical enquiry and reasoning. By invoking the concept of critical thinking as a social activity, researchers examine the educational approach known as critical pedagogy and try to consider its relevance to higher educational practices. Critical pedagogy in its broadest sense is an educational philosophy that seeks to connect forms of education to wider political questions by arguing that processes or acts of learning and knowing are themselves inherently political. Aldrup presented that "Education must begin with the solution of the teacher-student contradiction, by reconciling the poles of the contradiction so that both are simultaneously teachers and students" [Aldrup and Klusman, 2018].

2.2.1.6 Critical Thinking as an Inquiry

The term inquiry refers to the accurate, critical examination of an issue in order to come to a reasonable judgment. Although the term inquiry is not well-established in the critical thinking literature, Hitchcock's notion of argumentative discussion has considerable overlap with our notion of inquiry: An argumentative discussion is a sociocultural activity of constructing, presenting, interpreting, criticizing, and revising

arguments for the purpose of There exist several aspects of inquiry that are common in the literature [Hitchcock, 2017]. The first is that inquiry requires focus on a dilemma. An inquiry is initiated by some challenge, controversy or difference of opinion that is in a need of resolution. The second aspect of significance is that inquiry involves a critical study of evidence, arguments and opinions. It is not just an information-gathering enterprise but comprises, centrally, a critical assessment according to relevant criteria. The third aspect is that inquiry aims toward a reasoned judgment which is a judgment for which one has good reasons, reasons which meet relevant standards. Making a reasoned judgment is not simply a matter of evaluating individual arguments.

An inquiry approach emphasizes both the aspects common to inquiry across a range of areas and the aspects and modes of argumentation that are specific to an area. Conducting inquiries on relevant topics can be used as a focus for and way of structuring free-standing critical thinking courses and it can also be integrated into subject area instruction. Thus critical thinking pedagogy is structured around complex, authentic tasks, reaching a shared rationally supported position on some issue [Cargas et al., 2017].

Since thinking is considered as a purposeful conscious mental activity directed towards findings solutions to problems or answers to questions, this would involve two main categories, namely: inferential thinking and reflective thinking. First of all, inferential thinking allows us to arrive at inferences on the basis of a given body of information; inferential thinking can be viewed as the process of reasoning, however, reflective thinking includes perceiving patterns, relations, similarities and differences, and it involves inventing ideas, solutions and entities, as well as the conceptualizing,

and imagining. Critical thinking involves a disposition to a rigorous process of inquiring, learning and acquiring knowledge, in terms of reasoning, evaluating, analyzing, judging and problem-solving.

2.2.1.7 Cognitive Skills of Critical Thinking

Critical thinking is not just a set of processes, but it is more than that where many of different skills and actions could be involved in like emotions which should take into consideration. However, to reach the final outcomes successfully the students of language should be more interested, at the same time they must think logically about some issues to see which level of their thinking is going to. Moreover, the students need to use the basic cognitive process such as, observing the issue, measuring it and classifying it. According to the consensus statement of the national panel of experts, the cognitive skills included as being at the very core of critical thinking such interpretation, analysis, evaluation, inference, explanation and self-regulation [Durall and Leinonen, 2017].

Interpretation: Comprehending and expressing the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria.

Analysis: Identifying the intended and actual inferential relationships among statements intended to express belief, judgment, experiences, reasons, information, or opinions. It is to give an identification of the exact relations among questions, information, opinions.

Evaluation: Assessing the credibility of statements or other representations, and to

assess the logical strength of the actual or intended inferential relationships among those statements. It is to estimate the truth of the given statements that consider as person's perception or belief.

Inference: Identifying and securing elements needed to draw reasonable conclusions. Forming conjectures and hypotheses, considering relevant information and resulting consequences.

Explanation: Justifying and explaining one's reasoning in terms of the evidential, conceptual, methodological,and criteriological.

Self-regulation: Applying the skills of analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting one's reasoning or results. It is about the one's cognitive activities where the one's ideas, opinions and results are in need to be examined and checked on the basis of self-interest. Monitoring the elements and the results of one's cognitive activities [Durall and Leinonen, 2017].

Other pioneers in the field involved in their comprehension of critical thinking skills practice and the demand for reflection both by the learner and the teacher. Cottrell in their call to The National Council for Excellence in Critical Thinking [Cottrell, 2017] brought the following as stages of critical thinking: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth and fairness. Fairness and empathy were also introduced by the leading members of The Critical Thinking Community, as features and attributes of critical thinking. Similarly, Kozulin concurred that learning the cognitive skills was not sufficient and that students must

practice using them [Kozulin and Kazaz, 2017]. According to him, to develop critical thinking, there must be full interest in improvement and practice activities to master those skills.

Taghinezhad argued that: "Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome. It is used to describe thinking that is purposeful, reasoned, and goal directed the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions, when the thinker is using skills that are thoughtful and effective for the particular context and type of thinking task" [Taghinezhad and Riasati, 2018].

In other words, this quotation defines critical thinking as the application of individuals' cognitive abilities that require deep thinking necessary for analyzing, synthesizing and evaluating the information at hand. In here, while dealing with the situations and problems around them, critical thinkers need to think open mindedly and to possess active thinking strategies. According to [Taghinezhad and Riasati, 2018], a critical thinker is able to:

- Use metacognitive skills that control performance.
- Recall appropriate knowledge when needed.
- Relate previously learned information with existing ones.
- Generate persuasive arguments on controversial topics.
- Use diagrams for communication.
- Synthesis information found in the analysis of different sources.

- Seek incredibility and make use of this information in order to formulate conclusions.

2.2.2 The Definition of Critical Thinking in this Study

Critical thinking has been researched in many scholarly fields, including education and psychology, which has provided diverse definitions [Shiraev and Levy, 2016]. Because critical thinking is an umbrella term used for a complicated array of thinking skills, it is important to clarify the term. Critical thinking is the ability to examine information by posing crucial questions, analyzing and evaluating relevant information, implementing theoretic notions, and effectively communicating with others [Yuliawati et al., 2016]. Moreover, critical thinking is defined as the art of appropriately disseminating evidence via observation, using context skills to identify a problem from presented context and add applicable theoretical arguments and techniques, in order to conclusively form a judgment. Critical thinking is also defined as the ability to work with complicated ideas, whereby a learner can effectively provide evidence to justify a reasonable judgment.

Critical thinking has been defined in different ways; very broad definitions include "thinking which has a purpose" or "reflective judgment". Moreover, to think critically is to examine ideas, evaluate them against what you already know and make decisions about their merit. A National Delphi study was conducted by Hughes in [Hughes, 2017] to provide clarity to the core constructs of critical thinking as a set of specific skills. From Facione's work, six thinking skills were identified: interpretation, clarifying meaning, analysis, examining arguments, inference, drawing conclusions, ex-

planation, presenting arguments. Therefore, critical thinking skills present an intrinsic element in our study, in writing our assignments and in working with others. According to Hughes, good critical thinkers can be described in terms of how they approach specific issues, questions, or problems [Hughes, 2017].

For Paul and Elder critical thinking is best understood as the ability of thinkers to take charge of their own thinking [Paul and Elder, 2019]. This requires that they develop sound criteria and standards for analyzing and assessing their own thinking and routinely use those criteria and standards to improve its quality.

According to them CT involves:

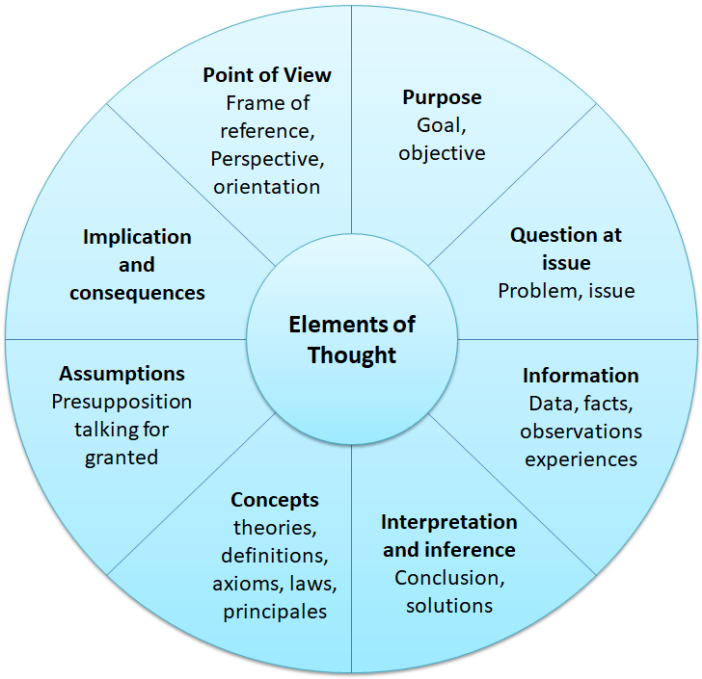

Figure 2.1 – Paul and Elder's 2019 Model of Critical Thinking Skills.

- Question: what is being asked?
- Purpose: why do I want the answer?

- Point of View: where do I stand to look at the question?
- Information: what data do I have?
- Concepts: what ideas are involved?
- Assumptions: what am I taking for granted?
- Inferences: what conclusions am I drawing?
- Consequences: what are the implications of my question?

Yet, for Hitchcock critical thinking definition involved "reflective and reasonable thinking that is focused on deciding what to believe or do" [Hitchcock, 2017]. On the other hand, Ghanizadeh (2017) defined critical thinking as the art of taking charge of our own minds. This art encompasses the mental processes, strategies, and representations we use to solve problems, make decisions, and learn new concepts. Similarly, Thomas defined it as "The art of being right" [Thomas, 2019]. Critical thinking includes the component skills of analyzing arguments, making inferences using inductive or deductive reasoning, judging or evaluating, and making decisions or solving problems. Also critical thinking was defined as "the mental processes, strategic, and representations people use to solve problems, make decisions, and learn new concepts" [Hakkinen, 2017].

The identification of critical thinking from Hyland view entails that it is a fundamental component of academic life, and it is an essential skill when writing essays or reports, taking part in seminars and debates. Critical thinking is the basis of all studies where the EFL students are left to guess what their teachers mean when they are told

to be "more critical". According to the agreement of Kitsantas [Kitsantas et al., 2019], critical thinking is the purposeful self-regulatory judgment which results in interpretation, analysis, evaluation and inference as well as explanation of the evidential conceptual, methodological, and contextual considerations upon which that judgment was based. Furthermore, critical thinking is seen as a process of achieving the higher level of thinking and reasoning abilities of the EFL learners by using some strategies in order to get the needed results. Meanwhile, Said claimed in [Said, 2018] that critical theory supplies us with remarkable collection of pedagogical tools to help students, regardless of their educational background, develop their ability to reason logically; to formulate an argument; to grasp divergent points of view; to make connections among literature, history, the society in which they live and their personal experience .From this perspective, critical theory seems to be an appropriate resource in order to guide, correct and improve the students' intellectual growth. In wide brief, critical thinking is considered as an academic skill of being able to look at ideas and problems to assess them. It also involves the ability to see links between concepts and enhance one's own ideas. On the basis of the preceding discussion, this study adopts Baxter's definition of critical thinking [Baxter Magolda, 2000], and defines critical thinking as :

1. Epistemological development, which highlights the shift from absolute knowledge to contextual knowing.

2. A capacity to work with complex ideas, which requires in-depth justification of a judgment, the ability to expand one's background knowledge and beliefs to consider alternatives and then solve problems.

3. A productive activity which involves cognitive and affective progression.

A critical thinker does not have only to think correctly; people act according to their inner energy or spirit. Hitchcock divided the affective dispositions in approaches to life and living in general and approaches to specific issues, questions or problems [Hitchcock, 2017]. These aspects led my research in the sense of promoting activities to train my learners to make decisions, to be inquisitive, to have different sources of information, to be flexible in considering alternatives and opinions, to understand others' opinions, to display honesty when recognizing their own mistakes and aspects to be improved, and to be persistent despite difficulties encountered in the parents', teacher's and peers' feedback.

2.2.3 Issues Pertinent to Critical Thinking

2.2.3.1 Teaching Critical Thinking

While thinking critically is often perceived to be the primary purpose of reading and writing, the question of whether it can actually be taught in classrooms has been extensively debated. Most would agree that one of the primary goals of schooling is to enable students to think critically. Gotoh said that "critical thinking is not a set of skills that can be deployed at any time, in any context, it is a type of thought that even three years-olds can engage in and even trained scientists can fail in" [Gotoh, 2016]. According to him it can't really be taught and people who have sought to teach critical thinking have assumed that is a skill similar to other skills, once you learn it, you can apply it to any situation.

As the educational researcher Cargas wrote about teaching critical thinking: "there is no scientific legitimacy to the claim that critical thinking ability involves ability to control for content and complexity, ability to interpret and apply, and ability to use sounds principles of thinking, if anything, scientific evidence suggests that human mental abilities are content and context bound, and highly influenced by the complexity of the problems being addressed" [Cargas et al., 2017].

Critical thinking has been an important issue in education, which is a skill that young minds will undeniably need and exercise well beyond their school years. Students will need to obtain, understand, and analyze information on a much more efficient scale. Thus, they need to think critically. In other words, when we think critically, we are evaluating the outcomes of our thought processes. Critical thinking can be taught as argument analysis. In general, students who develop critical thinking skills are more able to become less dependent on teachers and textbooks.

Due to the differences in their levels of English Language Proficiency, students were allowed to use mapping or just key words with causal links to explain their ideas or observations in the learning log. Although willing to be more critical, some people don't know which step to take next in order to improve their critical thinking skills. Still, with practice most people can develop their skills in critical thinking. Teaching critical thinking skills are based on underlying sets of thinking skills such as focusing attention so as to recognize the significance of fine details in order to recognize patterns, such as similarities and differences, absence and presence, order and sequence.

Critical thinking is learned ability that must be taught because it has a significant place in education, where its achievement should be one of the main purposes for

educators at all levels. According to Pratt, critical thinking is spotlighted in the educational settings so as to improving the power of thinking in students [Pratt, 2017]. This entails that the thinking process of the prior knowledge develops higher level of thinking skills in students, in which they will be able to relate new information to what is known in order to find answers to their questions. The discussion of teaching critical thinking sees the light in the modern education that would prepare students for a successful life. Moreover, the critical thinking subjects based on specific skills that form thinking process where educators should recognize different characteristics of its dispositions, know the conceptual and pedagogical complications of it. In other terms, the discussion gives the essence of teaching critical thinking that contains conditions enabling the rules expansion of reference by which students interact with others because it deals with "mindful" and "deep" learning. Teaching students how to think critically give them the chance to be much more engaged in the learning production of tasks that is required from them in order to present or create something new, to develop their capacity to read and write with fluency and to solve problems. Thus, instructors are urged to know the conception of critical thinking by reading research articles and taking part in seminars, workshops and conferences on critical thinking to make the classroom well prepared in having an attentive atmosphere that suits teaching and learning thinking skills. As result, facilitating critical thinking based on or focuses on teaching conditions which can help learners to improve their perspective on the contexts, and on the problems which they generate.

Further, as critical thinking can be taught the dilemma raised later is on how it can be taught? Surely through knowing and applying certain steps that need to be

explained and practiced with the students, whom they can support in enhancing their understandings of the critical thinking process at first and then the other subjects. These steps are commonly discussed in literature where Hogsette presented them as follows [Hogsette, 2019]:

1. Observe: it is about gathering a variety of information from different sources, and discovering the different perspectives.
2. Analysis: it is about identifying major themes or arguments.
3. Evaluate: it is about classifying the most significant arguments.
4. Question: it is about developing new hypotheses and opinions.
5. Contextualize: it is about considering the analysis and assessment of the specific context.
6. Reflection: it is about testing conclusions and reflecting on possible outcomes.

2.2.3.2 Critical Thinking Skills' Transfer across Domains

Increasing learners' ability to transfer critical thinking across different domains has significant implications for all facets of education and learning. Some researchers argue that critical thinking skills can be generalized across different contexts and domains, according to this argument, critical thinking skills can only be taught in the context of a specific domain. "General instruction in critical thinking skills is unlikely to be successful because critical thinking skills are inherently domain specific" [Hodges and Williams, 2019], he identified a range of assumptions regarding domain

specificity held by various theorists. Whereas, Tiruneh argued that domain-specific knowledge is necessary for critical thinking because what constitutes valid evidence, arguments, and standards tends to vary across domains [Tiruneh et al., 2017]. There are also those who maintain that critical thinking includes both general and domain-specific elements.

The transferability of critical thinking skills is debatable; the found literature on teaching critical thinking presents some disagreement on how to proceed. Some claim it should be taught in a stand-one course on criticality still others believe it should be contextualized across several courses but with an emphasis on skills rather than subject matter [Serrano et al., 2018]. Researchers insist on the cognitive skills that cut across domains, while others believe it should be integrated or found in the domain of life experiences that learners are likely to encounter in their forthcoming work [Butler et al., 2017]. Yet, others hold that it should be generalized as something that is essential to become an educated individual, while an increasing number of professional educators agree that it ought to be problem-based so that learners consider the significance of what they are learning for their designed job career [Ulger, 2018]. Actually, some problem-based learning techniques seem to have adherents in more professional training syllabi like law, business, nursing, and medicine [Zhukova, 2017].

Yet, Tiruneh [Tiruneh et al., 2017] and Elder and Paul [Paul and Elder, 2019] considered the skill of critical thinking as transferrable to any domain, content or problem, Rutherford stated that critical thinking is intertwined with input knowledge and is highly discipline specific and, hence, non-transferable [Rutherford, 2019]. Increasing the ability of learners to transfer critical thinking across domains has important im-

plications for all forms of education and self-directed learning. Nappi maintains that lifelong learning is becoming increasingly important in our rapidly-changing postmodern world "that one may acquire 'static' knowledge does not mean that one will be able to apply it and make it 'dynamic' and useful in changing times" [Nappi, 2017].

Transfer across domains is an example of dynamic rather than static. Oxman in [Oxman, 2017] argued that there are both distinctive modes of thinking in specific domains of knowledge and general rules which can apply across domains. Thus, transfer across domains can be defined in two ways: broadly and narrowly, this broad definition refers to a transfer across academic disciplines or a transfer from academic to non-academic tasks. Narrowly defined, means transfer but from one task or situation to another within a particular subject.

2.2.4 Critical Thinking and Literature

The teaching of critical thinking is much related with literature, because literature is considered as a source of meaningful knowledge. As well as, we can recognize the real role of critical thinking in making this relation more fruitful. The earliest scholars had supported the idea of including literature in language learning and teaching programs in which it can use as a source to establish critical thinking skills in learners, so that, through literature the students would get the opportunity to use certain critical thinking skills of analyzing, judging, evaluating and thinking logically. In the one hand, literature gives the helping hand to the EFL students to promote their thinking by using the literary tools such short stories, novels, plays and poems. Hence, researchers like Valero who said that literature is more than language; it is knowledge culture and

personal development [Valero Lafuente, 2018]. Through literature the real subjects and problems can be seen and appeared, and solved. It also opens a new vision where the learners achieve their abilities. On the other hand, critical thinking as we know is a sort of expectations made by individuals to express their own views towards a phenomenon, though, it is the same case in learning and teaching literature where the teachers introduce and give what is needed to make their students react whether negatively or positively in discussing any of literary works by suggesting and predicting ideas. Most of all, critical thinking is coming from multiple sources to present the information in a creative and logic manner. At the end, literature and critical thinking can make huge progress in putting the education in higher positions or levels.

Reading based on literature influences greatly the development of critical thinking. A reader is going to explore different themes within a piece of literature, find meaning to key concepts, then establish relationships between them and other literary works with entirely different themes. Literature reading is essentially linked to the basic skills of critical thinking due to the following reasons. First and foremost, the cognitive method of reading literature which needs analytical thinking strategies. While reading literature, readers require recalling, retrieving and reflecting on their prior knowledge or background to establish meanings for the text. In doing so, they have to differentiate reality from imagination; to understand the implications and the narrator's tone, to use every tiny detail related to the written concepts, to find out the relations between the events, to make moral reasoning and legal-grounded comments, and most of all, to apply what they have learned from this practice to other domains i.e. the real world activities. These processes and others are what the critical thinking experts grouped into

explanation, analysis, synthesis, argumentation, interpretation, evaluation, problem-solving, inference logical reasoning, and application skills [Zivkovil, 2016]. Ashlock had highlighted that "literature is the single academic discipline that can come closest to encompassing the full range of mental traits currently considered to comprise critical thinking" [Ashlock, 2018]. Next, the subject matter, the place, the period of time and even the used language of literature offer readers with many real-world scenarios to establish new meanings. By examining its plot, theme, and the discussion of the characters with others and the settings, readers are exposed to multiple opinions and hence compelled to think and rethink their own thoughts and interpretations. Expectantly, if they are good readers, they will see their weaknesses and they attempt to improve. Thus, it is more than helping readers to solve problems and develop critical thinking skills.

A good literary work intends to assist readers learn to change and improve through challenging a text and consequently achieve self-direction, open-mindedness, self-confidence, prudence and truth-seeking which are essential to develop critical thinking [Dwyer et al., 2017].

Further, the process of reading literary works differs from reading other document types since it assists in enhancing critical thinking skills. The method of reading literary texts differs from reading texts. Readers, while reading literature, become more self-contained and more thoughtful [Beach et al., 2016]. Campano claimed in [Campano, 2019] that the readers of literature should always try to understand "meanings beyond the text, and they tend to speculate on potential future developments. Students, then, can develop the critical which is required in their writing from reading

literature". Also, researchers have observed that in reading literature, readers learn to make an inference. The process of reading any literary text is considered as a 'bottom up' approach which requires the reader to reflect and develop critical thinking skills. It will surprisingly be possible to have more than one implication [Beach et al., 2016]. In fact, reading literary documents help students to understand and analyze the social as well as political subjects as presented in several views and visions within. Critical readers hence will discover variances of interpretation, and they will be asked to argue what the closest meaning is precisely.

When reading critically, students are likely engaged in problem-solving tasks of literary works through resolving conflicts. Oliveri claimed that "children's stories abound with noticeable conflicts for readers to sympathize with, and that authorizes them to empathize with characters encountering hard conflicts in precarious settings" [Oliveri et al., 2017].The teacher on his part would encourage the readers to imagine the real scene after analyzing the components of a literary work including the themes, symbols, motifs, and characters .Reading critically develops students' skills and enhances competencies that are required to be applied in real life contexts.

2.2.4.1 Measuring Critical Thinking

Critical Thinking is something of a challenge to measure because it includes a complex combination of skills and is interdisciplinary. In other words, critical thinking can be very difficult to measure, because it is an ongoing process rather than a recognizable outcome. As Carter in [Carter et al., 2018] explained "learning how to improve ability is not like learning or acquiring information. Truths can be improved imparted, pro-

cedures can only be inculcated, and while inoculation is a gradual process, imparting is relatively sudden".

Stupple pointed out that no single measure of critical thinking is perfect. However, one way to measure students' ability is asking them to apply the process learned in one situation to a new situation [Stupple et al., 2017]. Still, weak critical thinking skills demonstrate themselves in many forms: critical and costly errors, mistakes, incorrect decisions, failed systems, inaction when action is necessary, the giving of inappropriate advice, wrong assumptions, the poor framework of training syllabi, and the poor assessment of educational curricula and others. Weakness in critical thinking results in loss of opportunities, and even loss of relationships. There is nearly no other attribute more significant of measure than critical thinking operations.

Human reasoning and problem solving operations are increasingly complicated but not impossible to analyze measure and improve. A measure of critical thinking that can determine a person's comparative outcome in critical thinking is of high value for determining this person's ability to benefit from training or to succeed in his/her career. Individual measures of critical thinking ability (analysis, inference, evaluation, inductive reasoning and deductive reasoning) provide useful guidelines in planning employee and student improvement programs. More importantly, all educational programs and work training programs have objectively to show that they are effectively improving critical thinking skills through different tasks, methods and tests. For instance, The California Critical Thinking Skills Test a mean of measurement tools - called the Gold Standard of Critical Thinking Tests - targets accurately those main cognitive skills which are called upon as we build reflective, purposeful judgments about what to be-

lieve or what to adopt. Measuring, exercising and strengthening these skills improve decision making and problem solving strategies.

2.2.4.2 Benefits of Learning Critical Thinking Skills

Although they are not always transparent to many learners, the academic and personal benefits of critical thinking are well designed; students who can think critically tend to get better grades, are often better able to use reasoning in daily decisions and are generally more employable.

The EFL students should be aware of the importance of critical thinking as an outcome of their learning. In which, it is seen as a cognitive activity, and associated with using the mind [Cottrell, 2017]. Learners need to improve and learn to apply fruitfully critical thinking skills to their educational studies, to solve the complicated problems that they will face in their tasks. Moreover, critical thinking also would help students of literature in having a communication with the text in purposeful way, and this may heighten students 'awareness of mental processes which would assist them to observe and rethink about their own views. Thus, critical thinking and literature can raise the language's application and competency. In other words, the significance of critical thinking skill will be developed only when the students are provided with sufficient opportunities to practice these skills in literary works. In addition, Paul and Elder [Paul and Elder, 2019] said that good thinking requires the ability to generate intellectual products, which associated with creativity i.e. critical thinking and creativity are two sides of the same coin where the learners will show their abilities of thinking skill. Therefore, the relationship between critical thinking and education can motivate

the use of process oriented teaching methods. Since critical thinking is an essential part of pedagogy, the instructors are in need to provide explicit instruction in it, and they should support their learners' ability to analyze problems and make thoughtful decisions, where they get interest to critical thinking that is particularly important in the progressing of learner's mental and realistic ideas. In brief, critical thinking can be seen as a vital topic and at the heart of the modern education. Acquiring critical thinking skills will assist and benefit the EFL students, where the skill of thinking plays a huge role in maintaining and developing the designed targets, then bringing a great number of advantages in education and life as whole.

Particularly, practicing critical thinking would help the students to be more exact and specific in noting what is suitable and what is not. According to Cottrell [Cottrell, 2017] a good critical thinking skills have numerous benefits such as:

- Improving attention and observation.
- More focused reading.
- Improving the ability to identify the key points in a text.
- Improving the ability to respond to the appropriate ideas.
- Having skills of analysis that can be chosen to apply in a variety of situations.

From those advantages, each learner will have the capacity of analyzing literary works while reading and writing. Also, they will know how to evaluate their information by using questions or opinions. Thus, critical thinking skills are stable and can be applied to many fields of knowledge especially literature.

Critical thinking contains a wide range of approaches that contribute to clarify and investigate about certain discussions of the way of people actually think. Therefore, the needs that most of the EFL students should take into account are basically based on the background of knowledge in order to demonstrate their critical thinking. In other words, critical thinking can improved just with "good thinking" where thoughts are shown by both ability and disposition. Because, critical thinking is an action of making the proof more balanced that should be presented to say what is believable and what is not. Cheung in [Cheung and Jhaveri, 2016] introduces the three key features of critical thinking: effectiveness, novelty and self-direction.

Effectiveness: critical thinking obviates most difficulties like observing an issue from one side, the failure of supporting the knowledge with proofs, neglecting the new evidence which dismisses one's thoughts.

Novelty: critical thinking looks for what is new as solved problem, and not only recalling previous information or remembering a solution or a situation to be the main focus. In which, it will be applied by specific and limited systems or rules.

Self-direction: thinking skill is based mainly on the student's own decision and his notes about an issue to be more confident with his performance.

Knowing the key features of critical thinking above can help to foster intellectual independence. Yet, they can grasp the specific and the general descriptions of critical thinking as what has seen by most of researchers. Most of scholars attempt to focus more on the importance of helping students in developing and engaging them into

critical thinkers. In which, they will be involved in generating themselves with the meaning of the objects of their academic subject.

2.2.5 Bloom's Taxonomy of Critical Thinking

2.2.5.1 Conceptual Discussion of Bloom's Taxonomy

Bloom's Taxonomy is a necessary aspect in the process of teaching and learning. The integration of this taxonomy determines students' effective learning. Besides, for educational objectives, Forehand in [Forehand, 2017] stated that Bloom's Taxonomy is the hierarchical classification of the thinking process that requires the use of cognitive reasoning. More specifically, Bloom's Taxonomy involves six categories; knowledge, comprehension are the lowest levels, whereas application, analysis, synthesis and evaluation are the highest levels.

According to Ramirez [Ramirez, 2017], the students' critical thinking abilities are the result of the application of Bloom's Taxonomy categories. In this sense, teachers guide the development of students' learning through these categories as it helps them clearly design the process of teaching, describe the quality of learning, and assess students' performance. Ramirez indicated that the framework of teachers' courses should be based on the use of Bloom's Taxonomy that helps teachers assess the development of students' mental skills and, consequently they would determine the objectives of the teaching process starting from recalling knowledge to evaluating the acquired information [Ramirez, 2017].

2.2.5.2 Categories of Bloom's Taxonomy

The American educational psychologist Benjamin Bloom attempted to use thinking through leaning goals which can be originated from Bloom's Taxonomy as a way of thinking. Means it is about a system of classification. More importantly, thanks to Bloom's Taxonomy, teaching and learning become an instrument to constitute everything happens in classroom. Other psychologists said that it is a way to think about thinking and learning. Within the classroom, it is used to encourage their students' leaning assessments through revising their writings by themselves and create their own readings to increase students' achievement. However, Stayanchi reported "Bloom's Taxonomy is a way in which we as teachers can create better assessment and allow students to explore a greater depth of learning" [Staynchi, 2017]. The aim of these structures is to promote students' thoughts and levels as well, from higher order to lower-level skills organized from simple to complex, and from concrete to abstract.

Bloom shed the light on thinking using two different classifications including six cognitive ones. Firstly, lower order thinking skills focus on the lowest level through teaching objectives provided by the teacher to the learners. This level consist knowledge acquisition. Bloom confirmed that "... think of knowledge as something filed or stored in the mind. The task for individual in each knowledge test situation is to find the appropriate signals and cues in the problem which will most effectively bring out whatever knowledge is filed or stored" [Bhargav et al., 2016]. Learners show the previous information that was stacked in the memory to return and recall all the items, concepts, or names of novels' characters. This kind of memorization aims to acquire the knowledge either agreed on or disagreed, both of them presents how it is

taught and given by the teacher, "Knowledge lies in the perception of the agreement or disagreement of our ideas" [Davids and Waghid, 2017].

After memorizing the collected data, it is very necessary to interpret the knowledge in another simple words and clear language meaning. Comprehension holds the same idea of understanding the information that had given, but not the same meaning. It is the reframing of sentences in students' own styles and words. According to Tan [Tan et al., 2019], who illustrated that learners can develop a higher order of thinking through asking the teacher questions before they read a text. This is the easiest way for learners to grasp the knowledge and comprehend the meaning. Finally, application is last level in the lower order thinking skills where students use what they learned in deferent ways to illustrate and solve complex problems. Literary speaking, when the teacher gives them summary or details related to concepts and literary items, they have to apply i.e., start to use the existing knowledge and all what they have learned in a new position to result with a new way of thinking. For example, the concepts that were comprehensive from the knowledge will be applied in a novel and as the teacher stored the learners, he/she gives a chance to them in order to use their thinking.

Secondly, the higher order thinking is one of the main processes in which learners are aware of their own thinking skills. As researchers Hudson and Walker explained "The ultimate goal of literacy instruction is for students to be able to process text at the level of evaluation, synthesis, analysis, and interpretation. ...Once students have learned to read, we spend most of our time from 3rd grade on trying to help them develop their thinking skills and use them as tools to process their thoughts" [Hudson and Walker, 2017]. These skills are already existed in the learners' minds,

and the only way for them is how to adopt this knowledge that they have learnt. Therefore, learners are capable to illustrate the information and argue it.

Higher order thinking skills fragmented into three levels of Bloom's Taxonomy. Analysis is the first level of the higher order thinking skills. In this level, students are able to use their own opinion, give judgments about statements in details to analyse and facilitate them. Then, when students analyse the knowledge, it is clear that it needs another level. Synthesis is a comparison between what they learnt from different sources such as, articles and lectures and what they observed to come up with one idea which creates solution.

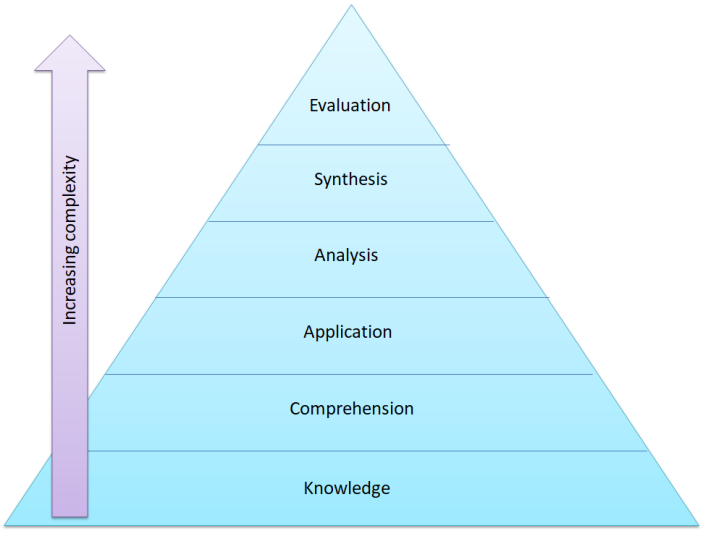

Figure 2.2 – The Six Categories of Bloom's Taxonomy.

Knowledge: Knowledge according to Wilson [Wilson, 2016] can be defined as something learned or given to the student in different forms, it is the basic category of educational objectives in which students recognize or recall the already known information and ideas. Besides, knowledge is a necessary objective for the development of learning as it is the first step in the process of thinking. The category

of knowledge is considered as an important outcome of learning that demands the intellectual abilities of students including the remembering skills. Particularly, in order to deal with any situation, students need to have some knowledge about what they are going to do. This step is the responsibility of teachers who are required to help them learn and acquire this knowledge.

Comprehension: On the light of Wilson view, comprehension is the largest skill of the category of Bloom Taxonomy; it involves the student's ability to clearly understand what is being taught inside the classroom either orally or in written form. There are three types of comprehension behavior; the first one is translation in which students can put the pattern of communication into different languages, and different forms. Whereas, the second type is interpretation in which students tend to reorder ideas, and materials into a new configuration found in students' mind [Wilson, 2016]. In other words, interpretation considered communication as a configuration of ideas. The third type as indicated by Wilson is called extrapolation; students in this sense can make predictions or inferences based on their understanding of the implications, consequences, and conditions expressed in the communication. Specifically, the author defines extrapolation as "The ability to deal with the conclusions of a work in terms of the immediate inferences made from the explicit statements". Furthermore, comprehension refers to the students' ability to understand and use the ideas, materials, and structures being communicated in order to fully understand them.

Application: Urgo in [Urgo et al., 2019] declared that application involves the abil-

ity to use the acquired information and to put them into practice in order to produce new materials different from the existing ones. Similarly to Wilson [Wilson, 2016], through application, students will be able to generate new materials based on their previous knowledge, techniques, roles, and facts that they have acquired and understood in the classroom. In other words, application involves the ability to solve different kinds of problems by generating and producing solutions in different forms. For example, in order to serve the purpose of application, teachers can ask students questions like change, modify, construct, manipulate, relate and many others.

Analysis: Wilson viewed that analysis involves dividing the patterns of the data received into its main components, and discovering the ways parts are arranged, and related to each other [Wilson, 2016]. Accordingly, he stated: Although analysis may be conducted merely as an exercise in detecting the organization and structure of a communication and may therefore become its own end, it is probably more defensible educationally to consider analysis as an aid to fuller comprehension or as a prelude to an evaluation of the material. From the above quotation, it is highly noticed that analysis is important to fully understand the information give. On the other hand, it can be the initial step of evaluating the materials.

Synthesis: Wilson in [Wilson, 2016] stated that synthesis is one category of Bloom's Taxonomy; it involves putting together multiple parts or elements in order to formulate a whole, different from previous structures. Synthesis category of the cognitive domain demands the creative thinking abilities of the students. In addi-

tion, students in the process of synthesis are required to draw upon elements from different sources, and to combine these elements to reconstruct new structures. Besides, through synthesis, students will be able to produce a unique communication involving the ability to organize ideas and thought, and to creatively write essays, stories, personal experiences, poems, or any other kinds of writings.

Evaluation: Wilson in [Wilson, 2016] addressed that evaluation is the ability to make judgments using a set of standards and criteria used to determine the value or worth of works, materials, and ideas. The criteria are either decided by the students or given to them by the teacher. Besides, the judgment can be quantitative or qualitative. Evaluation represents the last category of Bloom Taxonomy, but not necessarily the final step of the thinking process. Although it is the last category of Bloom's Taxonomy, it can be the preliminary step of acquiring new information.

2.2.6 Developing Critical Thinking Skills

EFL Students have an ethical right to be taught critical thinking skills in order to improve their own thinking and to enable them applying what they already know and feel. Most importantly, in order to change their learning habits. Teachers can fulfill this objective through using a wide variety of instruments, activities, thought experiments and online tech tools as well, that can help today's digital students to learn collaboratively and critically.

2.2.6.1 Developing Critical Thinking Skills through Writing

Many changes have occurred in the late twenty years in the field of teaching writing due to the effects of research insights from native language situations, resulting in pedagogic moves. Teaching of writing, in fact, was deeply ignored, however compulsory tested. Therefore, the focus was on what the learners produce, and not on how to do it. Brindle in [Brindle et al., 2016] insisted on the importance of how to teach writing not on what to teach. He goes further saying that there are many responses to the question of how to teach writing in EFL classes. Different answers are provided by different teachers. Prominently appeared the product and the process approaches.

As for the product, this approach is a form-based. Broadly speaking, the product method to writing focuses on the final product. A specific characteristic of this approach is its focus on correctness, as it is claimed by Hyland "the teacher who adopts a product- approach makes sure that the end product is grammatically correct" [Hyland, 2019]. Its main interest is on accuracy as well as grammar, besides that the teacher's role is to judge the end product, and even they "see errors as something that they must correct and eliminate given the importance accurate language has" [Hyland, 2019].

Furthermore, learners are provided with writing models to generate sentences, construct paragraphs out of these models. Nevertheless, Paul and Elder in [Paul and Elder, 2019] claimed that learning through imitation was considered appropriate at the sentence level meanwhile; this imitation does not accord with the recent view of learning language at the discourse level. Hence, this mismatch between the two levels that leads to understand that the final product is not produced from the

first attempt, instead it comes after a long process and several drafts.

As a matter of fact, the Product approach considers writing as mainly an individual task during exams. In this view, Paul and Elder stated that "students get very few opportunities to write, and when they do so there is still a tendency to look at texts as final products for evaluation" [Paul and Elder, 2019]. Thus, this is what makes learners believe that the objective of writing skills is only for evaluation and not communication.

Most importantly, the particularities of this method are as follow:

- Learners have some writing requirements for both institutional and personal writings.
- The grammatical items needed in different types of texts are provided in model pieces, which are constructed to demonstrate the rules that learners should use in their writing.
- Correct structure of sentences is the main emphasis of writing, besides grammar.
- Models control what learners write and serve to prevent them from making errors. Consequently, the primary interest of using models is on permitting practice in different types of texts.

In brief, the essential focus of the product approach to writing is accuracy rather than communication. As it is designated by [Allen, 2018] saying that the product approach interests on ends rather than means, in other words, on the form and structure of writing rather than on how writers construct writing which needs both form and structure. That is to say, the stages and steps of writing are totally ignored. Ac-

cordingly, a new approach to teaching writing has emerged to deal with these steps (processes) rather than the final work itself.

As a matter of fact, learning to write does not include asking learners about a particular given topic without any objective or predefining the audience. Learning to write is a process which involves a series of steps writers have to go through to arrive at the end product. More particularly, the process approach has appeared as a reaction to the product approach as Appleton said: "this approach calls for providing a positive, encouraging, and collaborative workshop environment within which students, with ample time and minimal interference, can work through their composing process" [Appleton et al., 2017].

As a result, teachers' role is to help learners to develop feasible techniques for getting started. These techniques include "Finding the topics, generating ideas and information, focusing, and planning structure and procedure" [Appleton et al., 2017]. This surely will affect the role of teachers who should become facilitators rather than assessors so as to assist learners to develop the techniques mentioned above. The processes are: drafting that is the use of many drafts, revising which includes rearranging ideas, deleting, modifying and reformulating sentences, besides editing that involves checking vocabulary, structure of sentences, grammar, and mechanics.

Actually, writing is not seen as an individual activity as it was often thought of, but a more creative and dynamic one. Cheung in [Cheung and Jang, 2019] described this approach as thinking, or discovery phenomenon that entails a set of activities: defining goals, generating ideas, organizing data, choosing suitable language, making a draft, reading and editing which are easy steps. Moreover, Sieberer-Nagler in

[Sieberer-Nagler, 2016] asserted that the process approach encourages learners to :

1. Write on relevant topics or topic they prefer rather than having the teacher who administering the topic.

2. Plan their writing having an aim in mind and a context to limit the written product rather than write freely.

3. Be more creative and thoughtful using pre-writing activities, several drafts and more revision

4. Get continuous feedback from real readers either peers, groups or the teacher through formative assessment.

5. More focus on content and self -expression rather than the end work, grammar and usage.

6. Be aware of the writing process and its related components such as planning, readers.

Therefore, the process method is usually considered as a positive strategy which permits the two teachers and students to interact more meaningfully with a predefined objective in mind while writing. In addition, it is important to make learners aware of how to start by encouraging them to think and jet down ideas. Also, the allotting time for the process is important as well.

Furthermore, another advantage of using the process method in writing is what is explained by Appleton as "writing is a non-linear, exploratory, and generative process whereby writers discover and reformulate their ideas as they attempt to approximate

meaning" [Appleton et al., 2017]. Thus, writers had better use several processes to reach the final product. Though the process method has been widely accepted, in late of 1980s it was firmly criticized. First of all, the process approach is recursive, i.e., not a linear process but a difficult task that necessitates different steps. The writer has to go through a sequence of the writing steps; he may move or go back from one to another. That's to say, a good writer ought to go backwards and forwards at any stage in writing so as to modify style, content, or even the way to address his/her readers. Also, teachers have to encourage learners to revise the steps of this method before the end paper.

Moreover, Haryati in criticizing the process approach stated "a process-oriented approach gives students a false impression of how university writing will be evaluated outside of the language classroom" [Haryati, 2018]. He explained that this method over insists the psychological context and neglects the socio-cultural factors. He added that writing several drafts will not help learners to write in-class exam essays rapidly and correctly. According to him, the inductive approach of process writing is effective to some writers only and for particular objectives; many learners are more motivated to write by external motives like grades and rewards rather than internal motives.

Additionally, critics investigate whether the process approach truly prepares learners for academic task which is the most important for them especially during exams. As a consequence, Burden in [Burden, 2016] argued that "the process approach creates a classroom situation that bears little resemblance to the situation in which students writing will eventually be exercised". He even suggested that "a process orientation ignores certain types of important academic writing tasks particularly essay exams",

i.e., the process method does not teach learners how to write examination writing tasks. Furthermore, he considered that the two conditions of the process method; content defines form and good writing is context related writing does not necessarily work all the time. Notwithstanding, it has developed considerably and provides a general review of the assessment process.

During the evaluation process, teachers often judge just the product at hand i.e., the final product. As it is argued by Sheehan "to express their ideas is important, but an exclusive focus on this could lead to writer-based texts which might actually be inappropriate or wrong" [Sheehan et al., 2018].

Table 2.1 – Stages of the Process of Writing "Different Models"

Krashen (1984)	(1) Planning (prewriting) (2) Drafting (writing) (3) Revising (redrafting) (4) Editing
White and Arndt (1991)	(1) Drafting (2) Structuring (3) Reviewing (4) Focusing (5) Evaluating (6) Generating
Richards (1992)	(1) Rehearsing (prewriting) (2) Drafting (3) Revising
Tribble (1997)	(1) Prewriting (2) Composing (Drafting) (3) Revising (4) Editing (5) Publishing
Hedge (2000)	(1) Composing (2) 2 Communicating (3) Improving
Blanchard and Root (2000)	(1) Prewriting (2) Writing (3) Revising and Editing
Harmer (2007)	(1) Planning (2) Drafting (3) Editing (4) Final draft

All in all, both methods mentioned above overlap, that is to say, we never find a

classroom where a teacher is devoted to one particular method only and exclude the others. A teacher should adopt eclecticism and derive from all the methods according to the context being taught and most importantly according to students' needs. Still, the process method is the most relevant method selected by teachers however the process itself involves a sequence of stages that lead to the end written product. Blakeslee in [Blakeslee and Fleischer, 2019] asserted that "learners who move on into composing immediately are likely to produce badly when writing". Thus, students should not go directly to composing. The final product is often the result of different careful revisions. It takes time as well as concentration to write correctly. Therefore, the use of the process approach in writing by learners has to follow the different stages of this process. The stages are as presented in Tabel 2.1.

Krashen (1984) considered the process of writing as a particular task that may comprise four essential stages: planning, drafting, revising, and editing [Raju and Joshith, 2018]. As depicted in Table 2.1 below, the stages are not ordered. Indeed, he suggested that good writers use a recursive (non-linear) approach since writing a draft can be disturbed by more revision or reformulation. He goes further claiming that besides these four main stages mentioned above, there exist other stages that are externally imposed on the students by the teacher himself, they are responding, sharing, evaluating, and post writing. Process writing inside the class should be structured and well organized, and hence, it may not allow free variation of writing stages. Additionally, according to him, planning or pre-writing stimulates students to write.

Unlike Krashen, White and Arndt (1991) stated that "writing is re-writing that

revision-seeing with news eyes-has a central role to play in act of creating text" [Ariza Martnez, 2005]. In one hand, they share the similar feature of Krashen's model which is a related group of recursive stages that involves: drafting, structuring, reviewing, focusing, evaluating and generating thoughts. Their model is displayed as the following:

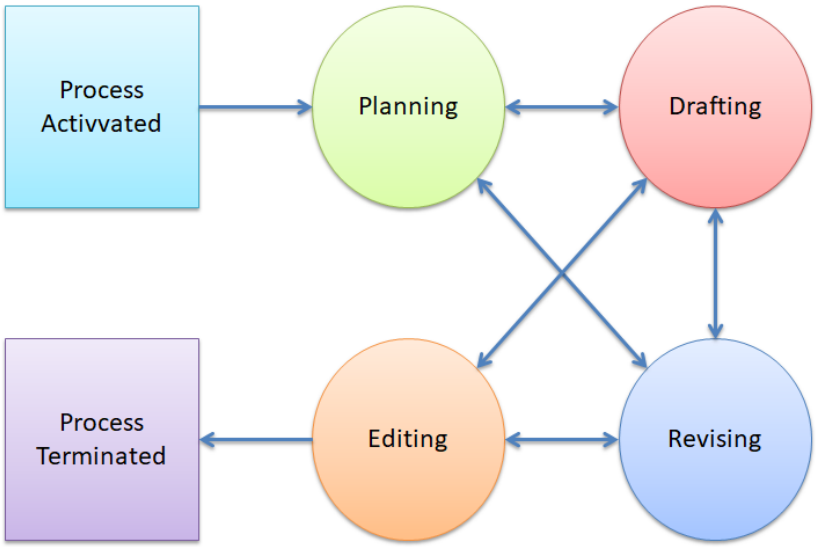

Figure 2.3 – Krashen's Process Writing Model

They care about the topic, the objective, and readers which are the main effective elements in writing. In this respect, they argued "brainstorming should be free-wheeling, unstructured, and non-judgmental" [Ariza Martnez, 2005].This process can be realized by different interactional patterns such as pair, or group work, though they find that group-work works better in brainstorming phase, i.e., the more students take part, the more thoughts flow. In fact for them, drafting is when writers move from pre-writing to writing a first draft, and it will continue to the process of revising and writing until a good paper is produced.

Meanwhile, Richards (1990) pointed three essential stages in using the process approach: First Rehearsing, i.e., pre-writing where students attempt to gather ideas about the topic; and to develop and organize them. Second, drafting stage where they write those ideas in form of graphic plans on rough paper. The third stage latter involves reading of what was written by deleting, adding, or reformulating as necessary to convey the real message.

Also, Tribble (1997) found a more organized process that includes: pre-writing, drafting, revising, editing, and publishing. What is particular with his model is that he focused on a recursive feature "we loop backwards and forwards between the various stages". That is, students may require going back to a pre-writing step or thinking again. Most notably, he insisted on the three components of writing (the topic, the purpose, and the audience). Hedge (2000) in addition suggested four stages in using the process approach (Composing, Communicating, Drafting, and Improving) [Murray, 2018]. Besides paying a more attention to purpose because it may affect the organization and language chosen when drafting. And audience, as Hedge explained, it makes writers select the most suitable things to present, the styles such as formal/informal.

In Composing, as the first stage, she added another strategy which is mind-mapping or note-making that is the same as White and Arndt's (1991). As a matter of fact, Hedge (2000) had less interest in "Structuring" than White and Arndt. Instead, she gave more emphasis to audience. She explained how communicating permits students to address their written papers to real audiences, e.g., teacher peers, and classmates. Besides it's the role of teachers to assist their students to become aware of their au-

dience or readers, i.e., before engaging in writing, they have to find responses to the following questions:

1. Who is my reader?

2. What do I require to convey?

3. How can I make it clear and easy to understand to my reader?

Furthermore, Hedge explained crafting as "the way in which a writer puts together the pieces of the text developing ideas through sentences and paragraphs within an overall structure" [Murray, 2018]. Thus, joining ideas together in a piece of writing is not an easy task and effective drafting needs revision of the final works. Within the development of this stage, she included two activities: redrafting and editing. The former involves evaluating, rethinking, and rewriting parts in the text; however, the latter includes checking grammar, spelling, and punctuation.

Moreover, Blanchard and Root claimed that the writing process includes four stages that are pre-writing, writing, revising, and editing [Blanchard and Root, 2008]. They also insisted on "SPA" which stands for subject, purpose, and audience. They considered the pre-writing as the most difficult part in writing once getting started. They stated that "pre-writing is a way to warm up your brain, just as you warm up your car's engine before you drive". This stage involves generating ideas, brainstorming which is a fast way to gather a lot of ideas on a subject; clustering that is an abstract way to generate thoughts, and free-writing that represents a successful strategy to writing as much as we want to write without checking mistakes. Then, planning, i.e., preparing an outline of the ideas generated from pre-writing, this helps to organize the

ideas. The second stage is "writing" which deals with paragraph writing, i.e., using the thoughts generated in the pre-writing phase as a guide, with respect to some parts of a paragraph (topic sentence, supporting sentences, and concluding sentences). Finally, the last step is revising and editing. Revising is a necessary part in the writing process. Further, they defined the word revision as the connection of the root vision and the prefix re- that means "again", i.e., when one revises, he should see again. Then, editing is the final part of the revision phase. They even provided some kinds of changes that can be done while revising. The model is obvious in Figure 2.4.

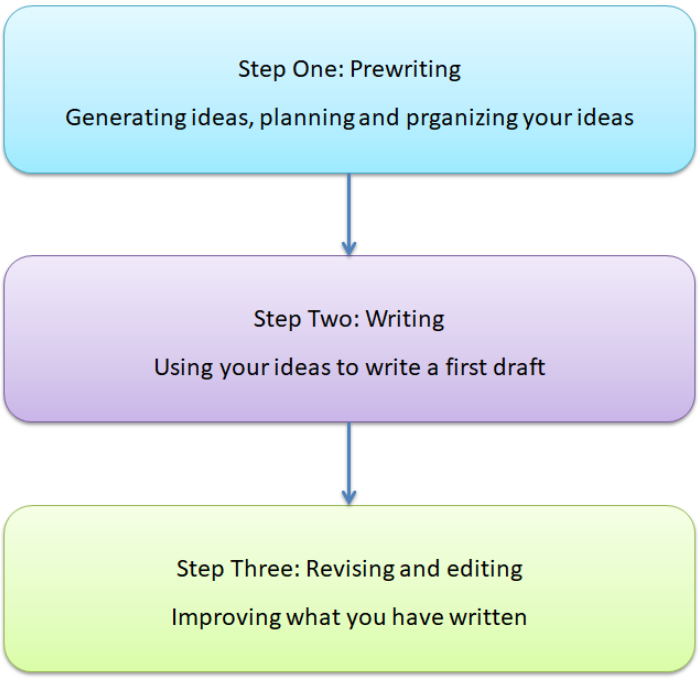

Figure 2.4 – Blanchard and Root's Process Writing Model

Likewise to the previous models of the writing process, Harmer presented four basic operations for the writing stage which are as follows: "planning, drafting, editing, final draft" [Harmer, 2007]. According to Harmer, when planning, writers must focus on three main issues: the purpose of writing, the readers to whom they write, and the

subject structure, i.e., the organization of ideas and arguments in a good unity. And hence, the writer will be ready to start with the first step where he has to decide on what he is going to say. Harmer provided three main kinds of writers: Those who make illustrated notes using only few words.

Nonetheless, others see that it is needless to use those notes instead their planning is in their minds like planning a shopping list. Also, he emphasized that the writer should write a number of drafts till he reaches the editing stage. At this latter stage, the writer reads and tries to choose what works, and what is confusing, then checking spelling and grammar. Once editing and making the necessary changes, the writer produces the final copy (draft), and becomes ready to send the written paragraph to its particular readers. However, Harmer stated that, Figure 2.4 is not completely successful because of two main reasons; it tells us little about how much weight is given to each stage [Harmer, 2007]. The process of writing is linear; it misrepresents the way in which the majority of writers produce written texts.

Indeed, he is against the linear process, rather he is for a recursive where the writer can plan, draft, edit, and then often re-plan, re-draft, and re-edit for many times. Therefore, he asked for the need to represent these features of writing in a different way. That is why he suggested the "process wheel" which clearly demonstrates the various directions that writers can take either going backwards or forwards or going up, and down as the wheels. The final version would become ready only if the process reached its top. It's worth mentioning that how much focus one should give to the different stages of the process will largely depend on the three basic issues of writing (purpose, audience, and subject structure).The wheel process is shown in Figure 2.5.

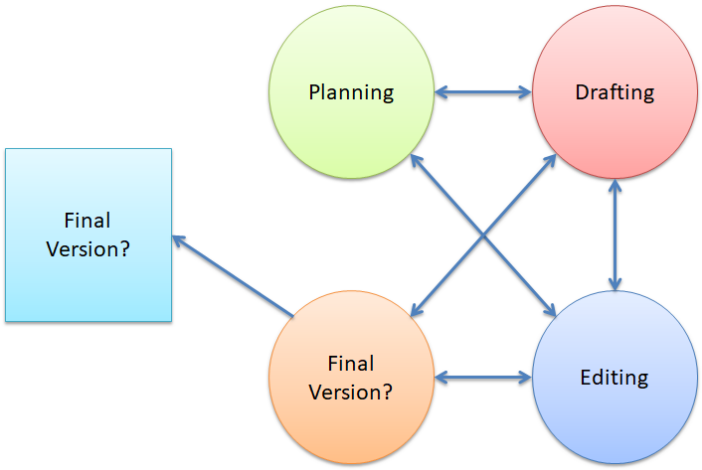

Figure 2.5 – Harmer's Process Writing Model

Experts who believe that writing contributes to the development of critical thinking consider the acquisition of writing skills as a manifestation of thinking. This is due to writing itself is a mean for expressing and communicating thoughts. Writing improves thinking as it requires one to make their ideas explicit and to assess and choose among tools useful for an effective discourse [Alidmat and Ayassrah, 2017]. The connection between writing and critical thinking in the educational context has been elaborated by several researchers because critical thinking involves a set of skills as well as sub-skills. Bloom identified six levels of learning intellectual behavior including knowledge, comprehension, application, analysis, synthesis, and evaluation [Forehand, 2017]. On the other hand, learning critical thinking involves activities like asking questions, defining a problem, examining evidence, analyzing assumptions and biases, avoiding emotional reasoning, avoiding over-simplification, searching for other interpretations and tolerating ambiguity. Thus, intertwined are writing and critical thinking skills that one is sometimes incapable of separating the two. Further, Okuda in [Okuda and Anderson, 2018] outlines important principles that characterize the aca-

demic discourse which are necessary in writing and explicit critical thinking and they are:

- Debate: arguing different points of view
- Scholarship: awareness of what else has been written and citing it correctly
- Argument: developing points in a logical sequence which leads to a conclusion
- Criticism: looking at strengths and weaknesses
- Analysis: taking the argument apart; Evidence: ensuring that the argument is backed by valid data
- Objectivity: the writing should be detached
- Precision: anything that does not assist the argument should be omitted.

By means of these principles, writing is a dynamic process aimed at improving thought. It provides a context for interpretation and enables higher order of thinking. In the classroom, however, how much thinking can be triggered by writing depends first and foremost on the choice of written tasks. Tasks like copying or writing down dictated notes do not foster cognition. Higher level written tasks demanding evaluation, inference, comparison or examination are similarly of no use to the beginning writer who still must learn how to compose ideas. The importance of writing skills in development of critical thinking skills cannot be overemphasized. Learners who excel in writing will have their thinking boosted as well regardless of discipline.

2.2.6.2 Developing CT through Self-assessment

Every step in the process of thinking critically is related to self-reflection. Because of the importance of self-assessment to critical thinking, it is compulsory to bring it into the structural framework of any academic course and not just leave it to random tactics. Generally, the teachers are expected to give feedback to students, yet also students themselves should give feedback to each other on the quality of their performance [Paul and Elder, 2019] As students learn to assess their mates, they learn what is important about the learning process, how their learning can be illustrated, and how they can identify and implement formative continuous feedback. They improve the skill of evaluating their own work and the awareness of that there is always a strategy for improvement. In developing these critical thinking peer- and self-assessment strategies, a method of general analysis of the strengths and weaknesses of student production, in a class was adopted. Still, according to Paul et al. a successful analysis involves a set of prerequisites which students must be given:

1. performance profiles (correlated with grades).

2. multiple opportunities to assess their own work and that of their peers using the performance profiles.

3. A thorough orientation on what is and is not expected in their self-assessment.

Assessment of critical thinking skills demonstrates what students learn and how they learn. Evaluating these skills informs teachers about how their students judge and analyze scenes and how they make decisions. Applying several assessment techniques, such as peer reviews, portfolios and learning journals, gives teachers a

broad sense of the skills learned during the critical thinking steps [Abosalem, 2016]. In fact, Self-assessment, that is, the ability to identify strengths and weaknesses and points for progress in one's own performance, has attracted much attention from researchers and provided an effective means of developing critical self-awareness [Cottrell, 2017, Wechsler et al., 2018]. As a result, learners are able better to set concrete goals and direct their own learning operation. In addition, learners need to be involved in all the processes of learning, mainly the process of evaluation, because tasks-based self-assessment skills are designed to help students reflect on their approach and performance and provide teachers with a clear focus for learner practice. Recent research by [Noddings and Brooks, 2017] revealed a generally positive attitude of the teachers towards students' self-assessment, more specifically highlighting that:

- When supported, learners benefit from assessing their own work
- Self-assessment raises learners' awareness of their strengths and weaknesses
- Self-assessment stimulates motivation and involvement in the learning process.

2.2.6.3 Developing CT through Collaboration and Peer-assessment

Collaborative learning or teaching has been defined by many scholars as a unique and effective instructional method in higher education [Loes and Pascarella, 2017]. It refers to the instruction that includes students working together in small groups to fulfill same goals and improve their own and each other's learning. However, cooperative learning is not simply making students work together in groups, instead, they work together in an attempt to create knowledge and achieve shared learning goals.

Collaboration is a synchronized and coordinated activity in which the participants continuously try to develop and sustain the solution of the problem shared between them. Cooperation is a connective activity in which no priority is given to the individual or group of individuals but encourages and supports both at the same time. In a connective activity no shared identity is used because every participant is working to achieve the goal for his own benefit. Though the two terms are different but still seem similar and they are used interchangeably in most workplaces. Moreover, Johnson and Johnson stated that for a learning activity to be labeled "cooperative" five elements must be present: positive interdependence, face-to-face primitive interaction, individual accountability, social skills, and group processing [Johnson and Johnson, 2016]. Because the variables at our disposal did not meet the specific requirements needed to be considered "cooperative" learning and because of our focus on teaching and learning in higher education, we focused on the educational outcomes associated with collaborative learning. Numerous studies have been conducted on the overall influence of this educational strategy on a wide range of important student outcomes. For example, having students learn collaboratively is positively associated with academic achievement.

Drawing on the works of Johnson [Johnson and Johnson, 2016] and Loes et al, [Loes and Pascarella, 2017] offered a persuasive argument for why collaborative learning might positively influence cognitive growth. First, it is believed that cognitive disequilibrium occurs as a result of the sociocognitive conflict that arises when individuals work together to achieve shared educational goals. Next, it is thought that the construction of new knowledge is often built on students' experiences when working

with others in the collaborative-learning process. As Johnson argued, "cooperative learners cognitively rehearse and restructure information to retain it in memory and incorporate it into existing cognitive structures" [Johnson and Johnson, 2016]. This process is thought to occur when members of the group are exposed to the intellectual diversity of others in the group as they are confronted with innovative or different ways of looking at familiar problems. Viewed from Johnson's perspective, instructors can be seen as facilitators of student learning, rather than people who simply deliver content to students. This orientation allows for social interaction, cognitive conflicts, and therefore disequilibrium in students, which in turn spurs intellectual development and cognitive growth.

Cooperative learning might positively influence students' cognitive development. First, it is believed that cognitive disequilibrium occurs as a result of the sociocognitive conflict that arises when individuals work together to achieve shared educational goals. Next, it is thought that the construction of new knowledge is often built on students' experiences when working with others in the cooperative learning process. As some authors argued Johnson "cooperative learners cognitively rehearse and restructure information to retain it in memory and incorporate it into existing cognitive structures". This process is thought to occur when members of the group are exposed to the intellectual diversity of others in the group as they are confronted with innovative or different ways of looking at familiar problems. Viewed from Piaget's perspective, instructors can be seen as facilitators of students' learning, rather than people who simply deliver content to students. This orientation allows for social interaction, cognitive conflicts, and therefore disequilibrium in students, which in turn spurs intellectual development

and cognitive growth. In short, cooperative learning approaches may lead to the development of the need for cognition, by helping students enjoy the process of learning together and may be more efficient to develop critical thinking than through a lecture or individual educational approaches [Cottrell, 2017]. Accordingly, as a cooperative tool, peer-assessment promotes skills related to diagnosis, evaluation, synthesis and communication. When performing the review of their colleagues' work, students actively participate in the overall learning process [Papadopoulos and Griva, 2017]. They have the opportunity to interact with different perspectives and opinions, analyse critically the ideas, comment, compare the work, give and receive feedback that can be used to enhance their own work, besides enabling peer feedback on the students' activities. A similar outcome would be anticipated from the application of the same framework to CG of three or four students (inter-group review). Information on the use of activities involving peer review and giving feedback in small groups of three or four students is scarce.

Papadopoulos et al. in [Papadopoulos and Griva, 2017] observed a positive effect of the development of CT strategies in structured students' groups, since in those groups there is a stronger team interrelationship and social willingness to accept responsibility in teaching each other. When peer review is joined with group work, students are required to regulate their individual behavior in accordance with the goals of the team introducing additional dynamics. Therefore, it is also important to understand the role of group feedback in team's performance, during cooperative activities designed to strengthen CT skills.

2.3 Previous Studies

Recently, the most common topic for research in education is the need to assist students to develop critical thinking skills while learning. More importantly, in the last decade when both instructors and learners have demonstrated great awareness towards the importance of critical thinking. In the related literature teachers' practices are considered the most influential variables for the development of critical thinking among students. Yet, they can implement different methods and approaches in order to develop a conception of critical thinking among their learners.

Sandhya et al. [Sandhya and Al-Mahrooqi, 2015] explored in their study the difficulty faced by EFL students in employing critical thinking skills in writing university-level literary and broadly academic pieces. Based on a specific case study of 30 English majors at Oman's Sultan Qaboos University, their study investigated the extent to which students trained to read critically are then able to transfer this skill into their writing. The study contrasts samples of student writing on a given topic at the beginning and the end of a semester-long course on critical reading skills. An underlying assumption is that the university English classes consist of students with "reasonable" levels of language proficiency and that, as future English teachers and translators, the skill in question will be an intrinsic part of their professional requirement. The critical skills of the students are evaluated using an open question format and the writing which followed it was evaluated using a predefined rubric which included the critical thinking component into it. Assessment of the students writing was done by four different instructors to retain objectivity and exclude any individual variations. Their study found that students were, by and large, capable of approaching a text from a

critical perspective and identify key components of audience, tone and individual voice. Yet, when confronted with the task of writing on a similar theme, the writing showed levels which were more akin to areas of definition and description rather than analysis and evaluation, often identified as key features of academic writing. Further interviews with the four instructors identify some ways in which critical reading skills could be more successfully incorporated in the writing of the EFL students.

Bashar et al. [Bashar, 2016] investigated the usefulness of movies as an instructional tool in developing student's critical thinking skills. They hypothesized that the use of movies as an instructional tool will develop tertiary student's critical thinking skills. To achieve the objectives of their study, a descriptive-qualitative method was followed. It aims to describe two variables: movies as the independent variable, and critical thinking as the dependent variable. Their main research instruments to collect data were movie projection joined with designed movie-related worksheets, classroom observation, and classroom discussion. The sample of the research was a randomly chosen group from second year LMD English students, at the Department of Foreign Languages, Branch of English, University of Mohammed Kheider, Biskra Algeria. According to the obtained results, movies are proved to be an effective and practical teaching technique. They can positively affect and develop student's critical thinking skills, and they remark that students demonstrated positive attitudes towards viewing movies as part of their classroom instruction.

Kavanoz et al. [Kavanoz and Akbas, 2017] through a qualitative study, conducted with five EFL teachers at a high school, aimed at investigating in-service EFL teachers' conceptualizations of critical thinking as well as the strategies they use to infuse critical

thinking into their EFL courses. The findings indicated that participating teachers have adequate knowledge about critical thinking and they incorporate certain techniques to foster critical thinking among language learners. Thus they recommended that there should be more focus on exploring more critical thinking conceptions and practice among EFL teachers at different levels.

Yaakub et al. [Yaakub et al., 2018] aimed to provide insights into the use of i-Think maps in developing the understanding of critical thinking skill among ESL student teachers. The i-Think map programme was introduced by the Ministry of Education in 2012 which aims to produce innovative learners including those in language learning field. Employing Kemmis and Mac Taggart's (2000) model of action research, eight different types of i-Think maps were introduced to three trainee teachers for four months in order to obtain feedback concerning their learning experience and understanding of critical thinking skill. The participants were asked to opt for suitable i-Think maps to summarize the content of the lectures delivered in their teaching session. Analysis of the data which were generated from document analysis and semi-structured interviews with the student teachers, showed that the participants were interested in using i-Think maps and they perceived the maps as a useful tool in improving their understanding of critical thinking, and in highlighting the importance of using i-Think maps as a teaching aid in enhancing the critical thinking among the students.

Ghout et al. [Ghout, 2018] proposed a study that aims to explore the role of classroom discourse in developing EFL students' critical thinking skills. Specifically, it seeks to shed light on the techniques and tools used by teachers to promote critical thinking in the classroom. In their study authors answered some questions such as:

How does classroom discourse contribute in enhancing EFL students' critical thinking? And what are the techniques used by the teachers to enhance their students' critical thinking skills? by using a qualitative method to collect data from the participants. It consisted of classroom observation of the third year LMD students at Béjaïa University. Besides, they observed how group discussion and debate improve their abilities in thinking critically. In addition, Interviews with some students and some of their teachers were conducted. The obtained results reveal that classroom discourse plays a crucial role in promoting critical thinking skills among EFL students.

Bentadjine et al. [Bentadjine, 2018] proposed a study that aims to share both theoretical and practical ideas about critical thinking development within English language teaching/learning contexts; this study defined the strengths and weaknesses of speaking skills of today's pupils in Algerian middle school and to demonstrate the possibilities of enhancement of the speaking skills of pupils learning English. The authors in their study setting out with the aim of investigating the extent to which Algerian English teachers was aware of using critical thinking skills and effective communication techniques in their classrooms . In particular, it is an attempt to assess the strengths and weaknesses of the currently used curriculum to determine whether the books should be reconstructed to boost critical thinking in the content and to what extent teachers are required to utilize supplementary materials. The obtained results of their study suggest some practical implications for teachers, as well as, some teaching strategies based critical thinking encourage students, and raise their interest and motivation.

Irwan et al. [Irwan et al., 2019] in their study aimed to determine the characteristics, feasibility, and effectiveness of guided inquiry-based ecosystem module to improve

students' critical thinking skills. The research instrument used was a test question sheet adapted from Facione. The findings of the study demonstrated that: the developed module was characterized with guided inquiry-based syntax and critical thinking skills aspect and the student critical thinking skills achievement which treated by using the module was significantly higher compared to others .they found that the developed module was feasible to be used in learning and effectively improved students' critical thinking skills.

Gunawan et al. [Gunawan et al., 2019] in their research has explored the increasing tendency of students to think critically or called critical thinking disposition. In particular, this study compared the increasing levels of critical thinking disposition of male and female students through interactive multimedia. He employed a quasi-experiment with a pretest and posttest control group design. The subject consisted of 16 male and 16 female students in senior high school at Mataram, Indonesia. The research instrument used description problem that has been adapted to the indicators of critical thinking disposition, namely truth-seeking, open-mindedness, analyticity, systematic, and inquisitiveness. The results indicate that of N-gain research for male students were 35.5 and female 36.4. This shows that the use of interactive multimedia has a positive effect on improving critical thinking disposition in both male and female students.

Zou et al. [Zou, 2019] wanted to obtain a holistic and in-depth understanding of CT in EFL writing, Through a mixed method case study, he examined the conception, teaching and learning of CT in three authentic EFL writing classrooms through the triangulation of multiple sources of data, including interviews, classroom observations, questionnaires, writing tests and documents. The findings revealed that the teachers

emphasized different aspects of CT (e.g., "thoughtful arguments"). They overall sided with a combinatory view and understood CT in EFL writing as a cognitive, social, and discursive activity in which writers actively apply rational, reflective, and fair-minded thinking to reason through the problem-solving process, interact with the task environment, and use linguistic resources to make meaning so as to achieve intellectual excellence in EFL written communication.

Helan et al. [HeLan, 2019] also conducted a research project in order to cultivate critical thinking on campus through reading, and by a qualitative study, on the research findings, a series of English reading activities were organized and made part of the students' extra-curriculum practice, which gradually prepared them for an English reading contest at the provincial or even the national level. The results have proved that his project was very productive in terms of raising the students' awareness of critical thinking and of ways to cultivate it.

Kobayashi et al. [Kobayashi, 2019] in his work, suggested a variety of discussion topics, students would be exposed to many different points of views. Previous similar activities over the past two years have led up to this research activity in the Academic Skills: Thinking class. The preliminary findings of what is perceived to be critical thinking and what is experiencing critical thinking through discussion is one of the themes of his study. Self-reflection through video recording reviews and goal setting were also a central component of realizing what each student needed to do to improve. The main finding demonstrated in a substantive increase in understanding of what critical thinking entailed.

Fitriani et al. [Fitriani et al., 2020] attempted to investigate the effect of Problem-

Based Learning (PBL), Predict, Observe, Explain (POE), and the combination of both (PBLPOE) on students' critical thinking skills and scientific attitudes in Biology. A pretest-posttest nonequivalent control group design was employed in the study with 132 tenth-grade students from Bengkulu, Indonesia. An essay test was administered to assess the participants' critical thinking skills, and a checklist and an interview guideline were used to observe the students' scientific attitudes. The results of the analysis showed that PBL, POE, and PBLPOE had an effect on the students' critical thinking skills and scientific attitudes in Biology, and it indicated that PBLPOE was not significantly different from PBL, but differed considerably from POE and conventional in improving students' critical thinking. Also, it showed that PBLPOE differed significantly from PBL, POE, and conventional in enhancing students' scientific attitudes. The highest post-test score was observed in the PBLPOE classroom. Thus, PBLPOE can be used to improve students' critical thinking performance in Biology.

Al-Mahrooqi et al. [Al-Mahrooqi and Denman, 2020] conducted a research to assess assessing student' critical thinking skills in the humanities and sciences colleges of a Sultan Qaboos University-Oman. The test featured 36 questions across six item groups that were associated with five critical thinking principles. Descriptive analysis was used to calculate overall correct percentages for the entire test and for each item group in order to determine whether participants had mastered or failed to master the critical thinking principle. Results indicate that participants had either failed to master, or had neither mastered nor failed to master, all five of the assessed principles.

Abolghasem et al. [Abolghasem et al., 2020] attempts to highlight self-directed learning through the use of reflective journal among Malaysian diploma nursing stu-

dents. Based on a qualitative analysis, the journals were analyzed to identify the students' levels of reflection of content/descriptive, process/practical, and premise/critical reflection resembling Transformative Learning Theory (TLT). The main findings expressed students' appreciation towards collaborations and they were grateful to be able to express their feelings and emotions of "fears" and "trust". Further, they indicated their mindfulness to appreciate their levels of knowledge and skills through reflection upon the nursing tasks as they make themselves ready to be a future nurse.

Zulkifli et al. [Zulkifli and Hashim, 2020] conducted a study to identify the effect of Philosophy for Children (P4C) in improving critical thinking. The study was conducted via the quasi-experimental research comprising of 27 students placed in the experimental group while the remaining 34 students in the control group. The instrument used was the Ujian Kemahiran Menaakul (Test for Reasoning Skills) Centre for Teaching Thinking (UKMCTT). Based on the statistical t-test on critical thinking, the treatment group scored a higher mean in the post-test mean score compared to the control group, which suggests that P4C had helped to improve students' critical thinking. The application of P4C allows students to think or reflect on the consequences of the action or assumption they made in their discussion.

Stedman et al. [Stedman and Brown, 2020] demonstrate that learners need support in not only developing capacity for a global mindset, but also for thinking critically about the world. Employers are seeking graduates who can enter the workforce prepared to work within agriculture with the ability to understand its complexities. Higher education institutions have been called upon to provide this to students and faculty are often charged with this responsibility. However, faculty are often unpre-

pared to provide this level of instruction and need support in order to foster this in the classroom. Student participants in this study were exposed to scenarios, which are a tool used to provide multiple perspectives and outcomes to real-life scenarios. Faculty used the scenarios to complement course instruction with respect to the impacts of climate change on food security and hunger. Using Facione's framework for critical thinking skill, statements submitted by students both prior to the scenario and post were analyzed. It was found that while students demonstrated critical thinking in both the pre and post, the post statements were much richer, in-depth, and thoughtful in how critical thinking was demonstrated. This showed that faculty support, combined with innovative teaching methods, like scenarios, will encourage students' building of capacity for critical thinking.

Table 2.2 – Comparison of the Previous Studies (1)

Author	Year	Country	Objective	Instrument	Type	Sample Size
Sandhya et al.	2015	Oman	Explore the effect of reading critically on writing	Reading samples	Qualitative	30 students
Bashar et al.	2016	Algeria	Develop students' critical thinking skills through movies	Movies projection	Descriptive qualitative	30 students
Kavanoz et al.	2017	Turkey	Develop conceptualizations of critical thinking	Concepts and practical strategies	Qualitative	5 teachers
Yaakub et al.	2017	Canada	Develop the understanding of CT Skills among ESL student teachers	I-Think Map	Qualitative	3 student/teachers
Bentamra et al.	2018	Algeria	Teach thinking skills through the teaching of reading.	Reading	Quantitative	25 students

Table 2.3 – Comparison of the Previous Studies (2)

Author	Year	Country	Objective	Instrument	Type	Sample Size
Ghout et al.	2018	Algeria	Explore the role of classroom discourse in developing EFL students' critical thinking skills	Classroom Discourse	Qualitative	26 students
Bentadjine et al.	2018	Algeria	Foster critical thinking skills through speaking and effective communication methods in EFL Classroom	Communication	Quantitative	35 students
Irwan et al.	2019	Singapore	Develop guided inquiry-based ecosystem module to improve students' critical thinking skills	Test question sheet	Qualitative	28 students

Table 2.4 – Comparison of the Previous Studies (3)

Author	Year	Country	Objective	Instrument	Type	Sample Size
Gunawan et al.	2019	Indonesia	Develop tendency of CT disposition through interactive multimedia	Problem-Based Learning	Quantitative	32 students
Zou et al.	2019	Hong kong	Develop a holistic and in-depth understanding of CT in EFL writing	problem-solving process	Qualitative	45 students
Helan et al.	2019	China	Cultivate CT on campus through reading	Reading	Qualitative	25 students
Kobayashi et al.	2019	Japan	Develop CT and Attitude through discussing points o views	Video recording	Qualitative	30 students
Fitriani et al.	2020	Indonesia	Investigate the effect of Problem-Based Learning on students' CT development	problem based learning	Quantitative	32 students

Table 2.5 – Comparison of the Previous Studies (4)

Author	Year	Country	Objective	Instrument	Type	Sample Size
Al-Mahrooqi et al.	2020	Oman	Assess students' CT skills	Test	Qualitative	20 students
Abolghasem et al.	2020	Malaysia	Highlight self-directed learning through reflective journals	Teamwork	Qualitative	39 students
Zulkifli et al.	2020	Malaysia	Identify the effect of Philosophy for Children in improving CT	Resoning test	Quantitative	61 students
Stedman et al.	2020	Florida-USA	Encourage students' building their capacity of CT through innovative teaching	scenarios	Qualitative	38 students

Table 2.5 tried to highlight the key similarities and differences between the previous works found recently in literature. Generally, all the studies shared the same aim that is developing CT among teachers and learners to solve certain weaknesses and difficulties. However, through different tools or strategies. Similarly, our study addresses the same aim; to develop CT skills among Master Students while they write LRs. It is illustrated that the previous studies introduced useful tools and methods to foster CT such as problem based learning , self directed learning ,reading activities , i-think maps, philosophy teaching, Team work and collaboration, classroom discourse, inquiry based activities, assessment, video recording ... Our study shares with some studies [Abolghasem et al., 2020] the use assessment, collaboration (teamwork) and self-directed learning, because we have integrated in our study both forms of assessment self and peer assessment methods.

In addition, we supported the two methods with a rubric. For the first time in literature, a rubric was created for both reasons developing CT skills and enhancing LRs writing in our study. Moreover, unlike the majority of the previous studies, our research adopts a mix mode method based on two approaches qualitative and quantitative approaches to collect data. Furthermore, in contrast with the previous works which presented findings of small samples (from 10 to 61 participants), our pilot study has taken the whole population as a sample for the target of collecting more data concerning our participants in order to better generalize our findings .

2.4 Conclusion

Critical Thinking is one of the key goals of education. Moreover, educators have long been aware of the importance of critical thinking skills as an outcome of students learning. Critical thinking skills can be learned at any age, depending on the cognitive development of individuals. Educationally viewing the case, critical thinking skills can cause students to develop intellectually. It is something that is of great benefits to the educational systems. Through such skills, students feel free to discover and get engaged in the process of learning in general and language learning in particular. Critical thinking skills have relation to several other important students' learning outcomes, and it is powerful resource for them so they can benefit from. Critical thinking is used when we want to assess the intellectual works of others, in which, we will figure out our strengths as well as weaknesses in working on those literary works. Additionally, critical thinking is about making decisions, predictions and solves problems. It deals also with the process of thinking in which the new thoughts will be enhanced each time. Therefore, teaching critical thinking at university is really needed; so that, the teachers should provide tools to make critical thinking understandable for students, give tasks to work on to develop their own opinions. Consequently, the students will have an opportunity to improve their creativity to be good thinkers where they will have self confident to present their multiple arguments, though the teacher should take into account the significance of the following skills such organizing ideas, evaluating arguments and so forth to be applied by the EFL students. To conclude, critical thinking is paving the way for the learners to be free to make frequent use of their thinking skills. Furthermore, an effective literature review can be a good tool to the

author in order to provide a critical analysis of the available data in a specific domain. Similarly, it can establish relationships with different researches. It can also help novice researchers to gain better insight into suitable paradigms for a future work, and provide information on collection and analysis of the methodology used. How to write a review of the literature is a needed skill that every author should learn.

Chapter 3

Research Design and Methodology

Contents

3.1 Introduction

This study investigates the students' critical thinking skills development in EFL classrooms. The principle aim of this research is to foster CT among students while they write LRs. Hence it deals with some factors or methods that hamper students' achievements in writing and LRs writing in particular. This chapter, then, is devoted to explain the methodology used to carry out this study. Basically, it provides information about the experimental study including the variables of the research, the plan, sample of the research, tools of the research and data analysis. The study was carried out in the department of English at faculty of Letters and Foreign Languages, Amar Thelidji University, Laghouat, Algeria.

3.2 Variables of Study

This research is mainly based on a quasi-experimental study. Basically, for this study two variables were examined: the independent variable is changeable along the research

it refers to peer- assessment, self-assessment, and CLAR rubric. While the other variable is dependent and it represents the participants' Critical Thinking skills that teachers want to foster among their students over time in general and while writing their LRs along the current study in particular.

3.3 Plan of the Research

The study is principally based on exploring the effective use of self-assessment, peer-assessment and CLAR Rubric in developing critical thinking skills in Master students of English at Amar Thelidji University while they write LRs. Until recent years, several research studies were based either on quantitative or qualitative research approaches. In fact, these two main approaches are now being utilized in different disciplines. Perhaps the quantitative approach is the simplest to identify because the data produced is always numerical, as they are analyzed simply by using statistical methods. As a result, quantitative approach has been adopted in this study to measure the students' knowledge about different assessment strategies and techniques in a classroom setting, to measure the students' acquaintance of different tools use in writing LRs, also to determine in which extent they were beneficial to reach classroom goals. On the other hand, the qualitative approach has been also adopted to recognize the students' improvement of different skills that are mainly related to writing critically.

In addition to the CLAR, this work focused on the process approach of writing which entails complex cognitive activities requiring attention at various levels: thematic, sentence, paragraph, essay and lexical [Ampa and Basri, 2019]. Several drafts

were produced especially as re-writing is encouraged; and for, students to learn to be thorough, productive, and independent as they work [Trosset et al., 2019]. The process approach adopted in this study aimed to provide feedback to students as they work alone (self-assessment) or with their peers (peer-assessment) to improve their LRs writing.

3.4 Participants and Setting

This study was conducted at the Amar Thelidji University-Laghouat. The University which celebrated its 33th anniversary in 2019 is one of first universities in Algeria. The university, situated in Laghouat city, includes 24 Departments and 9 faculties. One of its prominent faculties is the Faculty of Letters and Languages which offers degrees in English, French, Arabic and Spanish. In the English Department the use of English is compulsory as a medium of instruction and the language of administration. The University adopted the licence / bachelor, master, doctorate (LMD) system as a new reform in 2004, The main goals behind the introduction of the LMD system in Algerian universities are the adoption of a system of easily readable and comparable degrees, and the establishment of a system of credits for promotion of mobility for students and academic and administrative staff. It also aims at harmonizing our system of Higher Education, with the rest of the world [Hanifi, 2018]. Since Algeria has assumed English as a Foreign Language (EFL) in its schools and higher educational Institutions as an obligatory subject-matter in the overall educational program in all streams, the area of teaching EFL is always a theme to variant researches which aim at improving its

learning process in general and learning skills in Algeria in particular.

The University at which the researcher is a teacher was chosen because it offers the types of classes needed for this study. Research Methodology Module is compulsory for all undergraduate and second graduate/Master students of the University and is a graduation requirement. The course objectives match the requirements of the research. The outcomes of this study can benefit all these classes. Even the rubric suggested in this research can be used to develop students' critical thinking in this course and in the other courses as well.

Alvi in [Alvi, 2016] stated that: "Sampling involves selecting a group of people, events, behaviors or other elements with which to conduct a study. When elements are persons, they are known as subjects selected from the delineated target population in a way that the individuals in the sample represent as nearly as possible". The sample selected for this study, based on convenience sampling, consisted of 120 participants. It represents the whole population. Population is defined by Alvi as "The entire aggregation of cases that meet specified set of criteria".

Convenience sampling (also known as availability sampling) is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study. To obtain the necessary information regarding the problem of LRs writing, we select Master Two students of English who are really struggling with the problem (Pre-test) mainly in Master Level as they are required to write their Master Dissertations. Their native language is Arabic, and their age ranged from 21 to 45 years.

3.5 Research Approaches

To fulfill our objective, we need to rely on a method. Mills in [Mills and Gay, 2019] defined research methods as " A range of approaches used in educational research to gather data which are to be used as a basis for inference and interpretation, for explanation and prediction". Research methods are techniques and procedures used to gather all possible data. Since our aim is to analyze presupposes identification, we opted for the descriptive method first then a quasi-experimental one. Also he stated that "descriptive design helps to identify problem in a current practice with a view to improve outcomes"[Mills and Gay, 2019].

Still, we need a research strategy to identify, analyze and interpret the problematic of the research problem. Fitriani in [Fitriani et al., 2019] described a research strategy as the one "Where you describe how you intend implementing your own research study, i.e., the strategy that you intend adopting to complete your empirical study". The objective of descriptive research is to explore the real-life situation and to provide information of the elements as they occur. Also, the descriptive method describes an actual situation; so that, one will find appropriate guidelines for future use. In our case, the existing situation is Master University Students of English. By using this method, we may develop future guidelines for helping them solve or reduce their problem mentioned on how to write good LRs.

A quasi-experimental method is also used to identify a comparison group or a treatment group in terms of baseline characteristics. The comparison group captures what would have been the outcomes if the programme /policy/instrument had not been implemented (i.e., the counterfactual). Hence, the programme/policy or instrument

can be said to have caused any difference in outcomes between the treatment and comparison groups. In this study, the quasi-experimental design was adopted to see whether the use of the rubric as a scoring guide for peer assessment and self-assessment would help develop students' critical thinking skills. The framework of the study is as follows:

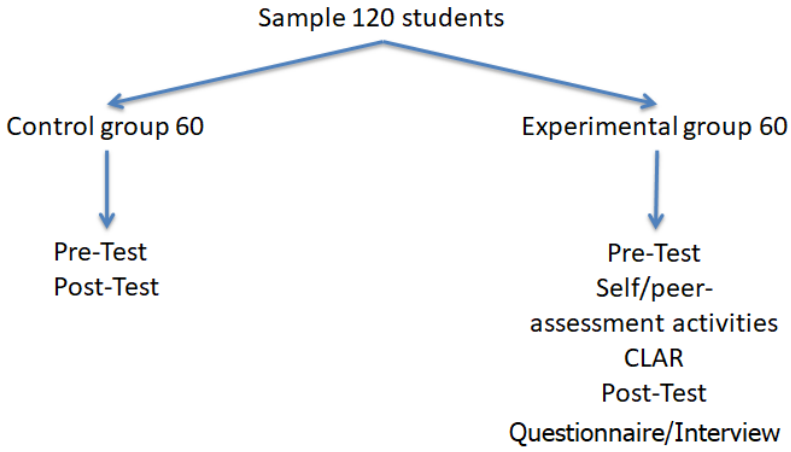

Figure 3.1 – Research plan

3.6 Data Collection Procedures

To collect the necessary information for our research, a pilot study in the form of different research tools: Pre/post written tests, observations, a questionnaire, a semi-structured interview and a Rubric. At the beginning a pre-test was undertaken with all the participants to clarify the research problem and to identify the real weaknesses faced by the sample, and through which we confirm the real existence of such a pedagogic handicap ;the pre-test is accompanied with a warm up session to prepare the

participants for the treatments. Moreover, observations are widely common tools in classroom research.

Conducting observations in classroom settings align with the aims of this thesis as it will give detailed characterisation of the learning situations and practical evidence of pedagogical practices carried out by the teachers and learners [Mills and Gay, 2019].

In this research we will make use of semi structured non participatory observations. This type of observation will help us to understand the overall learning environment and find out practical evidence of practices of critical thinking within the carrying out of the session. The researcher will take a neutral position without interference in the classroom practices so as not to influence the overall session. It is aimed to have useful observations for teachers, as the study will serve as finding real evidence for the pedagogical practices and minimise the teachers/ students' threat of being observed.

Obviously, the second is a questionnaire administered to the 120 students in the preliminary test, the whole population chosen, besides a semi structured interview with the experimental group students and 7 teachers at the Department of English, Laghouat University-representing the (1/5 randomly) of the whole number of teachers in the same department and who are in charge of Master Degree. Additionally, the CLAR Rubric that will assist the learners in all activities.

All data collected will be analyzed using PSPP, which is a program for statistical analysis of sampled data. PSPP is the free version of SPSS. It looks like SPSS, behaves like SPSS, is compatible with SPSS, but isn't SPSS. Unlike SPSS it's free. You don't have to pay a cent to get it. Furthermore, there is no license expiry. Once you have it installed and working it'll keep working until you uninstall it (or your computer wears

out).Except for very advanced statistical commands, everything that you can do with SPSS can be done with PSPP. Thus, appears very similar to it with a few exceptions.

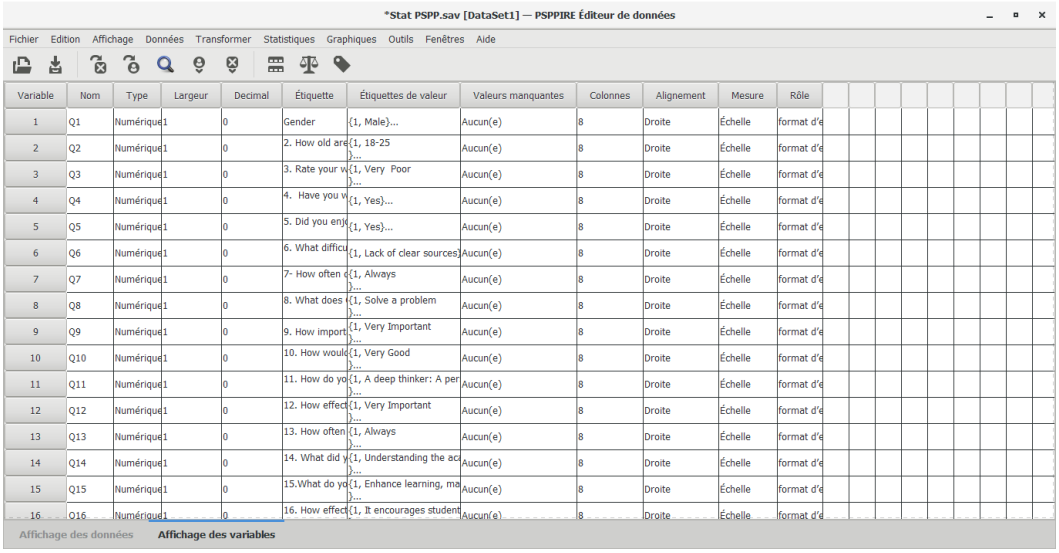

Figure 3.2 – PSPP Main Interface

The most important of these exceptions are, that there are no "time bombs"; your copy of PSPP will not "expire" or deliberately stop working in the future. Neither are there any artificial limits on the number of cases or variables which you can use. There are no additional packages to purchase in order to get "advanced" functions; all functionality that PSPP currently supports is in the core package. PSPP is a stable and reliable application. It can perform descriptive statistics, T-tests, Anova, linear and logistic regression, measures of association, cluster analysis, reliability and factor analysis, non-parametric tests and more. Its backend is designed to perform its analyses as fast as possible, regardless of the size of the input data. You can use PSPP with its graphical interface or the more traditional syntax commands. A brief list of some of the PSPP's features follows below. We also made available a page with

screenshots and sample output. PSPP has:

- Support for over 1 billion cases.
- Support for over 1 billion variables.
- Syntax and data files which are compatible with those of SPSS.
- A choice of terminal or graphical user interface.
- A choice of text, postscript, pdf, doc, opendocument or html output formats.
- Inter-operability with Gnumeric, LibreOffice, OpenOffice.Org and other free software.
- Easy data import from spreadsheets, text files and database sources.
- The capability to open, analyse and edit two or more datasets concurrently. They can also be merged, joined or concatenated.
- A user interface supporting all common character sets and which has been translated to multiple languages.
- Fast statistical procedures, even on very large data sets.
- No license fees.
- No expiration period.
- unethical "end user license agreements".
- A fully indexed user manual.

- Freedom ensured; It is licensed under the GPL (General Public License).
- Portability, Runs on many different computers and many different operating systems (Windows, Linux ,...).

PSPP is particularly aimed at statisticians, social scientists and students requiring fast convenient analysis of sampled data.

3.7 Semi-Structured Interview

A semi-structured interview is a qualitative method of inquiry that combines a pre-determined set of open questions (questions that prompt discussion) with the opportunity for the interviewer to explore particular themes or responses further. A semi-structured interview does not limit respondents to a set of pre-determined answers (unlike a structured questionnaire). Semi-structured interviews are used to understand how interventions work and how they could be improved. They also allow respondents to discuss and raise problems that you may not have considered. In a semi-structured interview, the interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee.

1. The interviewer and respondents engage in a formal interview.
2. The interviewer develops and uses an 'interview guide'. This is a list of questions and topics that need to be covered during the conversation, usually in a particular order.
3. The interviewer follows the guide, but is able to follow topical trajectories in

the conversation that may stray from the guide when he or she feels this is appropriate.

Although the process of preparing for the interviews, setting up the interviews, conducting the interviews, and analyzing the interviews is not nearly as quick and easy as you might think. The time and effort required to do all of it right is considerable. Interviews usually entail the arduous task of analyzing a huge volume of notes and sometimes many hours of transcripts, many researchers like to use semi-structured interviews because questions can be prepared ahead of time. This permits the interviewer to be prepared and appear competent during the interview.

Semi structured interviews are well suited for exploring attitudes, values, beliefs, and motives; they could be good in sensitive areas.

1. They facilitate getting every question answered

2. They ensure the respondent is working on his/her own

3. They can potentially increase response rate.

For biography related researchers, semi-structure interviews are ideal for the task [Pathak and Intratat, 2016]. Similarly, semi-structured interviews for groups are also perfect as they accord the researcher enough time to explore on a subject issues. In addition to this, the selection of interviewees should be a homogenous process whereby the selected participants are related to the study question. As such, it is significant to acknowledge semi-structured interviews as the ideal data collection mechanism for qualitative studies.

3.7.1 Teachers' Semi-structured Interview

Teachers' interview deals with the teachers' opinion about the different activities and assessment methods. Actually, the research is conducted to find out English language teachers knowledge about the different tools they already use to develop their students' thinking skills, their assessment criteria they usually follow, and what strategies and methods suit better their classroom atmosphere. The interview deals with the teachers' opinions before and after the experiment, and whether they could foster critical thinking in their learners, their benefits and finally their points of view about a good implementation of some activities and methods in their classes. It is divided into Pre-test Interview and Posttest interview. (See Appendix B)

3.7.2 Students' Semi-structured Interview

Students' interview deals with the students' opinion about the different activities and assessment methods used in this study. The interview also deals with the students' perceptions before and after the experiment, and whether they benefited of the self and peer assessment methods or not. More importantly, whether they found the CLAR effective in developing their CT skills while they write LRs. (See Appendix C)

3.8 Questionnaire

The questionnaire might be the only instrument that can serve as a means of collecting a considerable amount of data with a minimum of time and effort. It is not only easy to administer, but provides also a general view of the investigated problem which is

difficult to obtain by other means of investigation. Questionnaire allows the gathering of reliable and valid data, relatively, in a short time. It is an instrument which includes a number of questions that require a complete answer or selecting one among the existing answers as it is reported by Bosch who claimed that "Questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answer" [Bosch-Baliarda et al., 2019].

Questionnaires have many advantages; the main attraction of questionnaires is their unprecedented efficiency. It requires less time less effort, energy, and financial resources. By administering a questionnaire to a group of people, one can collect a huge amount of information in less than an hour, and the personal investment required will be a fraction of what would have been needed for, say, interviewing the same number of people. Furthermore, if the questionnaire is well constructed, processing the data can also be fast and relatively straightforward, especially by using some modern computer software. These cost benefit considerations are very important. Questionnaires are also very versatile, which means that they can be used successfully with a variety of people in a variety of situations targeting a variety of topics [Bosch-Baliarda et al., 2019]. The greater the number of informants, the more economical of time it is to take or to interview 60 people for only ten minutes will take ten hours , and probably much more once travelling , is taken into consideration. With such number, a questionnaire may be the only sensible choice. Other advantages are summarized by Bee [Bee and Murdoch-Eaton, 2016] in the following points:

- The majority of people are familiar with questionnaires, and know how to com-

plete them.

- The respondents' opinions are not influenced by the researcher's point of views
- The respondents can fill the questionnaire at their own place.
- Questionnaires are easy to analyze.

The virtues of questionnaires might suggest that they are perfect research instruments, this is not quite so. Questionnaires have some serious limitations; we can summarize them as follow:

- Written questionnaires lack some helping features like gestures and other visual clues, and personal contact which can affect the respondents.
- Sometimes questionnaires are not completed by the person we want.
- Some respondents may not give questionnaire back.

3.8.1 The Questionnaire's Description

Designing questionnaires is not an easy task; too much focus has to be paid to ensure that the questions are relevant, suitable, intelligible, concise, and unbiased. It is impossible even for experts to make it right the first time round. Therefore, many drafts for our questionnaire have been written before achieving the final version. They involve close and open questions: The former is a restricted type which includes questions or statements where the respondents should choose one or more choices like "Yes" or "No". They are easy and quick to fill in; nevertheless, they sometimes take longer

time to devise than needed for open questions. They are in fact easier to design, but difficult to analyze and anticipate the range of responses.

3.8.2 Piloting the Questionnaire

Concerning piloting, Ferreira stated that "a pilot has several functions, principally to increase the reliability, validity and practicability of the questionnaire" [Ferreira and Corredor, 2019]. Thus, before administering questionnaires, researchers have to pilot them first by following this checklist:

- Are the instructions clear, easy to follow and written in simple language?
- Are the questions clear enough to be answered?
- Are the questions relevant to the research questions?
- Do our informants find any of the questions :
  - Embarrassing
  - Irrelevant
  - Ambiguous
- How long does the questionnaire take to complete?
- Are the questions long?

The main objective of piloting the questionnaires is to see whether they work as planned; even if [we] are going to administer only a small number of questionnaires, it might be worth "pilot" them out on one or two people only beforehand. Bee stated,

"A pilot test of a questionnaire or interview survey is a procedure in which a researcher makes changes in an instrument based on feedback from a small number of individuals who complete and evaluate the instrument" [Bee and Murdoch-Eaton, 2016]. The pilot study helps the researcher to reduce any ambiguity for participants . Prior to the pilot test , the participants were not encouraged to respond until they ensured that information contained in the questionnaire will remain anonymous.Their responses were as follows:

1. We cannot understand abbreviations
2. Why am I undertaking my master? I cannot answer we had not the choice?
3. What is the meaning of "bibliographic" in part2?
4. I do not know how to answer this question. I think it is repeated.
5. What is metacognition?
6. Some questions seem to have the same answer. (See appendix D for the questionnaire before piloting)

After the pilot study, the questionnaire is improved; the order of the questions is revised . Also some irrelevant questions are omitted and others are reformulated to be direct and written in simple words. Moreover, it was noticed that there was a need to include some questions about how the students perceived the learning activities that required them to think critically. (See Appendix E for the questionnaire after piloting)

3.8.3 The Students' Questionnaire

The study is carried out by making a questionnaire that will assist us answer the questions related to our hypotheses. The questionnaire was distributed to Master Two students at the English Department in Amar Thelidji University. Every section of the students' questionnaire revolves around a research question of the study and tries to attend an objective. The questionnaire involves five parts 1,2,3,4 and 5.

- Part 1: Background Information
- Part 2: Writing LRs
- Part 3 : Critical Thinking Skills
- Part 4: Peer/Self-Assessment Activities
- Part 5: The CLAR Rubric

The students' questionnaire deals mainly with the learners' knowledge about the multiple tools, activities, techniques and strategies they already experienced with their teachers of methodology during the experience. The researcher keeps observing only along the study.

3.8.4 Questionnaire Structure

The questionnaire is intended to collect data about the students' perceptions of different teaching methods before and after the experiment. The aim of this study is to examine students' Critical Thinking skills development while writing Literature Reviews. The students are kindly asked to answer the questions. Their participation is

voluntary. All responses will be treated strictly as private and confidential, and will be used solely for scientific research purposes.

Part1 intends to collect data about the background of the participants and it includes questions about: gender, age, and ability in English. The two first questions seek to know the age and gender of the students to discover whether there is a correlation between the age or gender and the students' achievements in writing and then about their use of CT skills. Later question 3 wants to discover how the participants would judge their level as a primary practice of self-assessment activity; and also in order to be able to compare between their actual level and their critical thinking skills used later.

Part2 aimed at examining the students' writing LRs: process; components, importance and mainly the critical steps of writing a LR. Based on the pretest's findings the students demonstrated different weaknesses in LRs writing. Thus, this section aims to evaluate the improvement of the participants in their written productions-LRs. Also a question included to gather data on the challenges and difficulties the students face while writing LRs. Another question is intended to analyze how often they practice LRs writing in the class in order to find the real reason behind their low level.

The aim of part 3 is to inform and evaluate the students' background data about CT. First questions tend to introduce the concept and its importance. Moreover, other questions implemented to involve the respondents into a self- reflective assessment of their CTs' use. They provide data about the use of CTs in the class and how good the participants are at judging and classifying themselves as deep, accurate, clear and open-minded thinkers .Further, a question used in this part seeks to collect data about

the practices of CT ; how it's applied in the classroom mainly methodology and writing classes, and also what activities the respondents prefer to have in order to develop their CT skills.

Part 4 focuses on the activities adopted by the teachers in their classes, which intend to foster learners' CT Skills .It aimed at gathering data about assessment strategies and activities used by the participants; the questions intended to present data about the assessment process itself; then to define and present data about peer assessment as a collaborative activity and how it's helpful for them to fulfill many learning objectives. Also questions intended to shed light on the second type of assessment, self-assessment, and demonstrate its cognitive steps and its benefits for self-awareness and self-critical thinking.

Part 5 aims to evaluate the effectiveness of using the CLAR, and to link the research objectives with achieved realizations through the rubric. Questions are used to examine the benefits of the Rubric discovered by the participants regarding collaboration and self-reflection to improve CT Skills specifically in LRs writing. Questions in this part seek to evaluate the effectiveness of the CLAR , and further to elicit further researches about CT development and to recommend other instructional tools for further investigation in the future. (See Appendix E)

3.9 Development of the Rubric CLAR

Yan et al. argued that "We need to ensure that material evaluation establishes procedures which are thorough, rigorous, systematic and principled" [Yan and Brown, 2017].

The procedures of constructing and validating the CLAR in this study were adapted from the aggregation of various sources on designing and validating rubrics [Dawson, 2017, Cargas et al., 2017]. The process was recursive; while working at one step, the earlier step was revisited in order to refine the rubric. It is generally agreed that cognitive skills are the core component of CT.

Bloom's Taxonomy of Educational Objectives explained in the two previous chapters [Forehand, 2017] serves as one basis for understanding the order of thinking ability. After its emergence in 1956, the Bloom's taxonomy has been reinterpreted in several ways resulting in the development of other taxonomies such as Marzano's model [Marzano and Toth, 2013] which extends the original taxonomy to eight (focusing, information gathering, remembering, organizing, analyzing, generating, integrating and evaluating).

There exist other critical thinking taxonomies, as the one produced by Cambridge Assessment personnel and four critical thinking experts [Hahn et al., 2018]. The taxonomy comprises five skills: analysis, evaluation, inference, synthesis/construction, and self-reflection and self-correction. Another well-adopted CT taxonomy is developed by Horn [Horn et al., 2017].

Horn had refined his list of critical thinking skills based on the critiques and his own experience working with the skills and sub-skills. Beginning with the first version of 1987, he improved the list to the most recent in 1991 which involved four clusters: clarification, decision, inference, supposition and integration.

The rubric CLAR is developed based on the most recently used taxonomy in research, that is [Marzano and Toth, 2013, Wilson, 2016, Horn et al., 2017,

Hahn et al., 2018]. The skills which were suitable to academic writing were measurable and selected for inclusion in the rubric. They are: Remembering, Understanding, Application, Analysis, Evaluation and Creation skills together with their sub-skills that are relevant to academic writing:

1. To remember
    - paraphrasing using your own words
    - identifying an author's purpose, topic or opinion
2. To understand
    - specify the weakness or problem/s
    - distinguishing the general idea from details
    - explaining meaning
3. To apply
    - using the correct citation techniques
    - using correct grammatical rule
    - using correct argument with illustrations
4. To analyze
    - classifying arguments, knowledge or perspectives
    - decomposing problem and arguments for critical evaluation
    - presenting arguments cohesively and coherently

- identifying implicit assumptions

5. To evaluate

   - judging arguments and their sufficiency
   - judging credibility of sources
   - judging choice of arguments

6. To create

   - generating new insights from different perspectives
   - drawing conclusions
   - justifying own position

3.9.1 Components of the Rubric

Rubrics basically consist of the three elements:

1. criteria that demonstrate the areas for evaluation
2. scales which demonstrate the level of achievement
3. benchmark descriptors that demonstrate the standards

Criteria: Based on the most recently adopted and used taxonomy and the writing Module objectives, a preliminary list of six cognitive processes was established to measure the CT construct in LRs writing. They involve remembering, understanding, application, analysis, evaluation and creation. As well as, the sub-skills which formed the criteria for assessment in the CLAR.

Scales: Critical and Integrative Thinking Rubric is adopted for this study, which is a six-point rubric called as a scale of emerging, developing and mastering used largely by the Washington State University (WSU) since 2006 was preferred as it "provides a more educative and nuanced approach than a dualistic system (poor to excellent) can offer" (Center for Teaching, Learning and Technology at Washington State University). The term emerging indicates primary progress in learning while mastering demonstrates progress approaching the targeted level of achievement. The terms in this scale are more positive and it was specifically designed to ESL learners (English as a Second Language) and ESOL (English for Speakers of Other Languages) students' use. Later, in 2008 Communication was added as a new criterion though they are not conventionally considered a part of critical thinking. While using the Critical Thinking Rubric to assess student work, WSU and others found that skills used in communication impacted their perception of the work and the extent to which CT was effectively expressed. This new dimension captures those dimensions.

Figure 3.3 – Critical thinking dimensions

1. Identifies, summarizes (and appropriately reformulates) the problem/ question/ work assignment. This dimension focuses on task or issue identification, including subsidiary, embedded, or implicit aspects of an issue and the relationships integral to effective analysis.

2. Identifies and considers the influence of context and assumptions. This dimension focuses on scope and context, and considers the audience of the analysis. Context includes recognition of the relative nature of context and assumptions, the reflective challenges in addressing this complexity and bias, including the way ethics are shaped by context and shape assumptions.

3. Develops, and communicates own perspective, hypothesis or position. This dimension focuses on ownership of an issue, indicated by the justification and advancement of an original view or hypothesis, recognition of own bias, and skill at qualifying or integrating contrary views or interpretations.

4. Presents, assesses, and analyzes appropriate supporting data/evidence. This dimension focuses on evidence of search, selection, and source evaluation skills– including accuracy, relevance and completeness. High scores provide evidence of bias recognition, causality, and effective organization.

5. Integrates issue using other (disciplinary) perspectives and positions. This dimension focuses on the treatment of diverse perspectives, effective interpretation and integration of contrary views and evidence through the reflective and nuanced judgment and justification.

6. Identifies and assesses conclusions, implications, and consequences. This dimension focuses on integrating previous dimensions and extending them as they explicitly and implicitly resolve in consequences. Well-developed conclusions do more than summarize. They establish new directions for consideration in light of context and the breadth and depth of the evidence.

7. Communicates effectively. This dimension focuses on the presentation. If written, it is organized effectively, cited correctly; the language use is clear and effective, errors are minimal, and the style and format are appropriate for the audience.

Benchmark Descriptors In the CLAR the descriptors were identified together in the criteria in order to make it more economical, precise and concise and more importantly, less tiring for the participants to use.

3.9.2 Reliability and Validity of the CLAR

Reliability refers to the consistency of rubric scores. Furthermore, a test or rubric is reliable only if it gives the same results in different situations and used by different people, i.e., using different forms of a test which try to measure the similar skills and using the same technique of testing, with equal length and degree of difficulty, the test is then reliable [González et al., 2017].

The test reliability can be affected by different factors, such as the appropriateness of the sampling tasks, low student motivation, test formats, content of the questions and time allotted to test takers. Most importantly, the reliable test must have clear instructions and avoid general items as Gonzalez claimed "poorly written test items that are ambiguous may be a further source of test unreliability" [González et al., 2017]. Furthermore, he stated that "a careful specification of an analytical scoring instrument can increase rater reliability". Ratings and raters are implied to refer to the decisions and those who make them. However, the subjectivity may occur in the scoring process, and hence will affect test reliability .It is confirmed by Hessels "in the case of subjectively scored tests such as composition, the biggest barrier to reliable

assessment is the inconsistency of the score" [Hessels, 2019].

Additionally, another aspect that affects most the importance of The CLAR is validity. A tool or a test is said to be valid if it really measures what it is intended to measure. According to Schunn, validity is the "appropriateness of a given test or any of its component part as a measure of what it is purported tome a sure" [Schunn et al., 2016]. Validity refers to the appropriateness and usefulness of the particular implications made from test scores. Astawa defined validity as "an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores" [Astawa et al., 2017].

Teachers have to consider that a valid rubric should assess what has been taught in writing. Moreover, different procedures can be applied to a rubric to judge its validity. Such techniques try to determine what and how the test assesses the writing compositions. Additionally, several types of validity have been identified, each of which presents a little different opinion on collecting and interpreting data. The most important are presented by Hatala [Hatala and Cook, 2019] in Table 3.1.

Hatala describes the link between reliability and validity saying that "reliability is an essential consideration in testing and is a prerequisite for test validity" [Hatala and Cook, 2019]. The two factors are interrelated since "reliability is the agreement between two efforts to measure the same trait through maximally similar methods. Validity is represented in the agreement between two attempts to measure the same trait through maximally different methods". These two qualities are complementary to each other, and most importantly "a test cannot be valid unless it is reliable,

Table 3.1 – Main Types of Validity

Face Validity	The extent to which a test seems valid by test takers or untrained observers
Content Validity	Whether the test adequately represents the content of the target area
Criterion Validity	How far the test results match those from other tests or writing tasks
Construct Validity	The extent to which an assessment measures particular writing abilities
Consequential Validity	The effects of test scores on test takers and on subsequent teaching

and it is quite possible for a test to be reliable but invalid" [Hatala and Cook, 2019].

The objective of the CLAR is to develop CT in Students while writing LRs. Having identified the assessment purpose and sub -objectives, the score criteria for each objective were developed. Then the researcher questions whether the scoring criteria provided the measurement of all the objectives. Checking the criteria in this manner provides evidence to support the validity of the rubric, that is, if it measures what it is intended to measure. Moskal and Leydens comment that " The three above (i.e. content-related, construct-related and criterion-related validity) are the most common types of validity of an assessment instrument" [Moskal and Leydens, 2000]. Therefore, they provide questions to guide the examination of each type of validity evidence of a rubric as following:

Criterion

1. How do the scoring criteria reflect competencies that would suggest success on future or related performances?

2. What are the important components of the future or related performance that may be evaluated through the use of the assessment instrument?

3. How do the scoring criteria measure the important components of the future or related performance?

4. Are there any facets of the future or related performance that are not reflected in the scoring criteria?

Construct

1. Are all of the important facets of the intended construct evaluated through the scoring criteria?

2. Is any of the evaluation criteria irrelevant to the construct of interest?

Content

1. Do the evaluation criteria address any extraneous content?

2. Do the evaluation criteria of the scoring rubric address all aspects of the intended content?

3. Is there any content addressed in the task that should be evaluated through the rubric, but is not?

For this study, all the three evidence types of validity were investigated. An assessment instrument is considered content valid when it contains adequate samples of the content domain and the students' responses reflect the specific intended content of data [Moskal and Leydens, 2000]. The examination also indicates that the CLAR is face valid as it looks like it measures what it is intended to measure. The validity and reliability of the CLAR were established through experts (A teacher of methodology, a teacher of writing and a teacher of literature), because knowledgeable experts help to validate content of an assessment by systematically reviewing and verifying the match between the assessment operations-the content of items or tasks- their structure and format, and the conditions under which the assessment is administered and scored) with its domain and the theoretical underpinnings. This included investigating some questions suggested by Hatala [Hatala and Cook, 2019] and check whether:

- The rubric items covered all the skills to measure the intended construct i.e. the critical thinking skills for LRs writing.
- The levels were simple to distinguish from good to weak performance.
- There was an reliable number of levels.
- The descriptors were appropriate and clear.
- High scores were consistent with good achievement and the low scores with poor achievement.

3.9.3 The CLAR Rubric

The scoring rubric was named Critical thinking for LRs writing Analytical Rubric (CLAR). It was based on models of critical thinking skills relevant to LRs writing from the literature. The rubric was reviewed for face and content validity by experts in the field (Six teachers of Methodology, Writing and Literature). It was also pilot-tested before it was administered in a pre- study in writing course aimed to help develop undergraduate students' writing skills, and it was proved to be very useful. (see Appendix A)

Though the CLAR seems to be long and contains many details yet according to the researcher, she considers that is necessary to include all details to make the rubric clearer and easier for every student to understand and reply. At this point, the researcher was confident that the rubric contains reasonable clarity which makes it easy to reply by students.

3.10 Steps of the Study

In order to foster critical thinking in Master students while they write LRs, two homogenous groups were first identified as a Control Group of Masters that is composed of 60 participants whereas the Experimental Group of Masters includes 60 participants who are trained to use both methods of assessment Self and peer in addition to the CLAR Rubric . Then, the instructors should ensure that all the participants are confident about the use of the treatments in their classes.

The study was then started at the beginning of the second half of the first semester

with two pre-tests; A written LR followed immediately by a questionnaire basically probing how all the students in both perceived the writing and assessment activities as important for assisting their learning. These pretests were immediately followed by the intervention; while the researcher observed the activities carried out in both classes to collect data on important aspects influencing the improvements of the learning activities. Towards the end of the semester, after the term paper final drafts had been submitted, the post-tests using the same tools used in the pre-tests were administered. A semi-structured interview was then conducted with both the instructors and students. After that, the researcher moves to analyzing the obtained data using PSPP.

3.11 Ethics

There arise several ethical implications or guidelines from the research design involved with this thesis. Aims of ethical guidelines are to protect both participants and the researcher. Such guidelines are anonymity of the participants, data security and protection, freedom of answer and the relationship between the researchers and the sample. For these reasons, participants will be handed an informative sheet covering the scope and the aim of the research in addition to the consent form (see appendix F) . Moreover, the data generated will be saved in external protected hard drive where access is permitted only for the researcher. The findings will be published with the consent of the participants after the fulfillement of the research.

3.12 Conclusion

This chapter sought to provide detailed description about the aim,the methods and the instruments used in this work. Specifically, it discussed the methods used, the sample of the study, the data analysis tools and the procedures of data collection including thourough description of the students' questionnaire and teachers' semi-structured interview in addition to the Critical and Integrative Thinking Rubric adopted in the current study. All the questions raised in this chapter are of different types open-ended,close-ended and auxiliary questions and they require the participants to express their opinions and attitudes towards the aspects of writing LRs on the basis of CT pedagogy. Finally, as a conclusion for this chapter and based on the aforementioned problematic, we shall present in the following chapters the main findings resulted from this investigation.

Chapter 4

Results and Data Analysis

Contents

4.1 Introduction

This chapter provides results of the data gathered from the classroom observation, semi-structured interviews and the questionnaire, It tries to highlight some findings in the view of the previous literature which may solve our research problems. It includes:

results regarding the preliminary tests, results regarding the LRs, results regarding the writing processes, and results regarding the hypotheses of the research in addition to a synthesis and discussion of the key findings from both qualitative and quantitative investigation.

4.2 Results Concerning the Preliminary Test

At the early beginning the researcher decides to check the level of the participants in writing in general, and in writing LRs in particular. Thus, she administers the Pre-test in a written form. The pre-test was an activity about writing on a definite topic and based on three papers previously studied and discussed with the teacher of research methodology. The students then are asked to write LRs of the three scientific articles. It was administered to both groups control and experimental groups. The participants' works-drafts are all gathered in a week to be corrected by their teacher in addition to another teacher of Methodology. In fact, both assessors agreed on the given remarks and they together discovered the common weaknesses in the students' LRs and gathered them into a table 4.1:

The weaknesses founded and grouped are better displayed in the Figure 4.1, which represents the number of weaknesses in the LRs written by all students in both control and experimental groups during the preliminary test. After the evaluation of the drafts (120 drafts) the researcher and their teacher discovered 8 common weaknesses that have the high frequency of happening more than 30 times .these weaknesses involve Inappropriate structure, Citation, Lack of analysis, Correctness of written language,

Table 4.1 – Students' Common Weaknesses

W1	Inappropriate structure
W2	Citation problems
W3	Lack of analysis
W4	Correctness of written language
W5	Problem in methodology understanding
W6	Lack of synthesis
W7	Lack of positioning
W8	Copy/paste from other sources

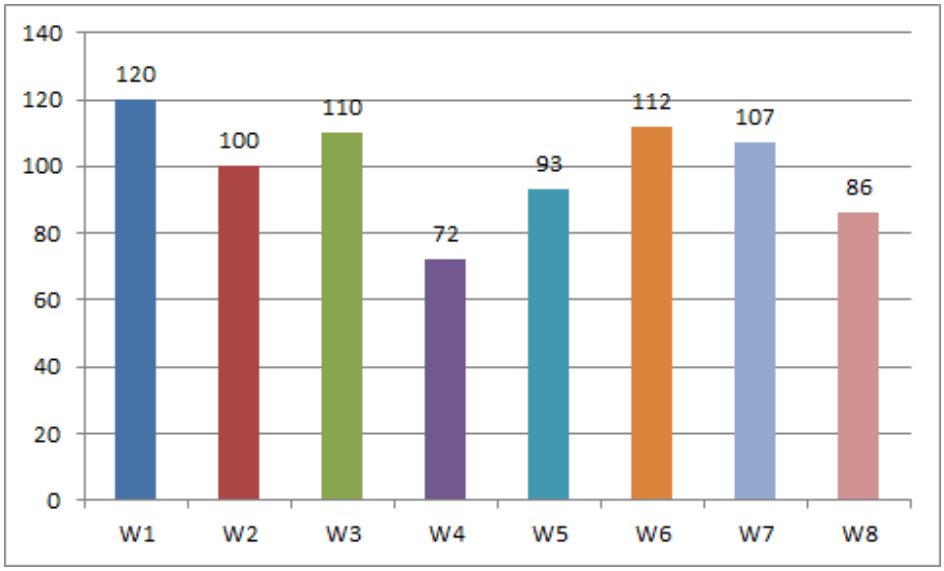

Figure 4.1 – Students' Weaknesses in the Pre-test

Problem in methodology, Lack of synthesis, Lack of positioning and Copy/paste problem... which were referred by W1,W2,W3,W4...W8. From the Figure 4.1, W1 for instance has occurred once at least in every LR .W5 also has occurred 93 times in 120

drafts; similarly W6 was found 112 times and W8 was found 86 times in the students' drafts. These weaknesses degrade and undervalue the master students' LRs and reduce their quality and significance for readers, teachers and correctors.

Furthermore, the researcher has questioned the Master students in a pre-test interview in order to discover their pre-requisites of writing, methodology and assessment for the aim of being compared later, moreover, to check whether these prerequisites can be developed or not; and at the same time the questionnaire will identify the areas of ignorance i.e. what the master students really lack in writing methodology, and more particularly in writing LRs; in addition to what treatments, activities or tools can solve and improve the students' problems and weaknesses.

4.3 Data Analysis

In the current section the researcher will analyze the data collected from the research questionnaire of the students and the semi-structured interviews with students and teachers.

4.3.1 Analysis of the pre-test Questionnaire

4.3.1.1 General Background Information

Q1. Gender

From the Figure 4.2 we notice that the females' number is more than males' number in this study. Later we will check whether gender will influence the students' CT skills or not. The females' number (80) is double males' number (40).

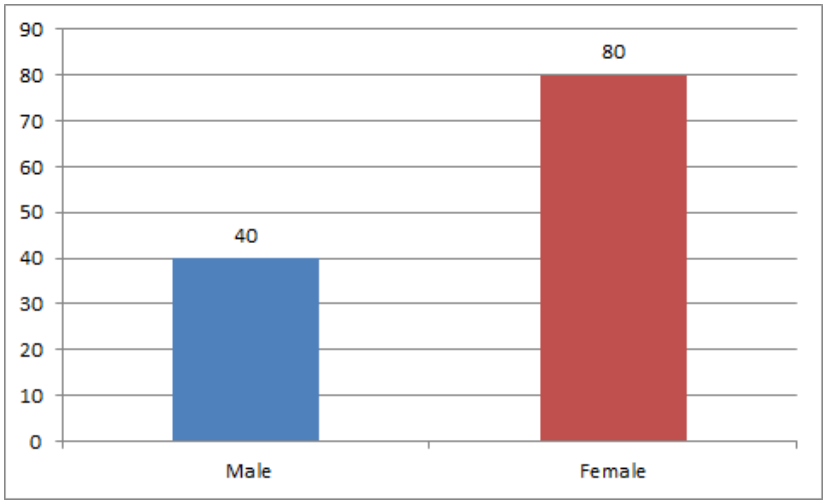

Figure 4.2 – Students' Gender

Table 4.2 – Students' Gender

Gender	Nbr of Students	Percentage
Male	40	33%
Female	80	67%
Total	120	100%

Q2. How old are you?

Table 4.3 – Students' Age

n°	Age	Students Nbr	Percentage	Mean	Standard deviation
1	18-25	66	55%	1.62	1.08
2	25-35	44	37%		
3	35-45	10	8%		
Total		120	100%		

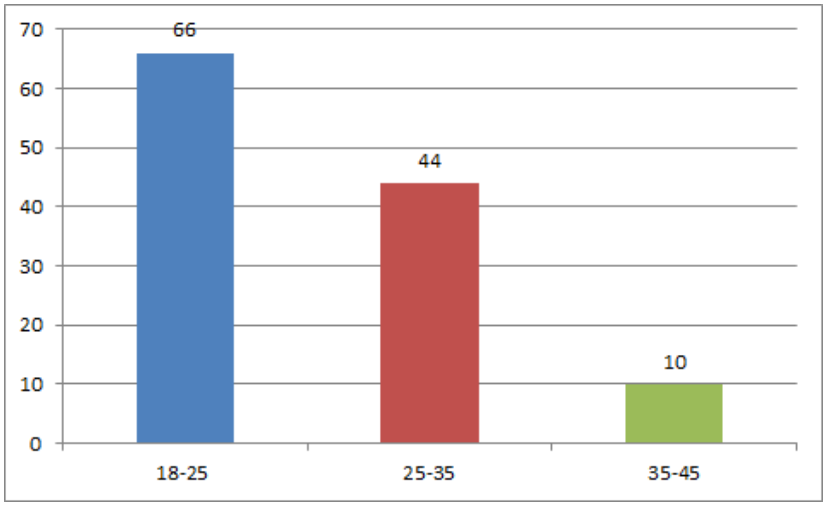

Figure 4.3 – Students' Age

Figure 4.3 represents the age of the students. They are of different ages. Yet the majority of them (66) with 55% are from 18 to 25 years old, (44) students who represents 37% are between 25 and 35 years old. And a minority (10) that represents 10% of them is from 35 to 45 Years old.

The mean statistically equals 1.62 which indicates that the majority of the students are better regrouped in the first category of age that is between 18 and 25 years old; also the distribution of the remaining students spread on the second category based on the equation Mean + Standard Deviation (1.62+1.08=2.70) where the result 2.70 refers to the second category of age from 25 to 35 years old.

Q3. Rate your writing ability in English?

In Table 4.4, the majority of the students (73) with 61% consider their level in writing acceptable. 20 of them with 17% consider their level good; 15 students consider very good. 7 students who represents 7% of the sample consider themselves poor and only 5 students consider their ability very poor in writing.

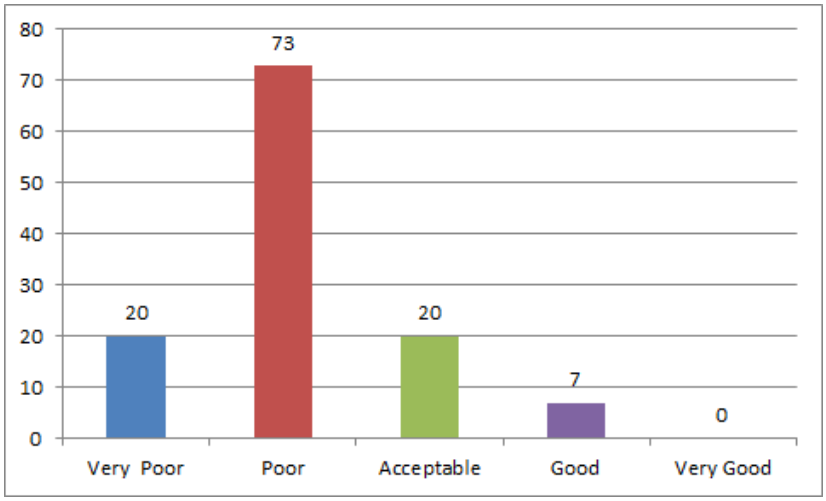

Figure 4.4 – Students' Rate of Their Writing Ability

Table 4.4 – Students' Rate of Their Writing Ability

n°	Rate	Students Nbr	Percentage	Mean	Standard deviation
1	Very Poor	20	17%	2.12	0.75
2	Poor	73	60%		
3	Acceptable	20	17%		
4	Good	7	6%		
5	Very Good	0	0%		
Total		120	100%		

Also the mean 2.12 reflects that the majority of the students consider themselves poor in writing and according to the obtained SD, the rest of the sample stand between the two levels very poor and acceptable only as better demonstrated in the equations (Mean-SD=2.12-0.75=1.37) where 1.37 represents the very poor level and (Mean +SD=2.12+0.75=2.82) where 2.82 represents the narrowing to the third rate

of writing ability that is acceptable.

4.3.1.2 Writing literature reviews

Q4. Have you written a literature review before?

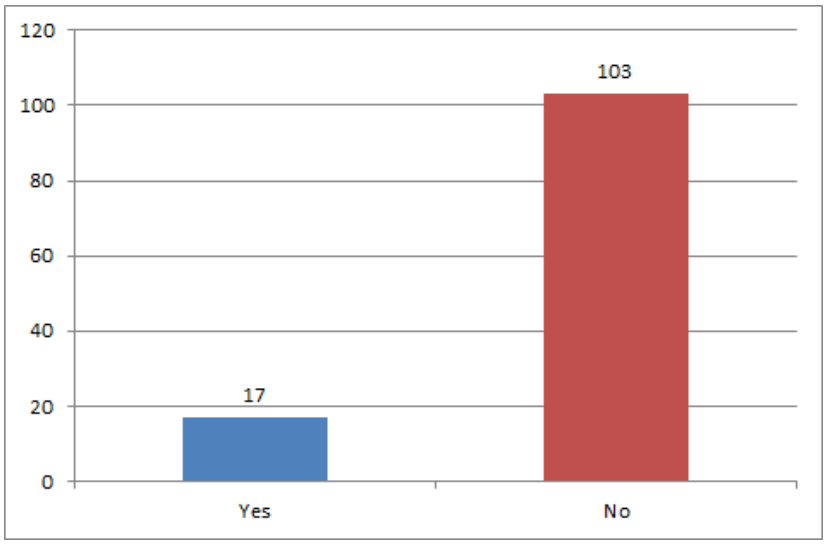

Figure 4.5 – Students' LRs Writing

Table 4.5 – Students' LRs Writing

n°	Answer	Students Nbr	Percentage	Mean	Standard deviation
1	Yes	17	14%	1.94	0.90
2	No	103	86%		
Total		120	100%		

In the Table 4.5 the majority of the students haven't written a LR before. 103 participants who represent 86% of the sample say "No" as they haven't written any LR, and just 14% (17 Students) of them replied saying "Yes" .

The results are statistically proved through the obtained Mean and SD.

Q5. Have you enjoyed writing LRs?

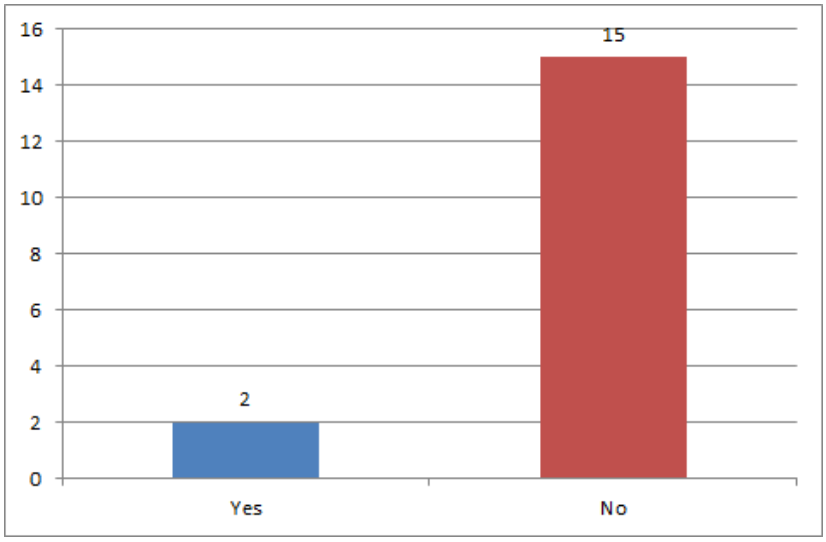

Figure 4.6 – Students' LRs Writing

Table 4.6 – Students' Enjoyment of LRs Writing

n°	Answer	Students Nbr	Percentage	Mean	Standard deviation
1	Yes	2	12%	1.88	0.33
2	No	15	88%		
Total		120	100%		

As Table 4.6 and Figure 4.6 demonstrated, the majority of the students did not enjoy writing LRs since (15) students who represent 88% of the sample replied negatively; however, only (2) students who represents 12% who enjoyed LRs writing.

Q6. What difficulties do you face when you are writing LRs?

The students faced several difficulties during their LRs writing process. Figure 4.7 illustrates the difficulties that they faced and which are measured in percentages. Overall, it can be seen that the majority of them (39%) ignore how to summarize

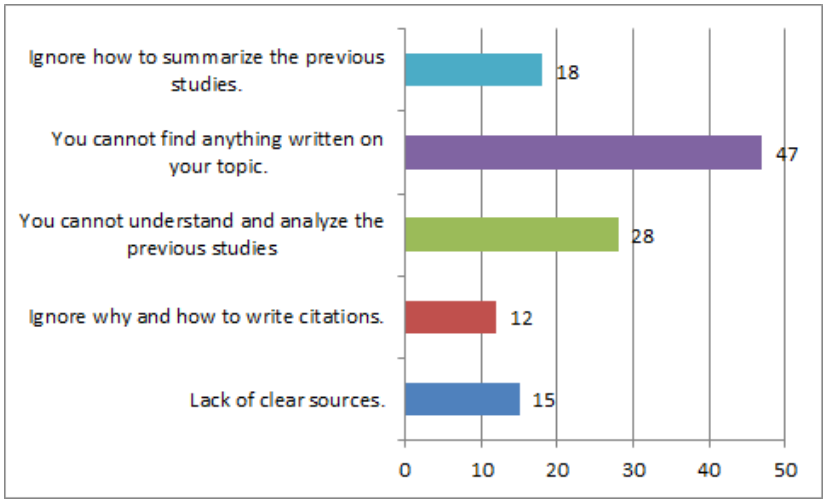

Figure 4.7 – Students' Difficulties While Writing LRs

Table 4.7 – Students' Difficulties While Writing LRs

n°	Answers	Nbr of Students	%	Mean	Standard deviation
1	Lack of clear sources.	15	13%	4.14	1.22
2	Ignore why and how to write citations.	12	10%		
3	You cannot find anything written on your topic	28	23%		
4	You cannot understand and analyze the previous studies	47	39%		
5	Ignore how to summarize the previous studies.	18	15%		
Total		120	100%		

previous studies. Another problem faced by 28 students (23%) who cannot understand and analyze the previous works. Also, 13% of the students claimed that they ignore why and how to write citations and references. Others (10%) said that they cannot find clear resources of data and a minority of the students (7%) cannot find written resources related to their research topics.

The Mean 4.14 explains that the majority of the sample suffers from problem 4 in the Table 4.7 and based on the obtained SD the rest of them suffer from challenges 3 and 5 respectively as shown in Table 4.7.

Q7- How often does your teacher encourage you to write a LR?

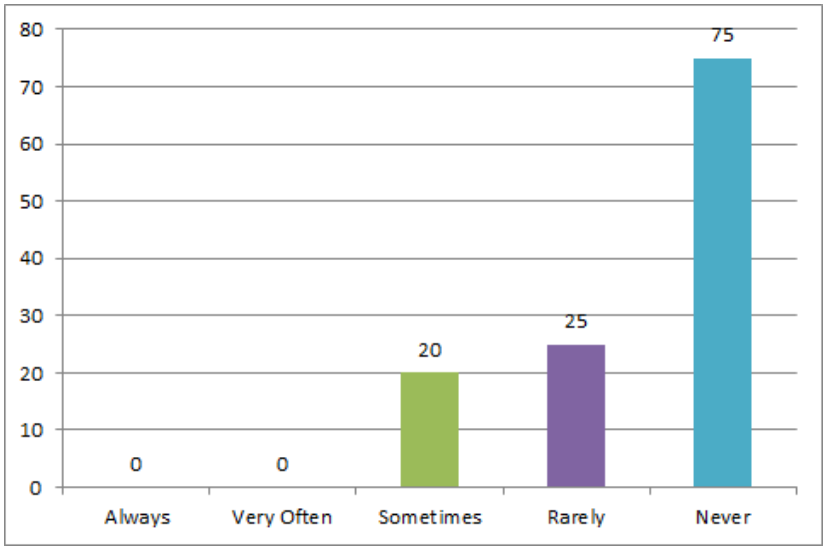

Figure 4.8 – How Often Students are encouraged to write LRs

As it can be seen in both the Table 4.8 and bar chart in Figure 4.8, the majority of the students (63%) said that their teachers never asked them to write LRs. Other students (21%) stated that they were rarely encouraged to write LRs. Yet, Another group of the students (17%) claimed that their teachers sometimes encouraged them to practice LRs writing.

Table 4.8 – How Often Students are encouraged to write LRs

n°	Rate	Nbr of Students	Percentage	Mean	Standard deviation
1	Always	0	0%	4.46	0.77
2	Very Often	0	0%		
3	Sometimes	20	17%		
4	Rarely	25	21%		
5	Never	75	63%		
Total		120	100%		

The majority of the students claimed that their teachers rarely and never encourage them to write LRs as proved statistically by the mean + SD (4.46+0.77=5.23) where 4 .46 refers to rarely and 5.23 refers to never in their answers.

4.3.1.3 Critical Thinking Skills

Q8. What does Critical Thinking mean to you?

Different definitions of CT are given by students as illustrated in Figure 4.9 and Table 4.9. It is clear that the majority of the students (28%) refer to CT as being able to differentiate between useful and useless details. However, (8%) consider CT as being open-minded and updated persons. (14%) claimed that CT skills entail drawing a conclusion from a set of information. (13%) defined CT as the ability to interpret graphs and figures. Some students (14%) refer to CT as being able to solve problems. Others(13%) define CT as the ability to make right decisions, and few students (13%) consider CT as being able to criticize others' works, behaviors and opinions.

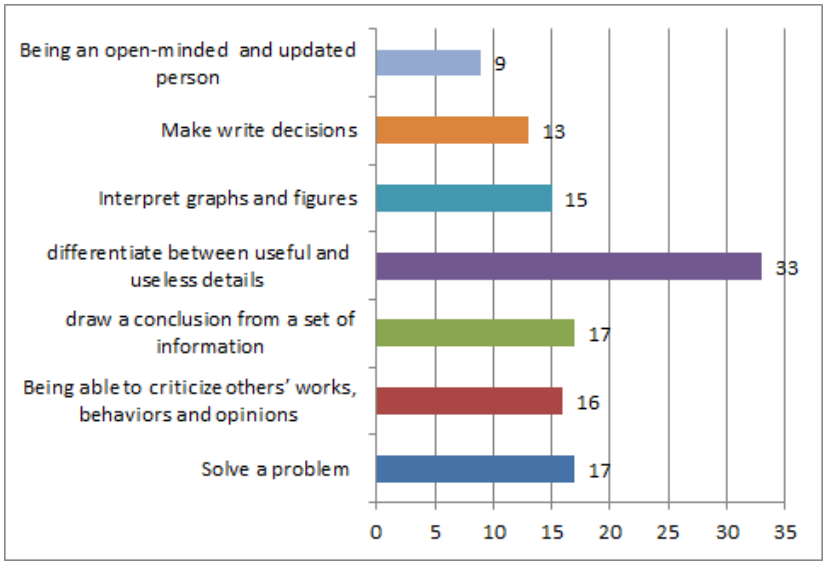

Figure 4.9 – Students' Definitions of CT

Through rounding decimals of the mean 3.74, it becomes 4 which refers to the definition number four in the Table 4.9. Moreover, the SD reflects that most students' answers were in number 3,4 and 5 in Table 4.9

Q9. How important is critical thinking to you?

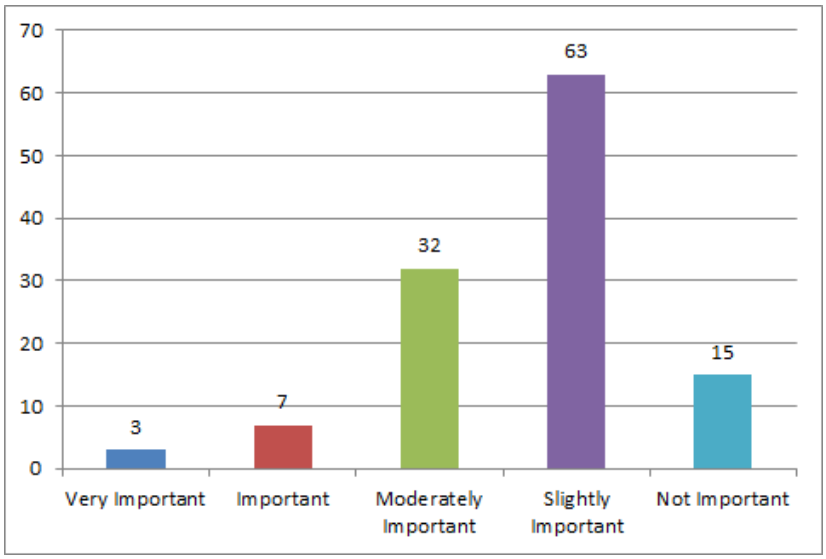

Figure 4.10 – Students' Rate of CT Importance

Table 4.9 – Students' Definitions of CT

n°	Rate	Nbr of Students	%	Mean	Standard deviation
1	Solve a problem	17	14%	3.74	1.78
2	Being able to criticize others' works, behaviors and opinions	16	13%		
3	draw a conclusion from a set of information	17	14%		
4	differentiate between useful and useless details	33	28%		
5	Interpret graphs and figures	15	13%		
6	Make write decisions	13	11%		
7	Being an open-minded and updated person	9	8%		
Total		120	100%		

As the Table 4.10 and the Figure 4.10 illustrate the majority of the students (85%) consider CT not important, and some of them (15%) claimed that CT is slightly important to them .Yet, only (5%) who consider CT moderately important for them.

The Mean statistically after rounding decimals proved that nearly all students consider CT slightly important. Yet the rest of students think that CT is moderately important and not important at all.

Q10. How would you rate your critical thinking ability?

Table 4.10 – Students' Rate of CT Importance

n°	Rate	Nbr of Students	Poucentage	Mean	Standard deviation
1	Very Important	3	3%	3.67	0.87
2	Important	7	6%		
3	Moderately Important	32	27%		
4	Slightly Important	63	53%		
5	Not Important	15	13%		
Total		120	100%		

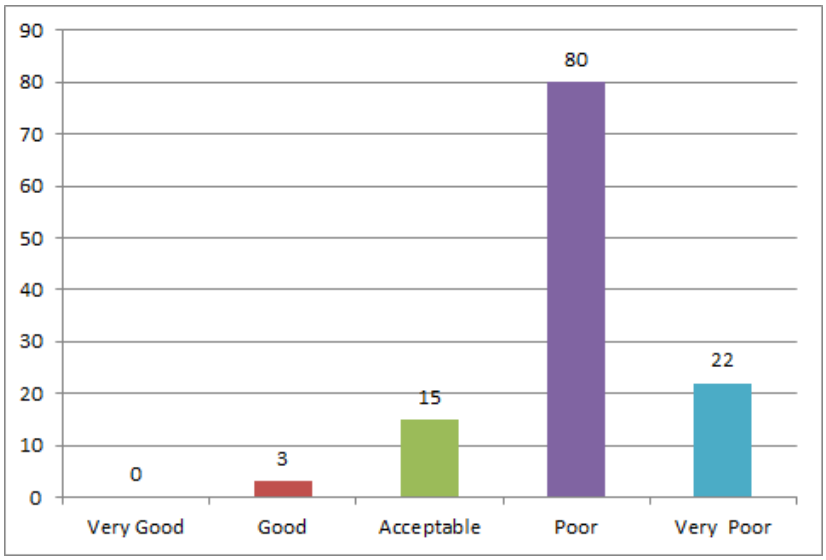

Figure 4.11 – Students' Rate of their CT

As illustrated in Table 4.11 and Figure 4.11, the majority of the students consider themselves poor in CT. Another group of students claimed that have a very poor ability in CT. Additionally; a few of them stated that they have an acceptable ability in CT.

The Mean 4 ensures that the majority of the students are poor in CT; however,

Table 4.11 – Students' Rate of their CT

n°	Rate	Nbr of Students	Percentage	Mean	Standard deviation
1	Very Good	3	3%	4.01	0.64
2	Good	12	10%		
3	Acceptable	41	34%		
4	Poor	57	48%		
5	Very Poor	7	6%		
Total		120	100%		

some of them consider themselves acceptable or very poor in CT based on the obtained SD 0.64.

Q11. How do you see/consider yourself?

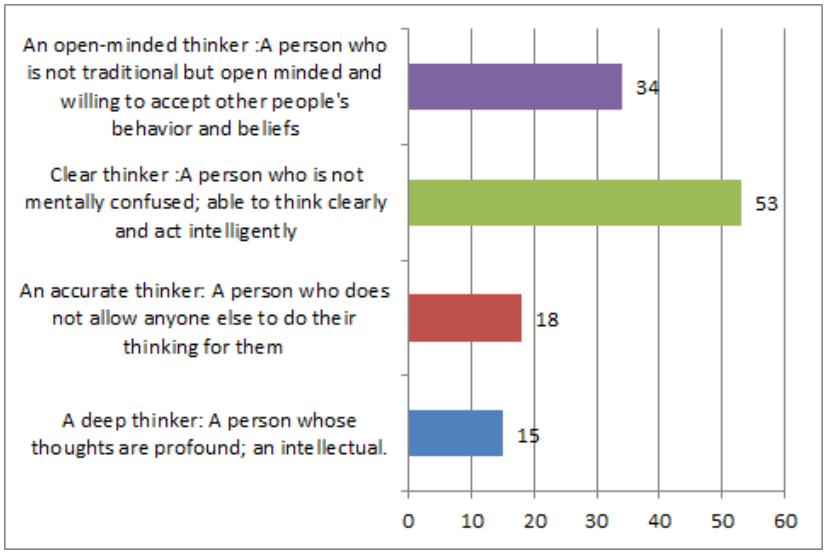

Figure 4.12 – Students' View of Themselves

As it can be seen in Table 4.12 and Figure 4.12 the majority of the students (44%)

Table 4.12 – Students' View of Themselves

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	A deep thinker: A person whose thoughts are profound; an intellectual	15	13%	2.89	0.95
2	An accurate thinker: A person who does not allow anyone else to do their thinking for them	18	15%		
3	Clear thinker :A person who is not mentally confused; able to think clearly and act intelligently	53	44%		
4	An open-minded thinker :A person who is not traditional but open minded and willing to accept other people's behavior and beliefs	34	28%		
Total		120	100%		

consider themselves open-minded thinkers, however, (44%) of the students said that they are Clear Thinkers. As it's proved by the Mean value.

4.3.1.4 Self and Peer Assessment

Q12. How effective/important is assessment process in your class?

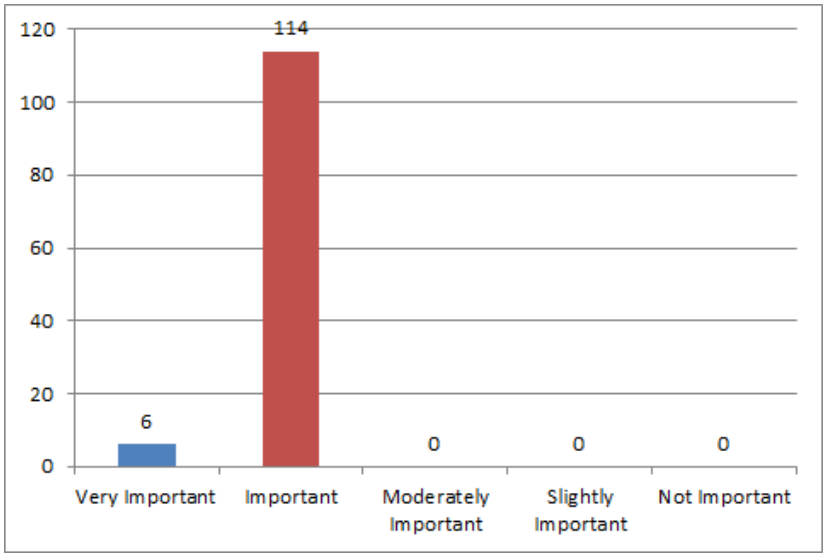

Figure 4.13 – Assessment's Importance for the Students

Table 4.13 – Assessment's Importance for the Students

n°	Rate	Nbr of Students	Percentage	Mean	Standard deviation
1	Very Important	6	5%	1.95	0.22
2	Important	114	95%		
3	Moderately Important	0	0%		
4	Slightly Important	0	0%		
5	Not Important	0	0%		
Total		120	100%		

Table 4.13 and Figure 4.13 demonstrated that nearly all students 95% consider

assessment process important and 5% of the students claimed that assessment is very important for them.

The Mean with SD demonstrate that the majority of the students consider assessment process important.

Q13. How often did your teacher involve you in the assessment of writing?

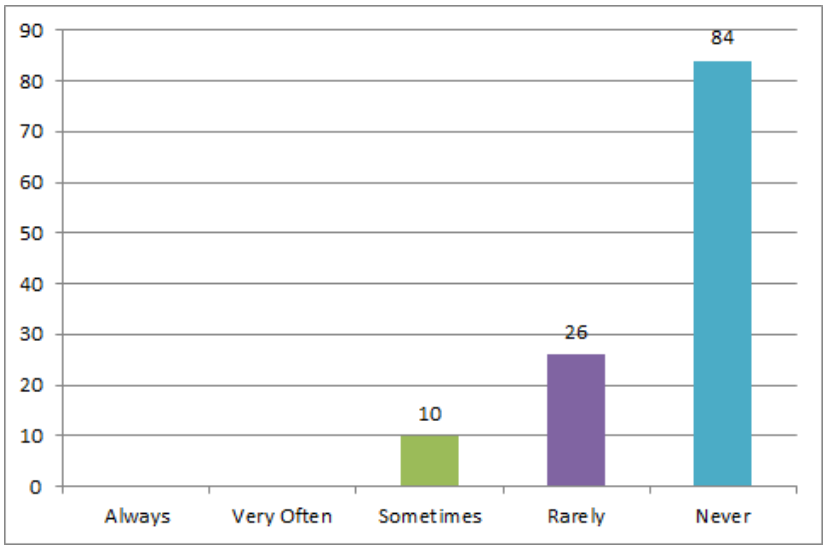

Figure 4.14 – Students' Involvement in their Assessment

In Table 4.14 and Figure 4.14 the majority of the students (70%) stated that their teachers never include them in the assessment process; while some of them (22%) said that their teachers rarely involve them while assessing their works. Yet, only (8%) stated that their teachers sometimes involve them in the assessment process.

The obtained Mean and SD after rounding decimals reflects that the majority of the students are rarely involved in the assessment operation.

Table 4.14 – Students' Involvement in their Assessment

n°	Rate	Nbr of Students	Percentage	Mean	Standard deviation
1	Always	0	0%	4.62	0.64
2	Very Often	0	0%		
3	Sometimes	10	8%		
4	Rarely	26	22%		
5	Never	84	70%		
Total		120	100%		

4.3.2 Analysis of the Posttest Questionnaire

Q1. Rate your writing ability in English?

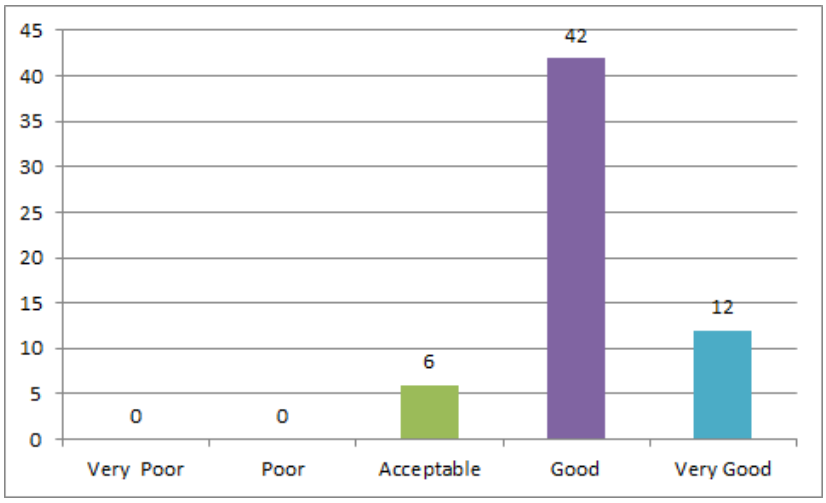

Figure 4.15 – Students' Rate of Their Writing Ability

As illustrated in Figure 4.15, the majority of students (70%) consider themselves good in writing.Others (20%) claimed that they have a very good ability in writing. In

Table 4.15 – Students' Rate of Their Writing Ability

n°	Rate	Students Nbr	Percentage	Mean	Standard deviation
1	Very Poor	0	0%	4.10	0.54
2	Poor	0	0%		
3	Acceptable	6	10%		
4	Good	42	70%		
5	Very Good	12	20%		
Total		60	100%		

addition, the remaining students only (10%) rate their writing ability as acceptable.

The Mean equals 4 which mean the majority of students become good in writing. The SD demonstrates that the rest are also acceptable in writing.

Q2. Which critical steps you usually follow to write a literature review?

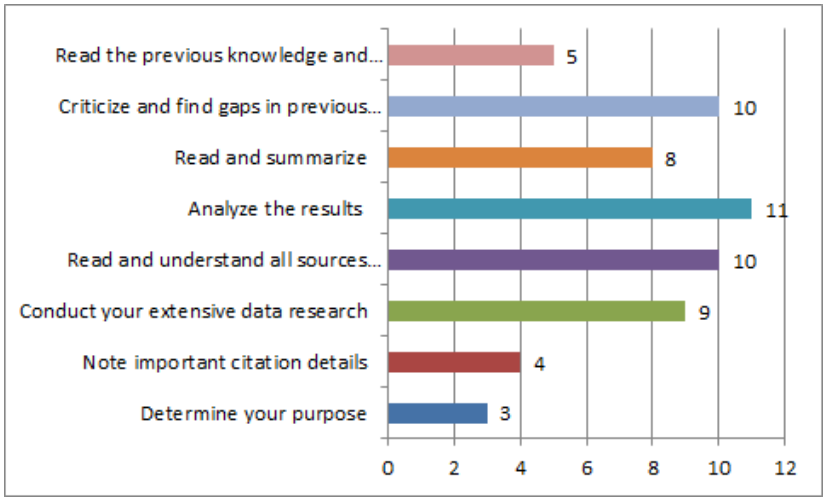

Figure 4.16 – Students' Critical Steps to Write LRs

Figure 4.16 demonstrated the different critical steps to write LRs. As it can be

Table 4.16 – Students' Critical Steps to Write LRs

n°	Rate	Students Nbr	Percentage	Mean	Standard deviation
1	Determine your purpose	3	5%	4,85	1,94
2	Note important citation details	4	7%		
3	Conduct your extensive data research	9	15%		
4	Read and understand all sources carefully	10	17%		
5	Analyze the results of the previous studies	11	18%		
6	Read and summarize	8	13%		
7	Criticize and find gaps in previous studies	10	17%		
8	Read the previous knowledge and report all what you find	5	8%		
Total		60	100%		

seen (18%) of the students analyze the results of the previous works.(17%) of them prefer reading and understanding all resources. Also, (17%) of them prefer criticizing and finding gaps in previous studies. (15%) of them prefer to conduct extensive data research. Other students (13%) read then summarize data. (8%) of them prefer reading and reporting all what they found. Additionally,(8%) of them focus on important

citation details, and only (5%) of them who prefer to determine their purpose in order to write a LR.

The Mean shows that the majority of students analyze results of previous studies in order to write their LRs. The SD shows that the rest of the sample read, understand and summarize the resources to write LRs.

Q3.Why do you write LRs ?

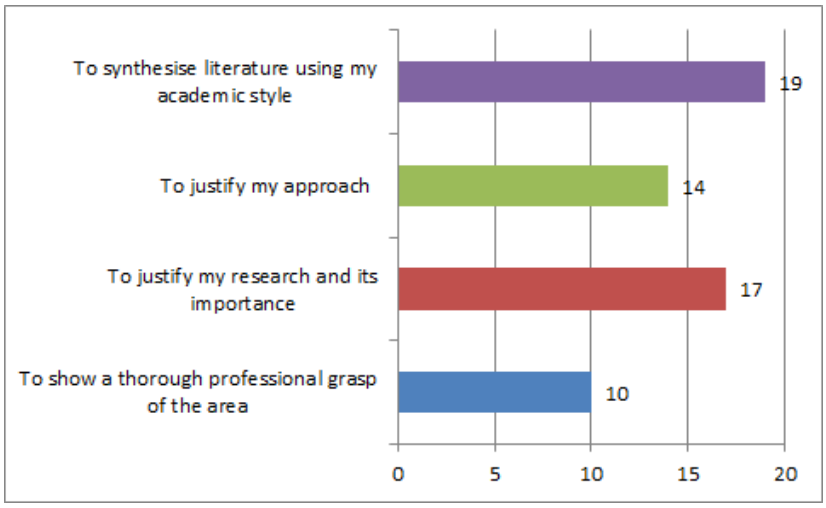

Figure 4.17 – Students' Reasons of Writing LRs

As for the students' reasons behind writing LRs demonstrated in Figure 4.17, the majority (32%) of the students' reason is to synthesize literature using their academic styles. Other students' reason (28%) is to justify their own research and their importance; (23%) of the students write LRs to justify their approaches, and the remaining (17%) of the students write LRs to show a thorough professional grasp of the area of research.

The correlation between the Mean and the SD values shows that the majority of students write LRs to justify their research and its importance.

Table 4.17 – Students' Reasons of Writing LRs

n°	Answers	Students Nbr	Percentage	Mean	Standard deviation
1	To show a thorough professional grasp of the area	10	17%	3.25	1.56
2	To justify my research and its importance	17	28%		
3	To justify my approach	14	23%		
4	To synthesise literature using my academic style	19	32%		
Total		60	100%		

4.3.2.1 Critical Thinking Skills

Q4. What does CT mean to you?

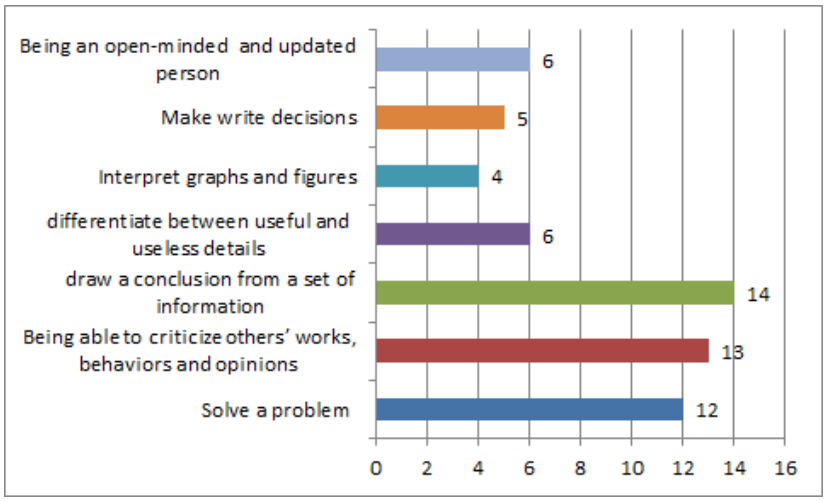

Figure 4.18 – Students' Definitions of CT

Table 4.18 – Students' Definitions of CT

n°	Rate	Nbr of Students	%	Mean	Standard deviation
1	Solve a problem	12	20%	3.27	1.93
2	Being able to criticize others' works, behaviors and opinions	13	22%		
3	draw a conclusion from a set of information	13	22%		
4	differentiate between useful and useless details	7	12%		
5	Interpret graphs and figures	4	7%		
6	Make write decisions	5	8%		
7	Being an open-minded and updated person	6	10%		
Total		60	100%		

As the Figure 4.18 illustrated different definitions of CT. At first (22%) of the students define CT as being able to criticize others' works, behaviors and opinions. Others also (22%) define CT as being able to draw conclusions from a set of information. Some students (20%) define CT as a problem solving strategy.(12%) of the them define CT as being able to differentiate between useful and useless details. Other (10%) of them consider CT a being an open-minded and updated person. (8%) of them define CT as making right decisions. Only a minority of students (7%) who define CT as being able

to interpret graphs and figures.

Q5. How important is critical thinking to you?

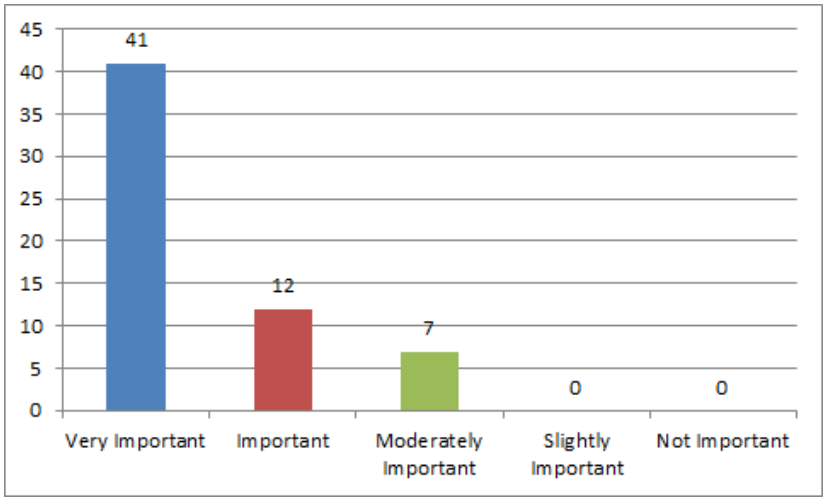

Figure 4.19 – Students' Rate of CT Importance

Table 4.19 – Students' Rate of CT Importance

n°	Rate	Nbr of Students	Poucentage	Mean	Standard deviation
1	Very Important	41	34%	1.43	0.70
2	Important	12	10%		
3	Moderately Important	7	6%		
4	Slightly Important	0	0%		
5	Not Important	0	0%		
Total		60	100%		

Figure 4.19 illustrated How important is CT for the students. The majority of them are aware of its importance as (34%) of them claimed that it is very important

to them; also (10%) of them said that CT is important to them .Yet, the only remaining students (6%) stated that it is moderately important to them.

The Mean 1.43 reflects that nearly all the students find CT very important.

Q6. How would you rate your critical thinking ability?

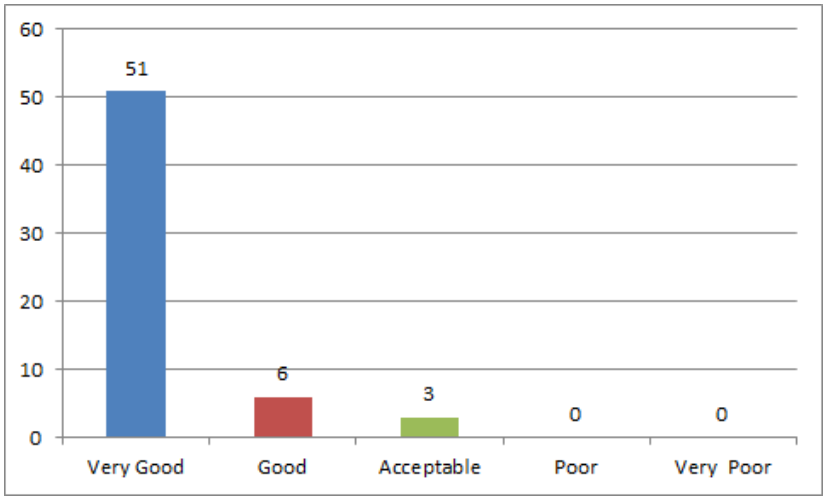

Figure 4.20 – Students' Rate of their CT

Table 4.20 – Students' Rate of their CT

n°	Rate	Nbr of Students	Percentage	Mean	Standard deviation
1	Very Good	51	43%	1.17	0.49
2	Good	6	5%		
3	Acceptable	3	3%		
4	Poor	0	0%		
5	Very Poor	0	0%		
Total		60	100%		

From Figure 4.20 it can be seen that the majority of the students (43%) claimed that they have a very good ability in CT. Also, some students said that they have a good ability in CT. However, a small group of students (3%) stated that they have an acceptable CT ability.

The Mean value is 1.17 that means the majority of the students state that they have a very good CT ability. Even the SD confirms so.

Q7. How do you see/consider yourself?

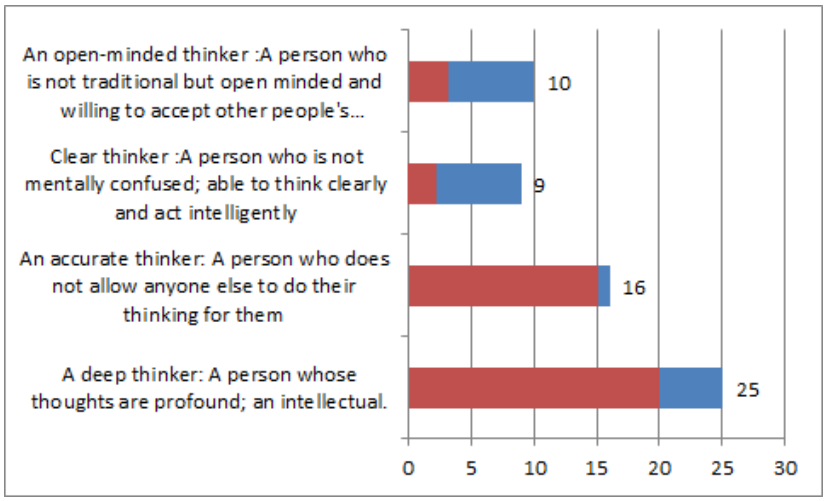

Figure 4.21 – Students' View of Themselves

Figure 4.21 and Table 4.21 illustrated that the majority of students (41%) consider themselves deep thinkers. Whereas (28%) of them claimed that they are accurate thinkers, and few students (13%) consider themselves Clear thinkers.

Both the Mean and SD values ensure that the students have become deep and accurate thinkers. Surprisingly , Figure4.21 has demonstrated that the majority of those who have become deep and accurate thinkers are female students. In the 41 participants who have improved their level in CT, 35 participants are females and 6

Table 4.21 – Students' View of Themselves

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	A deep thinker: A person whose thoughts are profound; an intellectual	25	41.67%	2.05	1.11
2	An accurate thinker: A person who does not allow anyone else to do their thinking for them	17	28.33%		
3	Clear thinker : A person who is not mentally confused; able to think clearly and act intelligently	8	13.33%		
4	An open-minded thinker :A person who is not traditional but open minded and willing to accept other people's behavior and beliefs	10	16.67%		
Total		60	100%		

males.

Q8. Which activities your teachers use, you think they develop your

critical thinking skills?

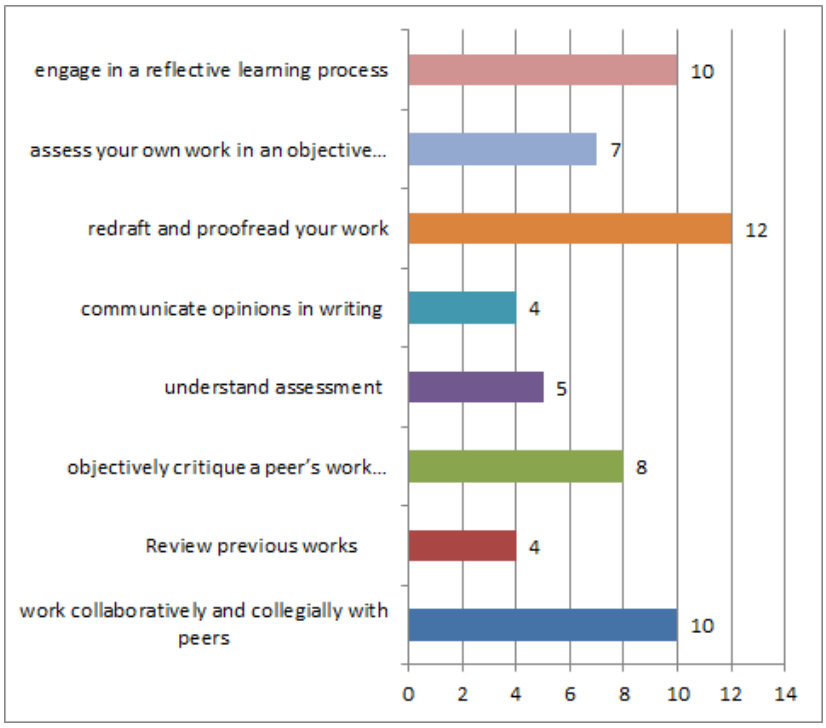

Figure 4.22 – Teachers' Activities to Develop CT

As Figure 4.22 demonstrated, (20%) of students stated that teachers often ask them to redraft and proofread their drafts. (17%) of them said that their teachers encourage them to work collaboratively and collegially to develop CT. Also (17%) of them said that their teachers engage them in a reflective learning process to foster CT. In addition, (13%) of them explained that their teachers ask them to objectively critique peers' works .While (12%) of them stated that they often ask them to review previous work to improve their CT skills. Others (8%) said that they insist on them to understand assessment operation in order to improve their CT skills.

The Mean and SD indicate that the majority of students stated that their teachers usually encourage them to communicate their opinions in writing and proof read their

Table 4.22 – Teachers' Activities to Develop CT

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	work collaboratively and collegially with peers	10	17%	4.72	2.46
2	Review previous works	4	7%		
3	objectively critique a peer's work...	8	13%		
4	understand assessment	5	8%		
5	communicate opinions in writing	4	7%		
6	redraft and proofread your work	12	20%		
7	assess your own work in an objective...	7	12%		
8	engage in a reflective learning process	10	17%		
Total		60	100%		

works.

Q9. What did you learn when assessing your peers' work?

As Table 4.23 and figure 4.23 demonstrated there are many advantages to peer-assessment the students have learned. As it can be seen the majority of students

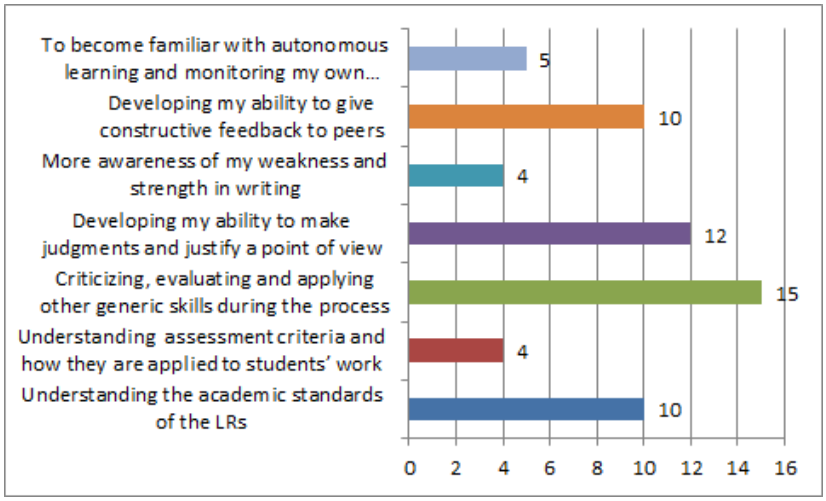

Figure 4.23 – Advantages of Peer-assessment

(25%) learned to criticize, evaluate and apply other generic skills during the process of peer-assessment. (20%) of the students also claimed that they learn how to develop their ability to make judgments and justify a point of view. In addition,(17%) of them learn to develop their ability to give constructive feedback to peers. Similarly, (17%) of them could Understand the academic standards of LRs. Another group of students (8%) said that they become familiar with autonomous learning and monitoring their own progress rather than rely on others to do it. 5 students who represent(7%) of the sample stated that they become more familiar with assessment criteria and how they are applied to students' work. Other students (7%) claimed that they become more aware of their weaknesses and strengths in writing.

The Mean value equals 3 reflects that the majority of students learn how to criticize , evaluate and apply other generic skills through assessing their peers' works.

Q10. What do you learn when you self-assess your work?

As it can be seen in Figure 4.24, the students have benefited a lot from self-

Table 4.23 – Advantages of Peer-assessment

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	Understanding the academic standards of the LRs	10	17%	3,77	1,65
2	Understanding assessment criteria and how they are applied to students' work	4	7%		
3	Criticizing, evaluating and applying other generic skills during the process	15	25%		
4	Developing my ability to make judgments and justify a point of view	12	20%		
5	More awareness of my weakness and strength in writing	4	7%		
6	Developing my ability to give constructive feedback to peers	10	17%		
7	To become familiar with autonomous learning and monitoring my own progress rather than rely on others to do it	5	8%		
Total		60	100%		

assessment. The majority of the students (25%) find it very useful as it promoted their understanding and increased quality and thoughtfulness on assignments. (18%)

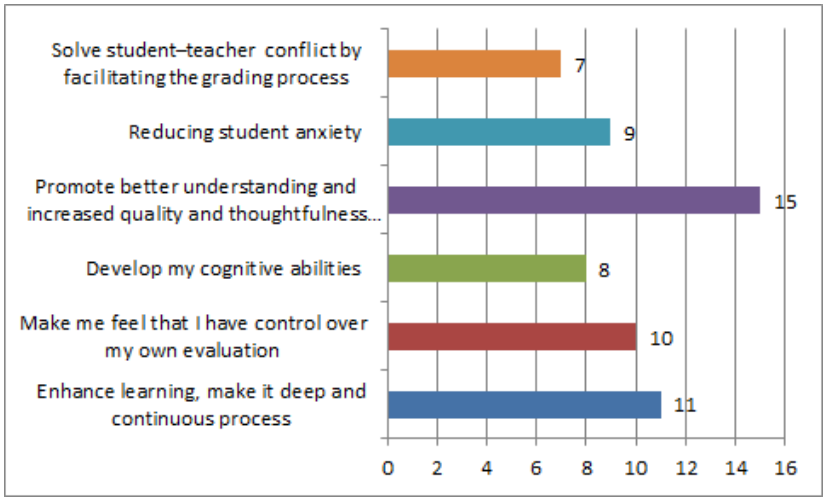

Figure 4.24 – Benefits of Self-assessment

of the students said that it enhanced learning, make it deep and continuous process. Also, (17%) of them claimed that self-assessment makes them feel that they have control over their own evaluation. In addition, (15%) stated that it helps them to reduce anxiety. (13%) of the students stated that self-assessment developed their cognitive abilities. Other students (12%) reported that the main benefit of self-assessment is to solve student-teacher conflict by facilitating the grading process.

The Mean and the SD indicate that the majority of the students can promote better understanding , increase quality and thoughtfulness and develop their cognitive abilities during self-assessment process .

Q11. How effective is Self-assessment in developing Critical thinking skills?

Table 4.25 Figure 4.25 demonstrated how effective self-assessment in developing CT is. All students agreed that it develops CT because of many reasons. The majority of the students (32%) stated that self-assessment allows them to see and reflect on their

Table 4.24 – Benefits of Self-assessment

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	Enhance learning, make it deep and continuous process	11	18%	3,37	1,65
2	Make me feel that I have control over my own evaluation	10	17%		
3	Develop my cognitive abilities	8	13%		
4	Promote better understanding and increased quality and thoughtfulness on assignments	15	25%		
5	Reducing student anxiety	9	15%		
6	Solve student-teacher conflict by facilitating the grading process	7	12%		
Total		60	100%		

contributions. In addition,(20%) of the students said that it encourages them to reflect on their role. Others (20%) claimed that it helps them to become more self-aware and self-critical, the fact that will improve their performance in any course. Moreover,

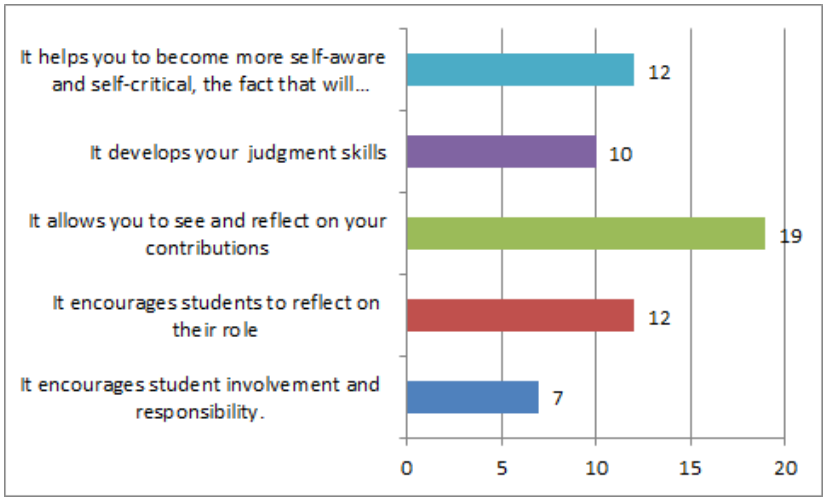

Figure 4.25 – The Effectiveness of Self-assessment in Developing CT

(17%) of the students told that self-assessment develops their judgment skills; and (12%) of the students added that it encourages their involvement and responsibility.

After rounding decimals, the Mean value is 3 which clarifies that self-assessment allows the majority of the students to see and reflect on their contributions. In addition, it develops the rest of the sample judgment skills and reflects on their roles.

4.3.2.2 Rating the effectiveness of the CLAR

Q12. How effective do you think the rubric is in the self and peer assessment?

As Figure 4.26 and Table 4.26 demonstrated the majority of the students (82%) consider CLAR very important in both self and peer assessment processes. As well as, (18%) of the sample consider the CLAR important in self and peer assessment.

The Mean and SD values determine that the majority of the students find the CLAR very important in self and peer assessment activities.

Table 4.25 – The Effectiveness of Self-assessment in Developing CT

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	It encourages student involvement and responsibility.	7	12%	3,13	1,28
2	It encourages students to reflect on their role	12	20%		
3	It allows you to see and reflect on your contributions	19	32%		
4	It develops your judgment skills	10	17%		
5	It helps you to become more self-aware and self-critical, the fact that will improve your performance in any course.	12	20%		
Total		60	100%		

Q13. How effective is the rubric for reflecting LRs writing?

As better displayed in Figure 4.27, the majority of the students (82%) claimed that the CLAR is very important because it reflects about LRs writing. Similarly (18%) of the students also said that they consider The CLAR important in reflecting about

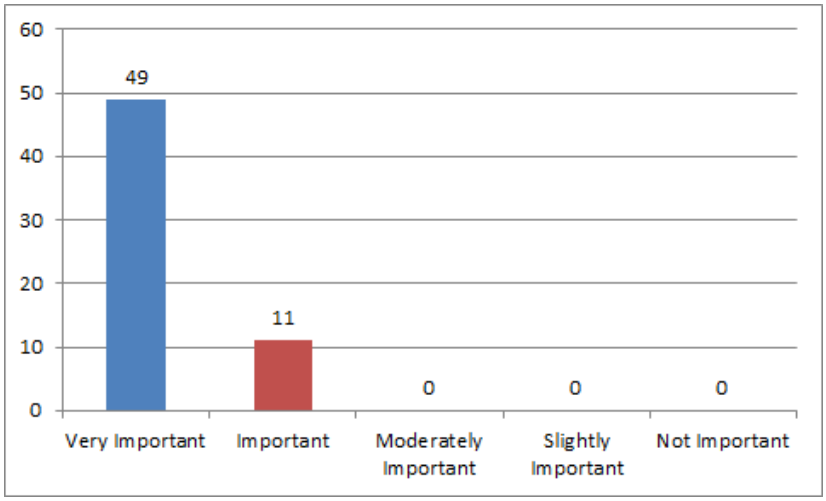

Figure 4.26 – The CLAR Importance in Self and Peer Assessment

Table 4.26 – The CLAR Importance in Self and Peer Assessment

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	Very Important	49	82%	1.18	0.39
2	Important	11	18%		
3	Moderately Important	0	0%		
4	Slightly Important	0	0%		
5	Not Important	0	0%		
Total		60	100%		

LRs Writing.

The Mean equals 1.15 which represents that The CLAR is very effective for the majority of the students in reflecting LRs writing.

Q14. How effective is the CLAR in Developing Critical thinking Skills?

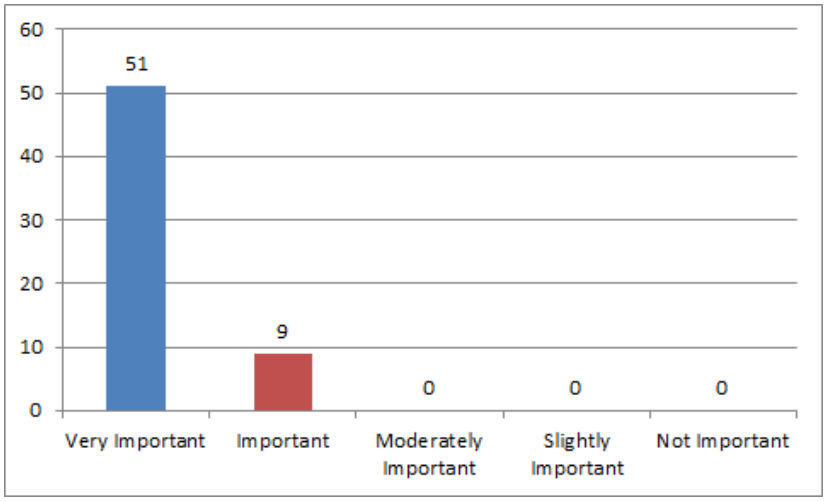

Figure 4.27 – The CLAR's Importance in Reflecting about LRs writing

Table 4.27 – The CLAR's Importance in Reflecting about LRs writing

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	Very Important	51	85%	1.15	0.36
2	Important	9	150%		
3	Moderately Important	0	0%		
4	Slightly Important	0	0%		
5	Not Important	0	0%		
Total		60	100%		

As Figure 4.28 and Table 4.28 exhibit all students agreed on the importance of The CLAR in developing CT, as the majority of them (62%) argued that it is very important to develop CT; also the remaining students(38%) stated that they find the CLAR important to develop their CT.

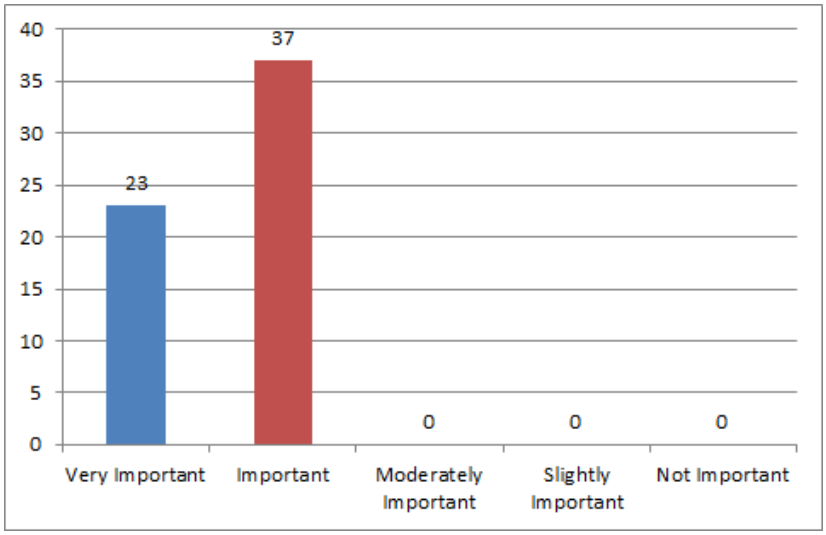

Figure 4.28 – The CLAR importance in Developing CT

Table 4.28 – The CLAR importance in Developing CT

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	Very Important	23	38%	1.62	0.49
2	Important	37	62%		
3	Moderately Important	0	0%		
4	Slightly Important	0	0%		
5	Not Important	0	0%		
Total		60	100%		

The Mean 1.62 indicates that the majority of the students find the CLAR effective in developing CT.

Q15. Using CLAR enables you to:

As displayed in the Figure 4.29 and Table 4.29, many abilities and skills are devel-

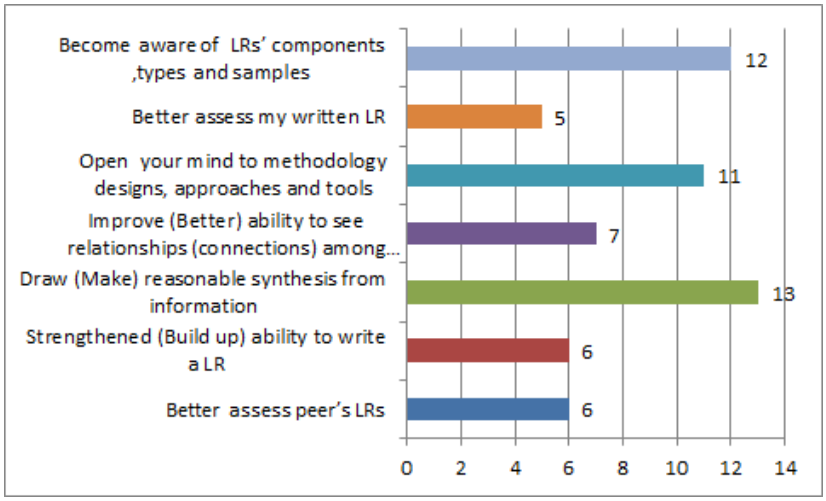

Figure 4.29 – The Students' Abilities Provided by the CLAR

oped by the students as a result of using the CLAR. First, the majority of the students (22%) are able to draw (Make) reasonable synthesis from information after using The CLAR. Also (20%) become more aware of LRs' components, types and samples thanks to the CLAR. Moreover, (18%) of the students after using the CLAR become able to open their minds to research methodology designs, approaches and tools; and (12%) of the students, thanks to The CLAR, become capable of improving to see relationships (connections) among several aspects of a study as well. Additionally,(10%) of the sample become able to strengthen (Build up) ability to write a LR, similarly, their mates, another (10%) of the students can better assess peer's LRs. Yet, (8%) of the students become able to better assess their own written LRs through using the CLAR.

The Mean 4.23 demonstrates that the majority of the students when using the CLAR have become able to see relationships among several aspects of a study and based on the obtained SD value the rest of the sample thanks to the CLAR they become open to methodology design, approaches and tools, and draw reasonable synthesis from

Table 4.29 – The Students' Abilities Provided by the CLAR

n°	Rate	Nbr of Students	(%)	Mean	Standard deviation
1	Better assess peer's LRs	23	38%	4.23	1.96
2	Strengthened (Build up) ability to write a LR	37	62%		
3	Draw (Make) reasonable synthesis from information	0	6%		
4	Improve (Better) ability to see relationships (connections) among several aspects of a study	0	0%		
5	Open your mind to methodology designs, approaches and tools	0	0%		
6	Better assess my written LR	0	0%		
7	Become aware of LRs' components ,types and samples	0	0%		
Total		60	100%		

data.

Q16. How would you RATE your ABILITY to:

Table 4.30 – The Developped Skills

Ability	Very Good	Good	Acceptable	Poor	Very Poor
Describe the problem	20	40	0	0	0
Organize ideas logically	0	52	8	0	0
Rewrite other people's ideas using your own words	15	45	0	0	0
Understand your own or someone else's ideas	9	51	0	0	0
Determine /decide if an argument is sound/acceptable	8	42	10	0	0
Identify gaps in your knowledge and seek/look for information on it	0	60	0	0	0
Consider various options/choices to solve a problem	4	50	6	0	0
Consider various hypotheses/choices to solve a problematic	25	35	0	0	0
Clearly present your argument	35	20	5	0	0
Defend /hold/maintain your position /stand	5	53	2	0	0
Synthesis of other people's ideas before presenting your own	46	14	0	0	0

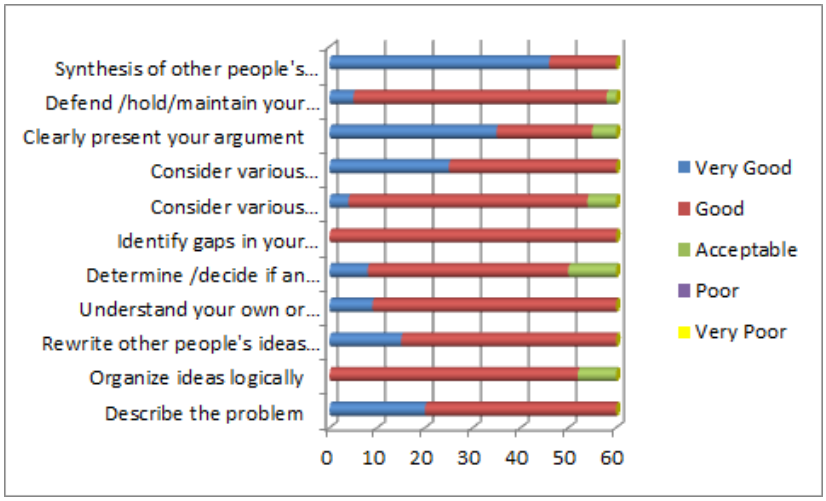

Figure 4.30 – The Developped Skills

4.3.3 Students' Pre-test Interview Analysis

The researcher decided to interview the students at the beginning of the experiment in order to collect fresh and primary data which is needed to find out the main reasons for the students' weaknesses found in their written LRs. The students' interview is composed of two parts pre and post semi-structured interview (See Appendix C) .The students' interview deals with the students' opinions about the different activities and assessment methods used in this study. The interview also deals with their perceptions before and after the experiment, and whether they benefited of the self and peer assessment methods or not. More importantly, whether they found the CLAR effective in developing their CT skills while they write LRs.The interview was as follows:

Question 1 and 2: All the participants (120) responded to the question claiming that they ignore what a LR is or for what reason it is written. *"In fact, we do not know it... We are not familiar with this concept... Is it an essay?", "We haven't seen it previously with our teachers", "frankly speaking, I don't know it", "I do not know*

what is it ,is it related to literature module?", "I'm sorry but I do not know".

Question3: When they were asked whether they practiced LRs writing before and for what reason, the majority of the students (103) claimed that they do not practice LRs writing saying: *"No, never", "I did not write any LR", "I haven t practiced writing LRs because our teachers did not ask us to do", "No, my teacher did not ask me to write a LR", "Never ... our teachers never encourage us to write LRs".*

Question 4: After their teacher asked them to write LRs about one topic ICT Integration in Education.The majority of students demonstrated a lot of difficulties and weaknesses; saying that they didn' t find it an enjoyable activity they argued that: *"It is too hard ,I could not do it", "Writing a LR is difficult", "I could not find what to write in a LR", "We are not good in writing", " we did not know how to write a LR", "I did not like it ,give us another thing to write", "It is not enjoyable and very difficult".*

Question 5 and 6: Because they did not adopt any process for writing a LR. All of them (17 students) are not familiar with the strategies such as summarize or analyze ;they do not know any steps or process to follow in order to write LRs . They said: *"I do not have any step to use", "Which steps I do not know them", "I never analyze nor summarize", " I do not know how to analyze", "Which evaluation", " No, a summary is hard for us", " How can we analyze a document? We do not know".*

Question 7: In addition, the majority of the participants (115) responded that they do not agree with their teachers' method of evaluation; some consider their judgments unfair , others find it too strict ;some students want to know the criteria of evaluation, another group of students blame themselves for always having weak marks;

they explained: *"I dislike his evaluation way", "they are strict", "We do not revise our lessons", "No, of course they are unfair...Subjective judgments", "we do not know how they are assessing or what they are assessing in our works", "It is impossible to have a good mark".*

Question 8 and 9: As for their preferences in assessment, the majority could not agree on one assessment way ;some students prefer assessing their works by themselves and practicing self-assessment strategy ; others prefer their peers to assess their works arguing that their peers will be more comprehensive and more flexible: *"I t will be better if I do it by myself", "My friends will do it perfectly", "We need to rely on ourselves, it's better", "I prefer pair work in all tasks", "Our mates will be more comprehensive and more flexible", "Our peers will give us better marks than the teachers", "I will assess my work", "I can do it alone".*

4.3.4 Students' Posttest Interview Analysis

After completing the experiment the teacher has thought of a semi-structured interview with the experimental group, that consists of 60 students, to seek fresh data about the study, the instruments, the CLAR, and the assessment methods experienced by the students. Their responses were as follows:

Question 1: The students in the control group responded on the first question on the most effective assessment method used to develop CT saying that they preferred both peer and self-assessment methods; however, the majority of them (37) preferred peer-assessment and (23) preferred self-assessment method to develop their CT skills while writing LRs. *"I liked peer-review", "Peer-assessment is better because*

we like working with our mates", "We prefer Peer-assessment", "We will use peer-assessment because it's better to think with our mates rather than alone", "I prefer self-assessment, because I want to rely on myself", "I prefer peer-assessment because I learn better from my peers' feedback", "I prefer peer-assessment because it is easier than self-assessment".

Question 2: All students (60) claimed that they found self-assessment effective in fostering their critical thinking skills arguing that: *"Self-assessment is effective because it helps me to develop my critical self-awareness", "It is effective" "It is interesting" "It develops my cognitive strategies like understanding and commenting", "It enhances my metacognition", "It helps us to be critical and more involved in assessment and learning", "It helps us to discover our weaknesses and to set direct real objectives for my learning", "It stimulates our motivation for learning", "It helps us to reflect and think deeply of our learning", "It supports me in writing".*

Question 3: When asked on the peer-assessment effectiveness on developing their CT ,all of them responded that is very effective in fostering CT saying that: *"Peer assessment is effective because it develops my CT", "Thanks to it we become highly motivated to write and work in peers", "It helps us to practice more and improve assessment and judgment skills", "Through discussion and positive feedback to peers, we helped them to identify weaknesses in their own writing and they were very satisfied", "It is important as it trains me to give constructive comments to my mates", "I really learn to analyze and criticize from my peers", "We finally understand and reflect on the value of group work", "It was very helpful to be critiqued and assessed by a different group of peers", "It is effective to us since it helped us to clarify, comment and defend*

each other's work".

Question 4 By the end of the experiment, all the students (60) were very satisfied of using the CLAR in writing LRs. They claimed that it was helpful for them to write effective LRs. They said: *"It is very helpful because it demonstrates all the parts of a LR", "It is necessary for us to use because it explains the strategies and tips of LRs writing", "It facilitates LRs writing", "It clarifies the skills and components of a LR", "It is very important ,I finally learn how to synthesize data thanks to CLAR", "We did not know how to write LRs before the CLAR", " Thanks to the CLAR , now writing LRs has become an easy and interesting activity".*

Question 5: All the students agreed on the effectiveness of the CLAR in developing their CT skills. They explained that they will use it each time they write a LR. They argued saying: *"The CLAR solves our problems in LRs writing", "It enables me to understand the nature and structure of LRs", "It facilitates the process of writing LRs", "It fosters CT because it helps us to learn how to understand ,then synthesize data in order to write LRs", "It is effective because it supports collaboration and group work in class", "It helps me to involve finding data to my needs in learning and real life later", "Thanks to the CLAR, I recognized my weaknesses in writing LRs and I could improve them", "The CLAR clarifies the cognitive strategies of learning such as understand and create", "The rubric was effective and presents in its scale the dimensions of CT".*

4.3.5 Teachers' Semi-structured Interview Analysis

The researcher conducted an interview the teachers of Master Students who are in charge of teaching writing and research methodology modules in order to collect pri-

mary data concerning reasons for the students' weaknesses found in their written LRs; the semi-structured interview seeks to find the teachers' perceptions before and after the experiment, and whether they find the self and peer assessment methods effective or not. More importantly, whether they found the CLAR effective in developing their students' CT skills while they write LRs .The Teachers' interview is also composed of two parts pre and post semi-structured interview (See Appendix B) . The teachers' Interview answers were as follow:

Question 1: The teachers when they were asked about the challenges their students usually face while writing LRs, they said: *"Students lack knowledge about the very nature and functions of LRs which leads them to dismiss their importance in research process", "They are not thinking about the writing process they used to learn by heart what to write so they become lazy and want only the easy tasks", "They need more practice", "They find difficulties in selecting prominent texts related to their topics", "They are not able to organize their resources and ideas", "They do not know the right way of writing a LR, they just do it randomly", "They do not know how it is written".*

Question 2: All the teachers agreed that their students *"Lack practice of writing LRs"* and *"They do not think critically"* .They argued saying: *"I think that most students struggle with thinking critically when it comes to writing LRs, they do not know how to bring all information together and how to structure a unity of knowledge out of it", "They cannot thinking critically, they used to restate others' works without addition nor criticism", "I guess the number of modules they have reduces the time they could dedicate to learning how to foster CT", "Normally , they should practice more about LRs writing"*

Question 3: When teachers were asked whether their students are reflective about their writings, all of them replied that : *"Usually ,they are not reflective", " They never reflect on their writings", "They ignore how they can reflect on their works", "They tend to be less reflective due to their self-esteem; they do not have a high self-esteem and usually adopt established opinions by other researchers without any criticism", "They show almost no reflection".*

Question 4: The teachers have given some activities or solutions for their students claiming that: *"I suggest proof reading of their written works", "I suggest group-discussions about the research topics and how to write LRs", "I suggest Peer- reviews; they usually enjoy learning in peers", " I think we need to change the writing activities and make them more reflective", "I think they should write more LRs".*

4.3.5.1 Posttest Teachers' Interview

Question 1: The teachers claimed that they are not satisfied with the conventional assessment saying: *" The conventional assessment tends to be accumulative only, I'm not satisfied with", "In think we have to improve the assessment process in our classes", "I guess we do not give it much attention ,we should focus more on the activities"*, And when asked about self-assessment method, the teachers said: *"I think we should really integrate it in our assessment methods, our students are the core of the learning process we have to involve them in the assessment operation", "It is very successful method that develops self-awareness and self-esteem", " Self-assessment urges Students' reflections on their achievements and failures , which are useful techniques that make learners analyze their work and resort to critical thinking".*

As for peer-assessment the teachers argued that: *"Peer-assessment is useful ,it is about involving students in the assessment operation and make them aware of the possible mistakes their peers commit and eventually they learn from each other", "It is my preferable assessment method because it motivates my students to exhibit all their hidden potential", "It represents a good opportunity for the students to practice and analyze other people's thoughts and actions".*

Question 2: When the teachers asked about which activities among the three they consider effective in developing CT, they responded: *"Peer-assessment", "Self-assessment but I think peer-assessment is more effective", "Peer-review ensures discussion, ideas exchange and collaboration among learners", "Students have a tendency to listen and take feedback from their peers", " Peer-assessment encourages student responsibility and involvement", "It focuses on the development of students' judgment skills", "Students generally have a good understanding of one another and peer assessment permits them to work together while determining each other's areas of mastery and weakness", "Peer-assessment is more effective as it enhances evaluative thinking in which that involves skills such as identifying assumptions, posing thoughtful questions, pursuing deeper understanding through reflection".*

Question 3: When the teachers are asked about their perceptions of using CLAR in fostering CT, they all demonstrate positive perceptions explaining that: *"The CLAR presents a wonderful combination between CT skills and components of a LR", "The rubric succeeded to foster them to think deeply about the previous works, their main findings , evaluation of them, and results synthesis", "The CLAR was a rubric which assists the learners to write effective LRs by providing them with the necessary parts of*

a LR in relation to their cognitive skills", "CLAR enhances the analytical thinking", "The rubric supports both self and peer-assessment methods, thus it fosters students' CT skills".

Question 4: When the teachers are asked about how Likely would they use self-assessment, peer-assessment and CLAR as assessment or feedback methods, they all said that they are happy about them.They argued: *"I am quite satisfied with the learners' collaborative learning provided by peer-assessment", "Personally, I will integrate self-assessment task in my writing class; It enhances the learners' self-awareness and motivation", "I am for the CLAR ,it eventually facilitates of LRs writing process", "I am very satisfied with the three; they together foster CT skills in our students", "I recommend the CLAR to be used with all the students in writing their LRs".*

Question 5: At the end of the interview, the teachers are asked to suggest other activities or methods, besides self, peer- assessment and CLAR, therefore; they responded saying: *"I believe that all writing practices and activities may foster CT", "I think public discussions and debates can develop CT", "I believe within the technology spread, we need to update our teaching practices, thus I suggest the use of e-learning to foster CT", "Maybe problem-solving and decision making activities", "I suggest oral presentations and role modeling", "I suggest the use of flipped classroom".*

4.4 Conclusion

The study aims to enhance the critical thinking skills through self, peer-assessment and the CLAR in EFL Master Students while writing their LRs .The results obtained were

subject to an analysis to seek good answers to the research questions. The results' analysis displayed a wide range of data and information about the used activities and methods, in addition to the CLAR. All the participants, the students and the teachers have demonstrated positive perceptions toward the used assessment tools. In general, they were all satisfied with the study and demonstrated rich data which will be interpreted in the next chapter to find out the main solutions to the problematic being investigated.

Chapter 5

Interpretations and Discussion of the Results

Contents

5.1 Introduction

This chapter highlights the discussion of the findings' interpretations. After collecting data from the teachers' semi structured interview, the students' questionnaire and semi-structured interview, the researcher analyzed all the findings using PSPP statistical software. The obtained data were interpreted to determine whether the self and peer assessment methods in addition to the CLAR rubric are successful in developing the students' CT while they write LRs. Moreover, the discussion will highlight the teachers' and the students' different perceptions of the CLAR use as a tool to foster CT skills in the EFL classroom.

5.2 Interpretations and Discussion of the Results

In the following section several interpretations will be presented based on the data collected from research tools, activities and methods, and by comparing between the control and experimental groups' achievements.

5.2.1 Students' Pre-test Interview

From the students' interview, all the participants 120 responded to the first two questions claimed that they ignore what a LR is or for what reason it is written, and they are not familiar with LRs writing activity. When they are asked whether they practiced LRs writing before and for what reason, the majority of the students 103 claimed that they do not practice LRs writing saying That they have not written LRs before and their teachers most of the time did not encourage them to do so. Later, and after their

teacher asked them to write LRs about one topic "ICT Integration in Education", the majority of students demonstrated a lot of difficulties and weaknesses; saying that they didn't find it an enjoyable activity and it was so hard for them to do it, due to the fact that they did not adopt any process for writing a LR. All of them 17 students are not familiar with the strategies such as summarizing or analyzing; they did not know any steps or process to follow in order to write LRs. In addition, the majority of the participants 115 did not agree with their teachers' method of evaluation; some considered their judgments unfair, others found them too strict; some students wanted to know the criteria of evaluation, another group of students blamed themselves for always having weak marks; they explained that their conventional assessment practiced was not fair, and teachers usually gave subjective comments; They even ignored how they were assessed or what were their teachers assessing in their works. Furthermore, as for their preferences in assessment, the majority could not agree on one assessment way; some students preferred assessing their works by themselves and practicing self-assessment strategy; others preferred their peers to assess their works arguing that their peers will be more comprehensive and more flexible.

5.2.2 Students' Posttest Interview

After completing the experiment, the researcher has thought of a semi-structured interview with the experimental group, that consists of 60 students, to seek fresh data about them and more details about the study, the instruments, the CLAR, and the assessment methods experienced by the students. The students responded on the first question on the most effective assessment method used to develop CT saying that they

preferred both peer and self-assessment methods; more specifically, the majority of them 37 preferred peer-assessment and 23 preferred self-assessment method to develop their CT skills while writing LRs.

All students 60 claimed that they found self-assessment effective in fostering their critical thinking skills arguing that it assisted them to develop their critical self-awareness. Also, it develops their cognitive strategies like understanding and commenting besides metacognition. When they were asked about the peer-assessment effectiveness on developing their CT, all of them responded that is very effective in fostering CT. Through discussion and positive feedback to peers, they helped them to identify weaknesses in their own writing and they were very satisfied. Also they claimed that they learnt to analyze and criticize others' works and essays from their peers. Additionally, by the end of the experiment, all the students 60 were very satisfied of using the CLAR in writing LRs. They claimed that it was helpful for them to write effective LRs. They said that it was very helpful because it demonstrated all the componenets and steps of writing a LR. They considered it important as it assisted them to learn how to synthesize data.

All the students agreed on the effectiveness of the CLAR in developing their CT skills. They explained that they will use it each time they write a LR. They argued saying the CLAR solved their problems in LRs writing. For them, it was effective because it supported collaboration and group work in class. Most importantly, the rubric was effective for them because it presented scales and dimensions of CT besides the steps of writing LRs.

5.2.3 Students' Questionnaire

Part1:General Background Information

Gender: Table 4.2 and Figure 4.2 determine the gender of the participants in this study. The students involve 40 males who represent 33% of the sample, and 80 females who represent 67%. The number of females is double males' number. Thus, the majority of the sample chosen is female students. The fact that will raise our attention that may be the females are more critical than males in writing LRs. The researcher will prove or disapprove this hypothesis based on their responses.

Age: As for the age, Table 4.3 and Figure 4.3 present the age of the participants, and as it can be seen, the participants are of different ages: the majority of them 66 who represent 55% of the sample are between 18 and 25 years old. It' s noticeable that the majority of the them are young and more suitable to learn how to think critically earlier; at this age. Also, 44 students who represent 37% of the sample are between 25 and 35 years old, those are appropriate too to learn CT and they want to .They are already working and aware of CT importance in education and life career as well. Minority 10 students who represent 10% of sample are from 35 to 45 years old, and they are mature enough to know about CT importance and they were eager to take part in the study and try innovative methods and activities in EFL Learning.

Students' Rate of their Writing Ability: At the beginning of the experiment, table 4.4 and figure 4.4 demonstrated that the majority of the students 73 who represents 60% of the sample consider their level in writing poor. 20 Students who represent 7% consider their ability in writing very poor. Also 20 of them with 17% consider their level acceptable; as the statistical mean presents, and 7 students who represent 6% of

the sample consider themselves good. It is obvious that the learners know about their weaknesses; they demonstrate an awareness of their writing ability. It is noticeable that the majority of the sample is challenging within writing LRs since only 7 students who represents 6% of the sample are good. However, after the experiment and in their replies on the posttest questionnaire the same students claimed that they have improved their ability in writing more specifically in writing LRs. As it is seen in Table 4.15 and Figure 4.15, the majority of the students 73 with 61% consider their level in writing acceptable. 20 of them with 17% consider their level good; 15 students consider very good. 7 students who represent 7% of the sample consider themselves poor and only 5 students consider their ability very poor in writing. By comparison, the students writing ability has changed and improved along the experiment and through using self and peer assessment methods and the CLAR as well.

Part 2: Writing LRs

From the students' answers to the two first questions, it is clear that The majority of the students are not familiar with LRs writing as they said they haven't written a LR before. 103 participants who represents 86% of the sample "No" as they haven't written any LR, and only a few of the students who represent 14% (17 Students) who are familiar with LRs writing activity. Moreover, as Table 4.6 and Figure 4.6 demonstrated, the majority of the students 15 students who represent 88% of the sample did not enjoy writing LRs because they found it too challenging to review the literature; however only 2 students who represents 12% who enjoyed LRs writing.

When the students are asked about the difficulties they faced while writing LRs, they explained that there are many. Yet, most prominently the common ones are

presented in table 4.7 and figure 4.7. It is noticeable that the students faced several difficulties during their LRs writing process. Overall, it can be seen that the majority of them 39% ignore how to summarize previous studies. Another problem faced by 28 students 23% who cannot understand and analyze the previous works. Also, 13% of the students claimed that they ignore why and how to write citations and references. Others 10% said that they cannot find clear resources of data and a minority of the students 7% cannot find written resources related to their research topics. With all these challenges, it is surely hard for them to write LRs. What really attracts the researcher in the obtained results that all the students do not use or adopt any critical process to write LRs.

More importantly, when it is discovered that their teachers do not encourage them to write LRs. As it is presented in both the Table 4.8 and bar chart in Figure 4.8, the majority of the students 63% said that their teachers never asked them to write LRs. Other students 23% stated that they were rarely encouraged to write LRs. Yet, Another group of the students 17% claimed that their teachers sometimes encouraged them to practice LRs writing. Thus, the lack of practice is another serious problem that the students suffer from.

Nevertheless, there was an attempt to solve the participants' difficulties and challenges in an experiment with the inrtegration of some methods and with much practice along the study. The students' answers in the posttest questionnaire revealed a noticeable change in thier behaviours and they learnt to adopt some critical steps to facilitate LRs writing activity. The results that will prove our approach's effectiveness in promoting students CT skills. Table 4.16 and Figure 4.16 demonstrated the different

critical steps to write LRs. As it can be seen 18% of the students analyze the results of the previous works. 17% of them prefer reading and understanding all resources. Also, 17% of them prefer criticizing and finding gaps in previous studies. 15% of them prefer to conduct extensive data research. Other students 13% read then summarize data. 8% of them prefer reading and reporting all what they found.

Additionally, 8% of them focus on important citation details, and 5% of them who prefer to determine their purpose in order to write a LR. The critical steps were very useful for them. Moreover, It is obvious that the students at the end of the study have developed an awareness of the LRs importance, and discovered the main reasons behind its importance. Table 4.17 and Figure 4.17 exhibited their discovered reasons and that the majority 32% of the students' reason is to synthesize literature using their academic styles. Other students' reason 28% is to justify their own research and their importance; 23% of the students write LRs to justify their approaches, and the remaining 17% of the students write LRs to show a thorough professional grasp of the area of research.

Part3: Critical Thinking Skills

Master students have developed a sense of awareness of LRs writing and CT skills importance as well, earlier they did not know about the real meaning of CT nor its importance as presented in their replies when they were asked to define CT, they gave mistaken definitions of CT as illustrated in Figure 4.9 and Table 4.9. The majority of the students 28% referred to CT as being able to differentiate between useful and useless details. However, 20% considered CT as being open-minded and updated persons. 10% claimed that CT skills entailed drawing a conclusion from a set of information. 10%

defined CT as the ability to interpret graphs and figures.

Some students 17% referred to CT as being able to solve problems. Others 13% defined CT as the ability to make right decisions ;and few students 7% consider CT as being able to criticize others' works, behaviors and opinions. It was clear at the beginning that the students have mistaken claims of CT skills. Whereas, after the research and by the end they have corrected their concepts and understanding of CT.

In the posttest questionnaire ,they answer intelligently and present good claims of CT. As Table 4.18 and Figure 4.18 illustrated, 22% of the students define CT as being able to criticize others' works, behaviors and opinions. Others also 22% define CT as being able to draw conclusions from a set of information. Some students 20% define CT as a problem solving strategy. 12% of the them define CT as being able to differentiate between useful and useless details. Other 10% of them consider CT a being an open-minded and updated person. 8% of them define CT as making right decisions. Only a minority of students 7% who define CT as being able to interpret graphs and figures.

All the given answers revealed that the students have become conscious of the CT skills and they believe that they must use them in order to write effective LRs. Besides that, all of them have changed their minds and consider CT important as stated in Table 4.19 and Figure 4.19. The majority of them are aware of its importance as 34% of them claimed that it is very important to them; also 10% of them said that CT is important to them. Yet, the only remaining students 6% stated that it is moderately important to them. Most prominently, the students have improved their CT ability and they become sure about its importance for them.

At first, as illustrated in Table 4.11 and Figure 4.11, the majority of the students 48% consider themselves poor in CT. Another group of students 6% claimed that have a very poor ability in CT. However, in the Posttest questionnaire, the majority of the students 43% claimed that they have a very good ability in CT as shown in Figure 4.20 and Table 4.20. Also, some students 5% said that they have a good ability in CT. In addition, there is an attractive change in the students' perceptions of themselves; at the beginning 28% of the students consider themselves open-minded thinkers, and 44% of the students said that they are "Clear Thinkers" better demonstrated in Table 4.12 and Figure 4.12, in contrast to their answers in the posttest questionnaire, they claimed that 41.67% consider themselves deep thinkers and 28.33% of them claimed that they are accurate thinkers Figure 4.21 and Table 4.21. Therefore, the students have improved their CT ability and developed their metacognition.

Part4: Self and Peer Assessment

As for the assessment process in their classroom, most students 95% stated that the assessment process is important, and 25% of them claimed that it is slightly important as demonstrated in Table 4.13 and Figure 4.13, but their teachers do not include them within; they even do not know the assessment criteria that their teachers adopt. In Table 4.14 and Figure 4.14 the majority of the students 78% stated that their teachers never include them in the assessment process; while some of them 32% said that their teachers rarely involve them while assessing their works. Yet, only 10% stated that their teachers sometimes involve them in the assessment process. Unfortunately, though the students are aware of the assessment operation importance, their teachers keep them far from and exclude them from it.

Furthermore, when asked about what activities their teachers used to develop their CT, they replied Table 4.13 and figure 4.13, 20% of students stated that teachers often ask them to redraft and proofread their drafts. 17% of them said that their teachers encourage them to work collaboratively and collegially to develop CT. Also 17% of them said that their teachers engage them in a reflective learning process to foster CT. In addition, 13% of them explained that their teachers ask them to objectively critique peers' works. While 12% of them stated that they often ask them to review previous work to improve their CT skills. Others 8% said that they insist on them to understand assessment operation in order to improve their CTs. It is clear, the majority of the students benefited from self and peer assessment activities to develop their CT.

Moreover, when the students were asked about the benefits which they learn from peer-assessment they explained that there are many advantages to peer-assessment they have learned. As it can be seen in Table 4.14 and Figure 4.14 the majority of students 25% learned to criticize, evaluate and apply other generic skills during the process of peer-assessment. 20% of the students also claimed that they learn how to develop their ability to make judgments and justify a point of view. In addition, 17% of them learn to develop their ability to give constructive feedback to peers. Similarly, 17% of them could understand the academic standards of LRs.

Another group of students 8% said that they become familiar with autonomous learning and monitoring their own progress rather than relying on others to do it. 5 students who represent 7% of the sample stated that they become more familiar with assessment criteria and how they are applied to students' work. Other students 7%

claimed that they become more aware of their weaknesses and strengths in writing. Henceforth, It is noticeable that the students learn a lot of strategies of CT from peer-assessment like autonomy and metacognition.

Similarly, when being asked about the benefits of self-assessment and whether it was helpful for them to develop CT,the students as it can be seen in Table 4.24 and Figure 4.24 the studets have benefited enormously from self-assessment.

The majority of the students 25% find it very useful as it promoted their understanding and increased quality and thoughtfulness on assignments. 18% of the students said that it enhanced learning, make it deep and continuous process. Also, 17% of them claimed that self-assessment makes them feel that they have control over their weaknesses and their own evaluation. In addition, 15% stated that it helps them to reduce anxiety. 13% of the students stated that self-assessment developed their cognitive abilities. Other students 12% reported that the main benefit of self-assessment is to solve student-teacher conflict by facilitating the grading process. They further explained that they all agreed that it develops CT because of many reasons.

The majority of the students 32% stated that self-assessment allows them to see and reflect on their contributions. In addition, 20% of the students said that it encourages them to reflect on their role. Others 20% claimed that it helps them to become more self-aware and self-critical, the fact that will improve their performance in any course. Moreover, 17% of the students told that self-assessment develops their judgment skills; and 12% of the students added that it encourages their involvement and responsibility. Henceforth, the students were very satisfied with self-assessing their LRs.

Part 5: Effectiveness of the CLAR

As for the CLAR, the majority of the students 82% considered CLAR very important in both self and peer assessment processes. As well as, 18% of the sample considered it important in self and peer assessment especially in LRs writing activity. Also, as better displayed in Table 4.29 and Figure 4.29, the majority of the students 85% claimed that The CLAR is very important because it reflects about LRs parts and skills. Similarly 25% of the students also said that they consider The CLAR important in reflecting about LRs Writing.

Most importantly, all students agreed on the importance of The CLAR in developing CT, as the majority of them 62% argued that it is very important to develop CT ;also the remaining students 38% stated that they find the CLAR important to develop their CT; because of the many abilities and skills they developed thanks to The CLAR use.

First, the majority of the students 22% are able to draw (Make) reasonable synthesis from information after using The CLAR. Also 20% become more aware of LRs' components,types and samples thanks to the CLAR. Moreover, 18% of the students after using the CLAR become able to open their minds to research methodology designs, approaches and tools; and 12% of the students, thanks to The CLAR, become capable of improving to see relationships (connections) among several aspects of a study as well. Additionally, 10% of the sample become able to strengthen (Build up) ability to write a LR, similarly, their mates, other 10% of the students can better assess peer's LRs. Yet, 8% of the students become able to better assess their own written LRs

through using the CLAR.

Finally, to ensure the efficiency of the CLAR in developing CT , the students have demonstrated a set of abilities developed thanks to the CLAR use. 20% are able to rewrite other people's ideas using their own words; 20% consider various hypotheses/choices to solve a problematic. Also, 25% of the students are able to defend /hold/maintain a position /stand while reviewing. 25% of them learn to synthesize of other people's ideas before presenting their own, and 10% of them learn how to describe the problem.

5.2.4 Teachers' Semi-structured Interview

The researcher conducted an interview with seven teachers of Master Students who are in charge of teaching writing and research methodology modules, in order to collect primary data concerning reasons for the students' weaknesses found in their written LRs; the semi-structured interview aimed to find the teachers' perceptions before and after the experiment, and whether they found the self and peer assessment methods effective or not. More importantly, whether they found the CLAR effective in developing their students' CT skills while they write LRs .The Teachers' interview was also composed of two parts pre and post semi-structured interview (See Appendix B) . The teachers' interview answers were as follow:

The teachers when asked about the challenges their students usually face while writing LRs, they presented a set of challenges involving the lack of knowledge about the very nature and functions of LRs, the lack of practice, difficulties in selecting prominent texts related to their topics, lack of ability to organize their resources and

ideas, and the lack of LRs writing process. In addition, the teachers agreed that their students struggle with thinking critically when it comes to writing LRs, they ignore how to bring all information together and how to structure a unity of knowledge out of them.

They went further saying that their students are not reflective about their writings, and they tend to be less reflective due to their self-esteem; they do not have a high self-esteem and usually adopt established opinions by other researchers without any criticism Most importantly, the teachers have given some activities or solutions for their students such as proof reading of their written works, group-discussions about the research topics and how to write LRs, Peer- reviews; using more reflective writing activities.

5.2.5 Discussion of Posttest Teachers' Interview

The teachers claimed that they are not satisfied with the conventional assessment saying that the conventional assessment tends to be accumulative only. It needs to be improved; and as teachers, they should focus more on the activities integrated .Yet, when asked about self-assessment method , the teachers explained that it should be integrated in their classes, and they have to involve their students in the assessment operation as well. Self-assessment for them is a very successful method that develops students' self-awareness and self-esteem. Also, it encourages students' reflection on their achievements and failures , which is useful technique that make learners analyze their works and resort to critical thinking.

Similarly, for peer-assessment the teachers argued that it is their preferable assess-

ment method because it motivates my students to exhibit all their hidden potential and represents a good opportunity for the students to practice and analyze other people's thoughts and actions collaboratively. When the teachers asked about which activities among the three they considered effective in developing CT, they all agreed on Peer-assessment due to the fact that it ensures discussion, ideas exchange and collaboration among learners who have a tendency to listen and take feedback from each other. Most prominently, peer-assessment is more effective, as it enhances "evaluative thinking" in which the students use skills such as identifying assumptions, posing thoughtful questions, pursuing deeper understanding through reflection.

When the teachers are asked about their perceptions of using CLAR in fostering CT, they all demonstrate positive perceptions toward it, explaining that The CLAR presents a wonderful combination between CT skills and the components of a LR.As well as, it succeeded to foster students to think deeply about the previous works, the results synthesis and what related them to research topic. The CLAR is a rubric which assists the learners to write effective LRs by providing them with the necessary parts of a LR in relation to their cognitive skills, besides that, it can support both self and peer-assessment methods, thus it fosters students' CT skills.

When the teachers are asked about how Likely would they use self-assessment, peer-assessment and CLAR as assessment or feedback methods, they all said that they are happy about them. The majority said that they are for the CLAR that eventually facilitates LRs writing process. Another teacher claimed that he would rather recommend the three because they together succeeded in fostering CT skills among his learners.

Finally, at the end of the interview, the teachers were asked to suggest other activities or methods, besides self, peer-assessment and CLAR, therefore; they suggested some activities like public discussions and debates, e-learning, problem-solving and decision making activities, oral presentations and role modeling, which need to be investigated for future researches.

5.2.6 Discussion of the CLAR Use in developing CT

The results of this study bring additional data to the body of knowledge on using the CLAR rubric in self and peer-assessment activities to develop CT skills in LRs writing. This is important, simply because the CLAR was designed to facilitate LRs writing process and at the same time to equip the students with the necessary cognitive skills to fulfill this process.

In addition, along the study, the CLAR was valid and reliable in terms of content, scales, criterion-related and face validity. It has been also proved by experts (6 teachers) who confirmed its validity and reliability. Despite that the CLAR was designed to be used alone in this study , the findings proved that it can be used with self and peer-assessment methods to enhance CT. It could support collaboration, discussion, self-awareness and metacognition.

More particularly, this study has demonstrated that, when used in a peer-assessment activity, the CLAR was more than a scoring rubric. It could trigger evaluative thinking in students as they work on writing LRs. Thus, it can be more useful when used with peer assessment to achieve the aim of this study.

The study through the use of alternative approaches (self, peer and the CLAR)

to foster CT development, it highlights comparison and contrast between those approaches and determines invaluable data on what makes one approach more useful and better than the others in fostering CT. To be exact, peer-assessment along with the CLAR was found to be able to enhance critical thinking CT in LRs writing.

Last and not the least, the quasi-experimental study using different approaches to assessment involving both teachers and students has succeeded to provide both quantitative and qualitative evidence of the potential of the used approaches, also to improve the conventional assessment practice, and mainly to promote the development of evaluative thinking as a skill of CT skills in LRs writing.

5.3 Conclusion

The main findings of the study revealed that the three assessment methods were successful in developing CT skills. The data generated from the students' pre and posttest questionnaire and the semi-structured interview demonstrate different positive perceptions of self-assessment ,peer assessment and the CLAR as well .The experimental group students were very satisfied of the study and the whole experience as they learnt many conceptions about CT skills and LRs writing. Additionally, evidence from the teachers' semi-structured interview supported the students perceptions of satisfaction towards using the CLAR in developing CT skills while writing LRs.

Chapter 6

General Conclusion

This chapter summarizes the findings of this study on the potential of using the Critical Thinking for Literature Reviews Writing Analytical Rubric (CLAR), peer-assessment, and self-assessment activities to foster critical thinking skills. The purpose of this study is to develop critical thinking skills among master students while they write LRs.

The literature presents a strong evidence for the importance of critical thinking use in education and for achieving learners' language mastery. Language leads to critical consciousness as it enables individuals to remember structures, generate meanings and also interpret their codes. In addition, language allows for individuals to decide on what to bring about future change. The very basic aspect of CT is to owe the ability to use analytical thinking skills that should be taken into account while learning, thus, Learners should learn how to produce and receive information through language critically based on those skills.

This study was a try to highlight some innovative components in terms of layout, methodology, format and software. It is written using LaTeX, that is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation. It is the de facto standard for the communication and publication of scientific documents. LaTeXis available as free software. One of the advantages

of LaTeXover other more traditional systems (Word or Open Office) is the high typographical quality of the documents that you'll be able to produce. Another prominent advantage is that LaTeXallows you to clearly separate the content from the format of your document. As a writer (scientist, researcher), this gives you the opportunity to focus on the "what", the creative part of your work, rather than the "how" is it going to look printed out in paper (that is the work of LaTeXdocument class designers) LaTeXtemplate of this study adopted the American Psychological Association (APA) Referencing Style the 7^{th} edition , which is published in October 2019. The referencing style dictates the information necessary for a citation and how the information is ordered, as well as punctuation and other formatting adopted by researchers from all over the world in humanities and behavioral sciences. Most prominently, the data collected were analyzed using the *PSPP* statistical software 1.0.2 version created in 2018 as a free open version of the *SPSS* (Statistical Package for Social Sciences).

This study, based on a quasi-experimental method, was carried out with the second graduate students (Master) in the English Department at Letters and languages faculty, University of Laghouat. The targeted sample whom are selected based on the convenience sampling technique is consisted of 120 participants voluntarily participated in the control group students N=60 who received conventional classroom instruction, whereas the experimental group N=60 they received treatment (CLAR rubric) in addition to the self and peer-assessment activities which encouraged them learn to be critical and reflective, the state that find value in critical methodology and most importantly in writing LRs.

Assessment with all its forms and activities represents one approach to develop CT.

Another approach is introduced in this study, and that is the rubric CLAR's key criteria and the expected levels of performance used for facilitating the evaluation process of writing LRs. The rubric was designed to promote students' critical thinking skills so that they become critical readers and writers of LRs and academic compositions as well.

The study investigated the potential of using self and peer-assessment activities within the CLAR to promote critical thinking in LRs writing by comparing the level of critical thinking of the experimental group with that of the control group (who adopted the conventional teacher-only assessment method). Below is the summary of the findings.

Students' Learning Performance: The students at the early beginning demonstrated a wide range of weaknesses along with the writing process in general and the LRs product in particular. They showed demotivation and low level in writing, reflection and CT. Through the experiment they discovered benefits of self, peer assessment and the CLAR on developing CT skills, and in comparison with the control group that received no intervention. Based on PSPP statistical analysis students in the experimental group would perform better than the control group. They performed better in the posttest and the number of weaknesses has diminished in comparison to the pretest. Comparing the control and experimental students' LRs ,it is obvious that the control students have not succeeded to develop their CT skills using the conventional assessment.

From the students' achievements through the study, we can highlight the following findings:

1. Working collaboratively with peers to review literature promotes critical thinking;

2. The use of the CLAR rubric enhances students' awareness of the LRs' components and CT skills

3. The CLAR involves more detailed critical thinking skills and it urdes students to make judgments about their own achievements

4. Both self and peer-assessment methods are more valuable in promoting CT when followed by sufficient discussion .

5. Students who understand the importance assessment activity engage better with the activity.

Semi-structured interview is used to determine students' perceptions of the influence of the learning activities on the development of their CT skills for LRs writing, on the basis of the self, peer-assessment and the CLAR. Responses to questions indicated that the peer-assessment within The CLAR had the greatest perception of improvement followed by the self-assessment. This finding was counter to the research questions.

Teachers' Perceptions of the Assessment Activities and The CLAR: Responses of the teachers in the semi-structured interview demonstrated that they were aware of their students' weaknesses in LRs writing and their lack of CT skills. The teachers through the study displayed positive perceptions of the self, peer-assessment activities, and mainly of The CLAR. Through interviewing them, they revealed that they all accepted that the CLAR had a great potential to develop CT in LRs writing.

Yet, all the teachers believed that the peer assessment activity within the CLAR was the best approach to help develop their CT in LRs writing. All of them recommended the future use of the CLAR rubric in writing and methodology classes.

CT has gained great recognition as invaluable to students not only in education and reserach but also for their future career. Due to this, a set of pedagogical practices to CT development have been identified to understand and find effective ways to help Master students in writing their LRs. The pedagogical implications are :

- Integrating collaborative work in the classroom activities to evaluate or review the work of peers promotes CT .This is consistent with many scholars in literature claiming that collaborative assessment by peers benefits the development of the CT of the students.

- Discussion opportunities have to be encouraged to raise the students' awareness of the skills: writing and assessment. Teachers require to support students in learning by questioning and giving judgments

- The use of a rubric enhances students' awareness of the critical thinking skills related to the activity. Sometimes students need an assessment guide to internalize the features of good writing

- A rubric like the CLAR can involve more detailed critical thinking skills.

- Introduction of the assessment criteria should be done incrementally within the students involvements

- Using the CLAR to support LRs writing should be repeated to ensure more

practice

This study supports the use of the CLAR in peer assessment activities to develop CT in LRs writing. Yet, some recommendations for future study are presented.

First, in this study, the use of the rubric was limited to writing LRs as it comprises the component parts as well as the writing skills of LRs. Thus it is recommended to design more general rubrics for academic writing or EFL learning.

Also it is recommended that future research permits use of the rubric over a longer period of time, since the CLAR was used for a short period (1 semester) to discover more benefits. Moreover, This study implements three approaches of developing CT skills, mainly self, peer-assessment and a rubric. Therefore it is recommended other researches to allow the use of other approaches like problem-solving activities or e-learning.

LRs writing is not an easy task as it necessitates a lot of practice, data collection and critical thinking skills. In this study we tried to facilitate such activity for Master students and at the same time developing their CT skills through self, peer-assessment activities and a rubric. Assessment activities match well the process approach to writing and they promote the development of CT. Self and peer-assessment practices along with discussion and debate proved to be effective instruments for promoting CT skills. A rubric also can be used alone or in a peer assessment activity to promote standardization and to help trigger evaluative thinking during activity as well. The CLAR is a valuable tool for students to use as they develop their critical skills through LRs writing.

Bibliography

[Abolghasem et al., 2020] Abolghasem, F. H. S., Othman, J., and Shah, S. S. A. (2020). Enhanced learning: the hidden art of reflective journal writing among malaysian pre-registered student nurses. *Journal of Nusantara Studies (JONUS)*, 5(1):54–79. (Cited in pages 75 and 82.)

[Abosalem, 2016] Abosalem, Y. (2016). Assessment techniques and students' higher-order thinking skills. *International Journal of Secondary Education*, 4(1):1–11. (Cited in page 65.)

[Al-Mahrooqi and Denman, 2020] Al-Mahrooqi, R. and Denman, C. (2020). Assessing students' critical thinking skills in the humanities and sciences colleges of a middle eastern university. *International Journal of Instruction*, 13(1). (Cited in page 75.)

[Aldrup and Klusman, 2018] Aldrup, K. and Klusman (2018). Student misbehavior and teacher well being: Testing the mediating role of the teacher-student relationship. *Learning and Instruction*, 58:126–136. (Cited in page 21.)

[Alfaro-LeFevre, 2016] Alfaro-LeFevre, R. (2016). *Critical Thinking, Clinical Reasoning and Clinical Judgment: A Practical Approach, Pageburst Ebook on Kno*. Elsevier Health Sciences. (Cited in page 20.)

[Alidmat and Ayassrah, 2017] Alidmat, A. O. H. and Ayassrah, M. A. (2017). Development of critical thinking skills through writing tasks: Challenges facing maritime english students at aqaba college, albalqa applied university, jordan. *International Journal of Higher Education*, 6(3):82–90. (Cited in page 62.)

[Allen, 2018] Allen, H. W. (2018). Redefining writing in the foreign language curriculum: Toward a design approach. *Foreign Language Annals*, 51(3):513–532. (Cited in page 51.)

[Alvi, 2016] Alvi, M. (2016). A manual for selecting sampling techniques in research. (Cited in page 89.)

[Alwehaibi, 2012] Alwehaibi, H. U. (2012). Novel program to promote critical thinking among higher education students: Empirical study from saudi arabia. *Asian Social Science*, 8(11):193. (Cited in page 4.)

[Ampa and Basri, 2019] Ampa, A. T. and Basri, D. M. (2019). Lexical and grammatical cohesions in the students' essay writing as the english productive skills. In *Journal of Physics: Conference Series*, volume 1339, page 012072. IOP Publishing. (Cited in page 87.)

[Andersson and Kroisandt, 2019] Andersson, C. and Kroisandt, G. (2019). Work-in-progress: Application of cooperative learning in e-learning-based laboratory classes. In *2019 IEEE World Conference on Engineering Education (EDUNINE)*, pages 1–4. IEEE. (Cited in page 2.)

[Appleton et al., 2017] Appleton, L., Grandal Montero, G., and Jones, A. (2017). Creative approaches to information literacy for creative arts students. *Communications in Information Literacy*, 11(1):7. (Cited in pages 52 and 54.)

[Ariza Martnez, 2005] Ariza Martnez, A. V. (2005). The process-writing approach: An alternative to guide the students compositions. *Profile Issues in TeachersProfessional Development*, (6):37–46. (Cited in page 57.)

[Ashlock, 2018] Ashlock, J. M. (2018). *Teaching Critical Thinking in the Digital Era through Visual Art: A Higher Education Perspective*. PhD thesis, Argosy University/Phoenix. (Cited in page 37.)

[Astawa et al., 2017] Astawa, I. N., Handayani, N. D., Mantra, I. B. N., and Wardana, I. K. (2017). Writing english language test items as a learning device: a principle of habit formation rules. *International journal of social sciences and humanities*, 1(3):135–144. (Cited in page 111.)

[Astrid et al., 2019] Astrid, A., Marzulina, L., Erlina, D., Harto, K., Habibi, A., and Mukminin, A. (2019). Teaching writing to efl student teachers: Teachers' intervention and no teachers' intervention through peer feedback writing techniques. *Universal Journal of Educational Research*, 7(9):1901–1908. (Cited in page 8.)

[Bailey and Bizzaro, 2017] Bailey, C. and Bizzaro, P. (2017). Research in creative writing: Theory into practice. *Research in the Teaching of English*, 52(1):77. (Not cited.)

[Baker, 2016] Baker, K. M. (2016). Peer review as a strategy for improving students' writing process. *Active Learning in Higher Education*, 17(3):179–192. (Not cited.)

[Bakker, 2018] Bakker, A. (2018). Writing an empirical design research paper. In *Design Research in Education*, pages 113–129. Routledge. (Not cited.)

[Barnawi, 2011] Barnawi, O. Z. (2011). Finding a place for critical thinking and self-voice in college english as a foreign language writing classrooms. *English Language Teaching*, 4(2):190–197. (Cited in page 4.)

[Bashar, 2016] Bashar, A. (2016). *Developing Tertiary Students' Critical Thinking Skills Through Movies The Case Study of Second Year English Students at Mohammed Kheider University of Biskra Dissertation*. PhD thesis. (Cited in page 70.)

[Batmanabane, 2018] Batmanabane, G. (2018). The imrad structure. In *Reporting and Publishing Research in the Biomedical Sciences*, pages 1–4. Springer. (Not cited.)

[Baxter Magolda, 2000] Baxter Magolda, M. B. (2000). Teaching to promote holistic learning and development. *New directions for teaching and learning*, 2000(82):88–98. (Cited in page 29.)

[Beach et al., 2016] Beach, R., Appleman, D., Fecho, B., and Simon, R. (2016). *Teaching literature to adolescents*. Routledge. (Cited in pages 37 and 38.)

[Beavers et al., 2017] Beavers, E., Orange, A., and Kirkwood, D. (2017). Fostering critical and reflective thinking in an authentic learning situation. *Journal of Early Childhood Teacher Education*, 38(1):3–18. (Not cited.)

[Bee and Murdoch-Eaton, 2016] Bee, D. T. and Murdoch-Eaton, D. (2016). Questionnaire design: the good, the bad and the pitfalls. *Archives of Disease in Childhood-Education and Practice*, 101(4):210–212. (Cited in pages 98 and 101.)

[Bentadjine, 2018] Bentadjine, M. A. (2018). Fostering critical thinking skills and effective communication methods in efl classroom. *Thesis in Psycholinguistic Issues in English Language Teaching at Mostaghanim University*. (Cited in page 72.)

[Bentamra, 2018] Bentamra, H. A. (2018). Promoting critical thinking skills for efl learners' through teaching reading and writing. *Thesis in Dicactic of Foreign Languages at Mastaghanim University*. (Not cited.)

[Bhargav et al., 2016] Bhargav, H., Akalwadi, G., and Pujari, N. V. (2016). Application of blooms taxonomy in day to day examinations. In *2016 IEEE 6th International Conference on Advanced Computing (IACC)*, pages 825–829. IEEE. (Cited in page 44.)

[Blakeslee and Fleischer, 2019] Blakeslee, A. and Fleischer, C. (2019). *Becoming a writing researcher*. Routledge. (Cited in page 56.)

[Blanchard and Root, 2008] Blanchard, K. and Root, C. (2008). Writing preparation and practice 2. *TESL-EJ*, 11(4). (Cited in page 59.)

[Borja, 2018] Borja, A. (2018). Writing the first draft of your science paper. *Journal of Educational Psychology*. (Not cited.)

[Bosch-Baliarda et al., 2019] Bosch-Baliarda, M., Soler Vilageliu, O., and Orero, P. (2019). Toward a sign language-friendly questionnaire design. *The Journal of Deaf Studies and Deaf Education*, 24(4):333–345. (Cited in page 98.)

[Brindle et al., 2016] Brindle, M., Graham, S., Harris, K. R., and Hebert, M. (2016). Third and fourth grade teacher's classroom practices in writing: A national survey. *Reading and Writing*, 29(5):929–954. (Cited in page 50.)

[Burden, 2016] Burden, P. (2016). *Classroom management: Creating a successful K-12 learning community*. John Wiley and Sons. (Cited in page 54.)

[Butler et al., 2017] Butler, H. A., Pentoney, C., and Bong, M. P. (2017). Predicting real-world outcomes: Critical thinking ability is a better predictor of life decisions than intelligence. *Thinking Skills and Creativity*, 25:38–46. (Cited in page 34.)

[Campano, 2019] Campano, G. (2019). *Immigrant students and literacy: Reading, writing, and remembering*. Teachers College Press. (Cited in page 37.)

[Cargas et al., 2017] Cargas, S., Williams, S., and Rosenberg, M. (2017). An approach to teaching critical thinking across disciplines using performance tasks with a common rubric. *Thinking Skills and Creativity*, 26:24–37. (Cited in pages 22, 31 and 105.)

[Carter et al., 2018] Carter, A. G., Creedy, D. K., and Sidebotham, M. (2018). Measuring critical thinking in pre-registration midwifery students: A multi method approach. *Nurse education today*, 61:169–174. (Cited in page 38.)

[Cheong and Cheung, 2008] Cheong, C. M. and Cheung, W. S. (2008). Online discussion and critical thinking skills: A case study in a singapore secondary school. *Australasian Journal of Educational Technology*, 24(5). (Cited in page 2.)

[Cheung and Jhaveri, 2016] Cheung, C.-K. and Jhaveri, A. D. (2016). Developing students' critical thinking skills through visual literacy in the new secondary school

curriculum in hong kong. *Asia Pacific Journal of Education*, 36(3):379–389. (Cited in page 42.)

[Cheung and Jang, 2019] Cheung, Y. L. and Jang, H. (2019). Teaching writing to elementary school students: an activity theory perspective. *Irish Educational Studies*, pages 1–16. (Cited in page 52.)

[Choy et al., 2019] Choy, S. C., Lee, M. Y., and Sedhu, D. S. (2019). Reflective thinking among teachers: Development and preliminary validation of reflective thinking for teachers questionnaire. *Alberta Journal of Educational Research*, 65(1):37–50. (Not cited.)

[Cottrell, 2017] Cottrell, S. (2017). *Critical thinking skills: Effective analysis, argument and reflection*. Macmillan International Higher Education. (Cited in pages 4, 24, 40, 41, 65 and 68.)

[Daud et al., 2018] Daud, W., Hanafi, H., and Laepe, A. (2018). The impact of collaborative learning on students' writing ability and their motivation in writing. *Journal of Language Education and Educational Technology (JLEET)*, 3(1). (Cited in page 9.)

[Davids and Waghid, 2017] Davids, N. and Waghid, Y. (2017). Modes of disagreement, tolerance and educational encounters. In *Tolerance and Dissent within Education*, pages 85–102. Springer. (Cited in page 45.)

[Dawson, 2017] Dawson, P. (2017). Assessment rubrics: towards clearer and more replicable design, research and practice. *Assessment and Evaluation in Higher Education*, 42(3):347–360. (Cited in pages 3 and 105.)

[De Backer et al., 2017] De Backer, L., Van Keer, H., and Valcke, M. (2017). Is collaborative learners 4 adoption of metacognitive regulation related to students' content processing strategies and the level of transactivity in their peer discussions? *European Journal of Psychology of Education*, 32(4):617–642. (Cited in page 10.)

[Dewey, 1997] Dewey, J. (1997). *How we think*. Courier Corporation. (Cited in page 16.)

[Durall and Leinonen, 2017] Durall, E. and Leinonen, T. (2017). Reflection in learning through a self monitoring device: Design research on eeg self monitoring during a study session. *Designs for Learning*, 9(1). (Cited in pages 23 and 24.)

[Dwyer et al., 2017] Dwyer, C. P., Hogan, M. J., Harney, O. M., and Kavanagh, C. (2017). Facilitating a student educator conceptual model of dispositions towards critical thinking through interactive management. *Educational Technology Research and Development*, 65(1):47–73. (Cited in page 37.)

[Efendi, 2018] Efendi, N. (2018). Analysis of students' critical thinking in writing argumentative essays. *Interdisciplinary Journal of Problem-Based Learning*, 4(2):132–137. (Not cited.)

[Ellis, 2018] Ellis, A. W. (2018). Modelling the writing process. In *Perspectives on cognitive neuropsychology*, pages 189–212. Routledge. (Cited in page 8.)

[Ferreira and Corredor, 2019] Ferreira, C. M. and Corredor (2019). Piloting a self-report questionnaire to detect reading-writing difficulties. In *2019 IEEE 19th International Conference on Advanced Learning Technologies (ICALT)*, volume 2161, pages 311–313. IEEE. (Cited in page 100.)

[Fitriani et al., 2019] Fitriani, A., Zubaidah, S., Susilo, H., and Al Muhdhar, M. H. I. (2019). The integrated problem based learning and predict, observe, explain (pbl-poe) to empower students' problem-solving skills. In *Proceedings of the 2019 3rd International Conference on Education and Multimedia Technology*, pages 375–379. (Cited in page 90.)

[Fitriani et al., 2020] Fitriani, A., Zubaidah, S., Susilo, H., and Al Muhdhar, M. H. I. (2020). The effects of integrated problem-based learning, predict, observe, explain on problem-solving skills and self-efficacy. *Eurasian Journal of Educational Research*, 20(85):45–64. (Cited in page 74.)

[Forehand, 2017] Forehand, M. (2017). Bloom's taxonomy. *Instructional Methods, Strategies and Technologies to Meet the Needs of All Learners.* (Cited in pages 43, 62 and 105.)

[Foster, 2017] Foster, D. (2017). *Writing and learning in cross-national perspective: Transitions from secondary to higher education.* Routledge. (Not cited.)

[Galvan and Galvan, 2017] Galvan, J. L. and Galvan, M. C. (2017). *Writing literature reviews: A guide for students of the social and behavioral sciences.* Routledge. (Not cited.)

[Ghout, 2018] Ghout, L. D. H. (2018). Exploring the role of classroom discourse in enhancing efl students' critical thinking skills. *Thesis in Linguistic at Bejaia University.* (Cited in page 71.)

[González et al., 2017] González, E. F., Trejo, N. P., and Roux, R. (2017). Assessing efl university students' writing: a study of score reliability. *REDIE. Revista Electrónica de Investigación Educativa*, 19(2):91–103. (Cited in page 110.)

[Gotoh, 2016] Gotoh, Y. (2016). Development of critical thinking with metacognitive regulation. *International Association for Development of the Information Society.* (Cited in page 30.)

[Gunawan et al., 2019] Gunawan, G., Harjono, A., Herayanti, L., Husein, S., and Fathoroni, F. (2019). Investigating student's critical thinking disposition based on gender in physics teaching with interactive multimedia. *JPPS (Jurnal Penelitian Pendidikan Sains)*, 9(1):1766–1771. (Cited in page 73.)

[Hahn et al., 2018] Hahn, T. W., Hatcher, J. A., Price, M. F., and Studer, M. L. (2018). Service learning courses iupui high-impact taxonomy. (Cited in pages 105 and 106.)

[Hakkinen, 2017] Hakkinen, P. (2017). Preparing teacher students for twenty first century learning practices (prep 21): a framework for enhancing collaborative problem solving and strategic learning skills. *Teachers and Teaching*, 23(1):25–41. (Cited in page 28.)

[Hanifi, 2018] Hanifi, A. (2018). Assessment in the lmd system: Challenges and expectations. *International Journal of Secondary Education*, 6(1):8. (Cited in page 88.)

[Harmer, 2007] Harmer, J. (2007). Review of how to teach writing. *Electronic Journal of Foreign Language Teaching*, 3(2):246–248. (Cited in pages 60 and 61.)

[Harper and Vered, 2017] Harper, R. and Vered, K. O. (2017). Developing communication as a graduate outcome: using 'writing across the curriculum' as a whole-of-institution approach to curriculum and pedagogy. *Higher Education Research and Development*, 36(4):688–701. (Not cited.)

[Hart, 2018] Hart, C. (2018). *Doing a literature review: Releasing the research imagination*. Sage. (Cited in page 3.)

[Haryani et al., 2018] Haryani, S., Wijayati, N., Kurniawan, C., et al. (2018). Improvement of metacognitive skills and students' reasoning ability through problem-based learning. In *Journal of Physics: Conference Series*, volume 983, page 012174. IOP Publishing. (Cited in page 2.)

[Haryati, 2018] Haryati, S. (2018). The effectiveness of the process oriented guided inquiry learning (pogil) model in educational psychology learning. *International Journal of Pedagogy and Teacher Education*, 2(2):375–388. (Cited in page 54.)

[Hatala and Cook, 2019] Hatala, R. and Cook, D. A. (2019). Reliability and validity. In *Healthcare Simulation Research*, pages 191–197. Springer. (Cited in pages 111, 112 and 114.)

[HeLan, 2019] HeLan (2019). Cultivating critical thinking through an english reading contest. In *2019 International Conference on Advanced Education Research and Modern Teaching*. Atlantis Press. (Cited in page 74.)

[Hessels, 2019] Hessels, E. (2019). Reliability of writing evaluation methods in the efl classroom. Master's thesis. (Cited in page 111.)

[Hitchcock, 2017] Hitchcock, D. (2017). Critical thinking as an educational ideal. In *On Reasoning and Argument*, pages 477–497. Springer. (Cited in pages 22, 28 and 30.)

[Hodges and Williams, 2019] Hodges, N. J. and Williams, A. M. (2019). *Skill acquisition in sport: Research, theory and practice*. Routledge. (Cited in page 33.)

[Hogsette, 2019] Hogsette, D. S. (2019). *Writing that makes sense: Critical thinking in college composition*. Wipf and Stock Publishers. (Cited in page 33.)

[Hoppe et al., 2017] Hoppe, M., Westerberg, M., and Leffler, E. (2017). Educational approaches to entrepreneurship in higher education. *Education+ Training*. (Not cited.)

[Horn et al., 2017] Horn, I. S., Garner, B., Kane, B. D., and Brasel, J. (2017). A taxonomy of instructional learning opportunities in teachers' workgroup conversations. *Journal of Teacher Education*, 68(1):41–54. (Cited in pages 105 and 106.)

[Huang et al., 2017] Huang, M.-Y., Tu, H.-Y., and Wang, W. (2017). Effects of cooperative learning and concept mapping intervention on critical thinking and basketball skills in elementary school. *Thinking Skills and Creativity*, 23:207–216. (Cited in page 19.)

[Hudson and Walker, 2017] Hudson, A. K. and Walker, M. (2017). Supporting effective guided reading instruction for all students. *Texas Association for Literacy Education Yearbook*, page 67. (Cited in page 45.)

[Hughes, 2017] Hughes, E. S. (2017). *Critical and Higher Order Thinking Skills Required for Admission to Physical Therapist Education Programs: A Modified E-Delphi Study*. The University of Memphis. (Cited in pages 26 and 27.)

[Hyland, 2019] Hyland, K. (2019). *Second language writing*. Cambridge university press. (Cited in pages 8 and 50.)

[Irwan et al., 2019] Irwan, I., Maridi, M., and Dwiastuti, S. (2019). Developing guided inquiry-based ecosystem module to improve students' critical thinking skills. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 5(1):51–60. (Cited in page 72.)

[Johnson and Johnson, 2016] Johnson, D. W. and Johnson, R. (2016). Cooperative learning and teaching citizenship in democracies. *International journal of educational research*, 76:162–177. (Cited in pages 66 and 67.)

[Kavanoz and Akbas, 2017] Kavanoz, S. and Akbas, S. (2017). Efl teachers' conceptualizations and instructional practices of critical thinking. *International Online Journal of Education and Teaching*, 4(4):418–433. (Cited in page 70.)

[Keen, 2018] Keen, J. (2018). *Teaching English: a linguistic approach*. Routledge. (Cited in page 7.)

[Khatib and Mirzaii, 2016] Khatib, M. and Mirzaii, M. (2016). Developing an analytic scale for scoring efl descriptive writing. *Journal of English Language Teaching and Learning*, 8(17):49–73. (Cited in page 9.)

[Kiely, 2017] Kiely, M. T. (2017). Enhancing instruction for students with academic needs: Strategies for writing skills. *Computer based technology for special and multicultural education: Enhancing 21st century learning*, pages 93–114. (Not cited.)

[Kirmizi, 2017] Kirmizi, F. S. (2017). The effect of creative reading and creative writing activities on creative reading achievement. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 4(1):406–412. (Not cited.)

[Kitsantas et al., 2019] Kitsantas, A., Baylor, A. L., and Hiller, S. E. (2019). Intelligent technologies to optimize performance: Augmenting cognitive capacity and supporting self regulation of critical thinking skills in decision making. *Cognitive Systems Research*, 58:387–397. (Cited in pages 18 and 29.)

[Kiyosawa et al., 2019] Kiyosawa, K., Kobayashi, Y., Koizumi, Y., Yoshimuta, S., and Iwata, Y. (2019). Developing critical thinking skills and attitude: An analysis of a reading course in a university english program. *ICU Language Research Bulletin*, (33):10–21. (Cited in page 16.)

[Kobayashi, 2019] Kobayashi, K. (2019). Developing critical thinking skills in an efl classroom through topic based discussions. *Bulletin of Aichi Shukutoku University*, (3):23–35. (Cited in page 74.)

[Kozulin and Kazaz, 2017] Kozulin, A. and Kazaz, S. (2017). Developing the concept of perimeter and area in students with learning disabilities (ld). *European Journal of Psychology of Education*, 32(3):353–366. (Cited in page 25.)

[Kumar and Refaei, 2017] Kumar, R. and Refaei, B. (2017). Problem-based learning pedagogy fosters students' critical thinking about writing. *Interdisciplinary Journal of Problem-Based Learning*, 11(2). (Not cited.)

[Limpo, 2018] Limpo, T. (2018). Development of a short measure of writing apprehension: validity evidence and association with writing frequency, process, and performance. *Learning and Instruction*, 58:115–125. (Not cited.)

[Loes and Pascarella, 2017] Loes, C. N. and Pascarella, E. T. (2017). Collaborative learning and critical thinking: Testing the link. *The Journal of Higher Education*, 88(5):726–753. (Cited in pages 65 and 66.)

[Marzano and Toth, 2013] Marzano, R. J. and Toth, M. D. (2013). *Teacher evaluation that makes a difference: A new model for teacher growth and student achievement*. ASCD. (Cited in pages 105 and 106.)

[Mastrothanais et al., 2018] Mastrothanais, K., Kalianou, M., Katsifi, S., and Zouganali, A. (2018). The use of metacognitive knowledge and regulation strategies of students with and without special learning difficulties. *International Journal of Special Education*, 33(1):184–200. (Cited in page 19.)

[Miller, 2016] Miller, P. (2016). *Cultures of educational leadership: Global and intercultural perspectives*. Springer. (Cited in page 18.)

[Mills and Gay, 2019] Mills, G. E. and Gay, L. R. (2019). *Educational research: Competencies for analysis and applications*. ERIC. (Cited in pages 90 and 92.)

[Moskal and Leydens, 2000] Moskal, B. M. and Leydens, J. A. (2000). Scoring rubric development: Validity and reliability. *Practical Assessment, Research, and Evaluation*, 7(1):10. (Cited in pages 112 and 114.)

[Murray, 2018] Murray, C. (2018). Exploration of the benefits of process approaches to writing instruction to high school english learners. *OSAKA JALT*, page 75. (Cited in pages 58 and 59.)

[Nancy and Gettig, 2019] Nancy, J. and Gettig, F. (2019). Writing and thinking. *American Journal of Pharmaceutical Education*, 83(9). (Cited in page 2.)

[Nappi, 2017] Nappi, J. S. (2017). The importance of questioning in developing critical thinking skills. *Delta Kappa Gamma Bulletin*, 84(1):30. (Cited in page 35.)

[Nicolaides, 2017] Nicolaides, A. (2017). Bertrand russell: cognitivism, non-cognitivism and ethical critical thinking. *Phronimon*, 18(1):1–14. (Cited in page 18.)

[Noddings and Brooks, 2017] Noddings, N. and Brooks, L. (2017). *Teaching controversial issues: The case for critical thinking and moral commitment in the classroom*. Teachers College Press. (Cited in page 65.)

[Nordin et al., 2017] Nordin, S. M. et al. (2017). The best of two approaches: Process genre based approach to teaching writing. *The English Teacher*, page 11. (Cited in page 8.)

[Nur Miftahul and Zubaidah, 2017] Nur Miftahul, F. and Zubaidah, S. (2017). Improving junior high schools' critical thinking skills based on test three different models of learning. *International Journal of Instruction*, 10(1):101–116. (Cited in page 1.)

[Okuda and Anderson, 2018] Okuda, T. and Anderson, T. (2018). Second language graduate students' experiences at the writing center: A language socialization perspective. *Tesol Quarterly*, 52(2):391–413. (Cited in page 62.)

[Oliveri et al., 2017] Oliveri, M. E., Lawless, R., and Molloy, H. (2017). A literature review on collaborative problem solving for college and workforce readiness. *ETS Research Report Series*, 2017(1):1–27. (Cited in page 38.)

[Ormston et al., 2014] Ormston, R., Spencer, L., Barnard, M., and Snape, D. (2014). The foundations of qualitative research. *Qualitative research practice: A guide for social science students and researchers*, 2:52–55. (Not cited.)

[Oxman, 2017] Oxman, R. (2017). Thinking difference: Theories and models of parametric design thinking. *Design studies*, 52:4–39. (Cited in page 35.)

[Papadopoulos and Griva, 2017] Papadopoulos, I. and Griva, E. (2017). Promoting critical literacy in the efl context: Implementing a project to young learners. *European Journal of Language and Literature*, 3(1):107–120. (Cited in page 68.)

[Parinaz et al., 2017] Parinaz, A., Moghaddam, S. A. H., Nateghi, F., and Faghihi, A. (2017). Investigating changing in social studies textbooks of public review (basic

fourth and fifth) based on the emphasis on critical thinking skills facione in the last three decades. *International Education Studies*, 10(3):108–115. (Not cited.)

[Pathak and Intratat, 2016] Pathak, A. and Intratat, C. (2016). Use of semi-structured interviews to investigate teacher perceptions of student collaboration. *Malaysian Journal of ELT Research*, 8(1):10. (Cited in page 96.)

[Paul and Elder, 2019] Paul, R. and Elder, L. (2019). *The miniature guide to critical thinking concepts and tools*. Rowman and Littlefield. (Cited in pages 19, 27, 34, 40, 50, 51 and 64.)

[Pineda, 2004] Pineda, C. B. (2004). Critical thinking in the efl classroom: The search for a pedagogical alternative to improve english learning. *Ikala, revista de lenguaje y cultura*, 9(15):45–80. (Cited in page 2.)

[Pratt, 2017] Pratt, D. E. (2017). A narrative case study examining the influences of peer-led team learning on student critical thinking skill acquisition and deeper process content knowledge in a midsize texas university humanities and social sciences program. (Cited in page 32.)

[Putri, 2018] Putri, R. O. (2018). Investigating the link between critical thinking skill and argumentative writing skill. *Edukasi: Jurnal Pendidikan dan Pengajaran*, 5(2):144–153. (Cited in page 2.)

[Raju and Joshith, 2018] Raju, N. and Joshith, V. (2018). Krashen's theory of second language acquisition: A practical approach for english language classrooms. *International Journal of Innovative Knowledge Concepts*, 6:12. (Cited in page 56.)

[Ramirez, 2017] Ramirez, T. V. (2017). On pedagogy of personality assessment: Application of bloom's taxonomy of educational objectives. *Journal of personality assessment*, 99(2):146–152. (Cited in page 43.)

[Randolph et al., 2018] Randolph, J. et al. (2018). A guide to writing the dissertation literature review. *Anatolia: Turizm Arastirmalari Dergisi*, 29(2):251–264. (Not cited.)

[Rietdijk and van Weijen, 2018] Rietdijk, S. and van Weijen (2018). Teaching writing in primary education: Classroom practice, time, teachers' beliefs and skills. *Journal of Educational Psychology*, 110(5):640. (Not cited.)

[Rutherford, 2019] Rutherford, A. (2019). *Elements of Critical Thinking: A Fundamental Guide to Effective Decision Making, Deep Analysis, Intelligent Reasoning, and Independent Thinking*. PublishDrive. (Cited in page 34.)

[Safonova, 2018] Safonova, V. V. (2018). Creative writing as part and parcel of developing communicative and intellectual fl learners' powers. *European Journal of Social Science Education and Research*, 5(1):130–141. (Not cited.)

[Said, 2018] Said, S. E. (2018). *Pedagogical Best Practices in Higher Education National Centers of Academic Excellence/Cyber Defense Centers of Academic Excellence in Cyber Defense*. PhD thesis, Union University. (Cited in page 29.)

[Sandhya and Al-Mahrooqi, 2015] Sandhya, M. R. and Al-Mahrooqi, R. (2015). Can thinking be taught? linking critical thinking and writing in an efl context. *RELC journal*, 46(1):23–36. (Cited in pages 2 and 69.)

[Schunn et al., 2016] Schunn, C., Godley, A., and DeMartino, S. (2016). The reliability and validity of peer review of writing in high school ap english classes. *Journal of Adolescent and Adult Literacy*, 60(1):13–23. (Cited in page 111.)

[Serrano et al., 2018] Serrano, M. M., O'Brien, M., Roberts, K., and Whyte, D. (2018). Critical pedagogy and assessment in higher education: The ideal of 'authenticity'in learning. *Active Learning in Higher Education*, 19(1):9–21. (Cited in page 34.)

[Sheehan et al., 2018] Sheehan, N. T., Gujarathi, M. R., Jones, J. C., and Phillips, F. (2018). Using design thinking to write and publish novel teaching cases: Tips from experienced case authors. *Journal of Management Education*, 42(1):135–160. (Cited in page 55.)

[Shiraev and Levy, 2016] Shiraev, E. B. and Levy, D. A. (2016). *Cross-cultural psychology: Critical thinking and contemporary applications*. Routledge. (Cited in page 26.)

[Sieberer-Nagler, 2016] Sieberer-Nagler, K. (2016). Effective classroom-management and positive teaching. *English Language Teaching*, 9(1):163–172. (Cited in page 53.)

[Smith et al., 2017] Smith, A. K., Black, S., and Hooper, L. M. (2017). Metacognitive knowledge, skills, and awareness: A possible solution to enhancing academic achievement in african american adolescents. *Urban Education*, pages 200–215. (Cited in page 10.)

[Staynchi, 2017] Staynchi, J. (2017). Higher order thinking through bloom's taxonomy. *Kwansei Gakuin University Humanities Review*, 22:117–124. (Cited in page 44.)

[Stedman and Brown, 2020] Stedman, N. and Brown, A. (2020). Critical thinking perspectives of undergraduate students. *Advancements in Agricultural Development*, 1(1):14–24. (Cited in page 76.)

[Stupple et al., 2017] Stupple, E. J., Maratos, F. A., Elander, J., Hunt, T. E., Cheung, K. Y., and Aubeeluck, A. V. (2017). Development of the critical thinking toolkit (critt): A measure of student attitudes and beliefs about critical thinking. *Thinking Skills and Creativity*, 23:91–100. (Cited in page 39.)

[Taghinezhad and Riasati, 2018] Taghinezhad, A. and Riasati, M. J. (2018). The impact of teaching critical thinking on iranian students' writing performance and their critical thinking dispositions. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 9:64–80. (Cited in page 25.)

[Taguchi, 2018] Taguchi, N. (2018). Advanced second language pragmatic competence. *The handbook of advanced proficiency in second language acquisition*, pages 505–526. (Not cited.)

[Tan et al., 2019] Tan, F. D., Whipp, P. R., Gagné, M., and Van Quaquebeke, N. (2019). Students' perception of teachers' two way feedback interactions that impact learning. *Social Psychology of Education*, 22(1):169–187. (Cited in page 45.)

[Thomas, 2019] Thomas, K. S. (2019). Critical thinking: Centering teachers' knowledge and understanding. In *Handbook of Research on Critical Thinking and Teacher Education Pedagogy*, pages 255–276. IGI Global. (Cited in page 28.)

[Tiruneh et al., 2017] Tiruneh, D. T., De Cock, M., Weldeslassie, A. G., Elen, J., and Janssen, R. (2017). Measuring critical thinking in physics: Development and validation of a critical thinking test in electricity and magnetism. *International Journal of Science and Mathematics Education*, 15(4):663–682. (Cited in page 34.)

[Trosset et al., 2019] Trosset, C., Evertz, K., and Fitzpatrick, R. (2019). Learning from writing center assessment: Regular use can mitigate students' challenges. *Learning Assistance Review (TLAR)*, 24(2). (Cited in page 88.)

[Tung and Chang, 2009] Tung, C.-A. and Chang, S.-Y. (2009). Developing critical thinking through literature reading. *Feng Chia Journal of Humanities and Social Sciences*, 19(3):287–317. (Cited in page 2.)

[Ulger, 2018] Ulger, K. (2018). The effect of problem-based learning on the creative thinking and critical thinking disposition of students in visual arts education. *Interdisciplinary Journal of Problem-Based Learning*, 12(1). (Cited in page 34.)

[Urgo et al., 2019] Urgo, K., Arguello, J., and Capra, R. (2019). Anderson and krathwohl's two dimensional taxonomy applied to task creation and learning assessment. In *Proceedings of the 2019 ACM SIGIR International Conference on Theory of Information Retrieval*, pages 117–124. (Cited in page 47.)

[Valero Lafuente, 2018] Valero Lafuente, Z. (2018). Introducing literature in the english as a foreign language (efl) classroom: an approach to culture, language and personal growth through the dystopian novel" brave new world"(1932). (Cited in page 36.)

[Wechsler et al., 2018] Wechsler, S. M., Saiz, C., Rivas, S. F., Vendramini, C. M. M., Almeida, L. S., Mundim, M. C., and Franco, A. (2018). Creative and critical thinking: Independent or overlapping components? *Thinking Skills and Creativity*, 27:114–122. (Cited in pages 20 and 65.)

[Williams and Rebuschat, 2016] Williams, J. and Rebuschat, P. (2016). *Implicit learning and second language acquisition*. Routledge. (Not cited.)

[Wilson, 2016] Wilson, L. O. (2016). Anderson and krathwohl bloom's taxonomy revised: Understanding the new version of bloom's taxonomy. *Articel course handbook diakses pada hari selasa tanggal*, 5. (Cited in pages 46, 47, 48, 49 and 106.)

[Winstone et al., 2017] Winstone, N. E., Nash, R. A., Parker, M., and Rowntree, J. (2017). Supporting learners' agentic engagement with feedback: A systematic review and a taxonomy of recipience processes. *Educational Psychologist*, 52(1):17–37. (Cited in page 8.)

[Xiao and Watson, 2019] Xiao, Y. and Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1):93–112. (Not cited.)

[Yaakub et al., 2018] Yaakub, N., Rashid, R. b. A., and Muhammad, N. A. B. (2018). Developing critical thinking skills through i-think maps: An action research. *International Journal of English Linguistics*, 8(7):42–49. (Cited in page 71.)

[Yan and Brown, 2017] Yan, Z. and Brown, G. T. (2017). A cyclical self-assessment process: towards a model of how students engage in self assessment. *Assessment and Evaluation in Higher Education*, 42(8):1247–1262. (Cited in pages 10 and 104.)

[Yuliawati et al., 2016] Yuliawati, Y., Mahmud, M., and Muliati, M. (2016). Teacher's questioning and students' critical thinking in efl classroom interaction. *ELT WORLDWIDE*, 3(2):231–247. (Cited in page 26.)

[Zhukova, 2017] Zhukova, O. (2017). Novice teachers beliefs about problem-based learning approach, and teaching practices. In *CBU International Conference Proceedings*, volume 5, pages 901–909. (Cited in page 34.)

[Zivkovil, 2016] Zivkovil (2016). A model of critical thinking as an important attribute for success in the 21st century. *Procedia-Social and Behavioral Sciences*, 232:102–108. (Cited in page 37.)

[Zou, 2019] Zou, M. (2019). *Understanding the Integration of Critical Thinking in EFL Writing Instruction: A Naturalistic Inquiry*. PhD thesis, The Chinese University of Hong Kong (Hong Kong). (Cited in page 73.)

[Zulkifli and Hashim, 2020] Zulkifli, H. and Hashim, R. (2020). Philosophy for children (p4c) in improving critical thinking in a secondary moral education class. *International Journal of Learning, Teaching and Educational Research*, 19(2). (Cited in page 76.)

Appendix A

The CLAR Rubric

Table A.1 – The CLAR Rubric (1)

Skills	Sub-skills	Emerging 1 2 Developing 3 4 Mastering 5 6 7		
Remember	1-Define a Problem	Unclear and innaccurate problem	Fairly clear and accurate problem	A clear and accurate articulation of the problem
	2. Distinguish the main theme from details	No distinction of the main theme from the details.	A vague distinction of the main theme from the details.	Clearly distinguishes the main theme from the illustrtions and details.
Understand	1. Paraphrasing using your own words	All the sentences are plagiarized with a few changes in structures .	fair use of own words to avoid plagiarism and retain of the original meaning .	An accurate use of own words to express others' ideas without changing the meaning and without plagiarism
	2.Identify a researcher's objective or opinion	misinterpretation of others' views,objectives and ideas	Partially good interpretation of others' views,objectives and ideas	A good and precise interpretation of the research objective and author's opinion.

Table A.2 – The CLAR Rubric (2)

Skills	Sub-skills	Emerging 1 2	Developing 3 4	Mastering 5 6 7
Understand	3. Explain different meanings	Not able to clarify difficult ideas, concepts, arguments, facts nor convey the implicit meanings	A vague and general explanation of main concepts, and arguments and meanings are not clear as well.	A good and clear explanation and clarification of difficult concepts with many illustrations
Apply	1. Cite literature and use references	Wrong citation and ignorance of citation styles	Some weaknesses in citation	A successful and good use of one citation style APA, MLA...
	2. Use appropriate register and formal language	Absence of academic argumentative register	Some lacks in formal register	A very consistent academic register
	3.Use correct grammar,spelling and punctuation	Many grammatical errors, spelling mistakes...	Some errors and punctuation problems	A correct well-structured language reflects a good mastery of writing skills

Table A.3 – The CLAR Rubric (3)

Skills	Sub-skills	Emerging 1 2	Developing 3 4	Mastering 5 6 7
Analyze	1. Classifying information, arguments, knowledge, or perspectives	Failure to classify the data into categories: definitions,theories,methodology...	inappropriate classification and categorazition of information	A clearly good classification of data into definitions, theories, methodology, examples, reasons, main results
	2. Dissect research problem into questions for critical evaluation	Not able to find the problem and if so, no attempt to dissect it.	No analysis of the parts of the problematic or the questions.	An effective break down of the problematic into questions and hypotheses for detailed analysis and critical evaluation
	3. Cohesive and Coherent writing style	Very weak organisation of arguments and lack of logical order in presentation	An attempt to correlate ideas, and paragraphs using some linking words	A clear sequencing of sentences from general to specific or vise versa or from the most important to the less important fact across the text, and by relating paragraphs to each others and to the main objective of the research

Table A.4 – The CLAR Rubric (4)

Skills	Sub-skills	Emerging 1 2	Developing 3 4	Mastering 5 6 7
Evaluate	1. Judge the significance and sufficiency of concepts , facts and arguments	Arguments are insignificant and not sufficient	A mixture of arguments is included relevant and irrelevant.	sufficient concepts are given with deep and long illustrations
	2. Assess credibility of sources	Poor and unreliable resources	Some sources are not credible and others are credible but not complete	Accurate choices of trustworthy and reliable sources
	3.Judge the summary of the previous literature	Poor summary lack of main information : Methodology, main results...	Incomplete summary	An effective summary contains all parts, all the previous works are related to the purpose of the research.

Table A.5 – The CLAR Rubric (5)

Skills	Sub-skills	Emerging 1 2 3 4 Developing 5 6 Mastering 7		
Create	1. Draw conclusions	The conclusion is not proved by data /or it introduces a new concept	Draw a conclusion that lacks arguments or is not supported by the main arguments	An effective conclusion supported by data ,it summarizes the research or presents the authors' views or solution to the problem
	2. Make new insights from other perspectives	Lack of /or poor generating other concepts and uses	Some formulation of new ideas or insights from different sources	Formulating and generating new ideas or insights
	3. Present and justify author's view	No clear view on the problem or the	Present a view but poorly supported	A clear explanation of author's view on the issue with arguments
Add Comments:				

Appendix B

Teachers' Interview

B.1 Pre-test Teachers' Interview

1. What challenges do your students usually face in LRs writing?

2. Why do you think they are struggling with LRs writing activity

    - It's hard and inappropriate for their level
    - they lack writing skills
    - they lack practice
    - they do not think critically

3. How reflective are your students about their writings?

4. Which solutions or activities you can suggest for them ?

B.2 Post-test Teachers' Interview

1. What do you think/What are your views of the

   - conventional assessment (teachers' assessment)
   - self-assessment
   - peer-assessment

2. Which activities you consider effective in developing CT skills?

3. What is your perception of using CLAR in fostering CT?

4. How Likely would you use

   - self-assessment
   - peer-assessment
   - CLAR

   as assessment or feedback methods?

5. Besides self, peer-assessment and CLAR ,what other assessment methods can be used to foster students' CT?

Appendix C

Students' Interview

C.1 Pre-test Students' Interview

1. What is a LR ?
2. What is the purpose of writing a LR ?
3. What challenges do you face/encounter when you write your literature review? Why ?
4. Are you satisfied with your teachers' assessment method?
5. Would you prefer to self-assess your LRs? Why?
6. Would you prefer your peers to assess your LRs? Why?

C.2 Posttest Students' Interview

1. Which assessment methods did you find effective in developing your critical thinking skills in writing LR? Why?

2. How effective did you find self-assessment as a means of developing your CT skills? Why?

3. How effective did you find peer assessment as a means of developing your CT skills? Why?

4. How effective did you find The CLAR in reflecting of LRs Writing?

5. What is your perception of using CLAR as a means of fostering your CT skills?

Appendix D

Questionnaire Before Piloting

Section A:

- Q1: Gender (Male/ Female)
- Q2: How old are you? (18-25/ 25-35 / 35-45)
- Q3: Why did you choose to study English?
    - Professional Career
    - Language of technology
    - Enables you to communicate with different people from different cultures
    - Other
- Q4: How do you consider your level in English? (Good/ Average/ Weak)
- Q5: Do you like Writing in English? (Yes/No)

Section B:

- Q5: Have you written any literature review before? (Yes/No)
- Q6:Did you enjoy writing LRs? (Yes/No) Why?

- Q7: Which process/steps you usually follow to write a literature review?
- Q8:Which critical process/steps your teacher asks you to follow to write a good literature review?
    - Determine your main purpose
    - Note important bibliographic detail
    - Conduct your extensive database research
    - Read and analyse all sources carefully
- Q9: What are the difficulties that you face when you are writing literature reviews?
    - Lack of clear sources.
    - Ignore why and how to write citations.
    - Irrelevant content to the literature reviews.
    - You cannot find anything written on your topic.
    - Ignore how to summerize the previous studies.
- Q10: How often does your teacher encourage you to write a LR? (Many times/ Sometimes/ never/ rarely)
- Q11: Which way you consider easier to write a literature review?
    - Re ad then analyze, interpret and evaluate the source.
    - Synthesise sources to show themes, views, problems, or gaps.

- Just read the previous knowledge and report all what you found
- Show the state of current practice in relation to a research question or hypothesis.

Section C:

- Q12:What does CT mean to you ?
  - Solve a problem
  - Draw a conclusion from a set of information
  - Differentiate between useful and useless details
  - Interpret graphs and figures
  - Make write decisions
  - Being an open-minded and updated person
- Q13: How important is critical thinking to you? (Not Important at all/ Slightly Important/ Important/ Very Important)
- Q14: How would you rate your critical thinking ability? (Poor/ Fair/ Good/ Very Good)
- Q15: How do you see yourself
  - A deep thinker :A person whose thoughts are profound; an intellectual.
  - An acccurate thinker :A person who does not allow anyone else to do their thinking for them; will gather information and listen to other people's opinions, but makes the final decision.

- Clear thinker :A person who is not mentally confused; able to think clearly and act intelligently
- An openminded thinker :A person who is not traditional but open minded and willing to accept other people's behaviour and beliefs

- Q16:Which activities your teachers use, you think they develop CT Skills?
  - Writing assignments
  - Real World Activities
  - Reading assignments
  - Debates
  - Questions and enquiries
  - Problem solving (Problem and project-based learning)
  - Oral Presentations
  - Oral and written reflection and argumentation
  - Collaborative and cooperative work
  - Questioning
  - Self-assessment/ Evaluation
  - Research project
  - Guessing
  - Peer-review

- Q17: Which activity you prefer to practice in order to develop your CT Skills? Why?

Section D:

- Q18:How do you consider assessment in your class? Why? Ineffective Effective Fair Unfair
- Q19:Did your teacher involve you in the assessment process? (Never/ Rarely/ Very Often/ Sometimes/ always)
- Q20:Do you think that assessment involves: (Disagree/ Agree/ Strongly Agree)
  - Work collaboratively and collegially with peers
  - Objectively critique a peer's work and provide constructive criticism
  - Understand assessment and grading standards
  - Communicate opinions orally and in writing
  - Redraft and proofread your work
  - Assess your own work in an objective manner
  - Engage in a reflective learning process
- Q21: Which one do you think you benefit more from, when assessing or when being assessed?
  - when assessing
  - when being assessed
  - Q22:Is it helpful for you when your peers assess and review your work and give feedback? (Yes/No)
- Q23: What did you learn when assessing your peer's work?

- Understanding the academic standards of the LRs
- Understanding assessment criteria and how they are applied to students? work
- Criticizing, evaluating and applying other generic skills during the process
- Developing my ability to make judgments and justify a point of view
- More awareness of my weakness and strength in writing
- Developing my ability to give constructive feedback to peers
- To become familiar with autonomous learning and monitoring my own progress rather than rely on others to do it
- Others

- Q24:Self-assessment involves : (Disagree/ Neither Disagree/ Nor Agree/ Agree/ Strongly Agree)
  - Enhancing learning, make it deep and continous process
  - Making students feel that they have some control over their own evaluation
  - Developing learner autonomy and cognitive abilities
  - Promoting better understanding and increased quality and thoughtfulness on assignments
  - Reducing student anxiety and solving student' teacher conflict by facilitating the grading process
- Q25: Did you enjoy self-assessment activity? Why?

- It encourages student involvement and responsibility.
- It encourages students to reflect on their role
- It allows you to see and reflect on your contributions
- It develops your judgment skills
- It helps you to become more self-aware and self-critical, the fact that will improve your performance in any course.

Section E:

- Q26: How helpful do you think the rubric is in the assessment task?
- Q27:How helpful is the rubric for diagnosing your stage/step in each of the different skills in LRs writing?
- Q28:How helpful is the collaborative work in the development of Critical thinking skills?
- Q29:How helpful is self-assessment and metacognition in developing critical thinking skills?
- Q30 :Using CLAR enables you to : (Strongly agree/ Agree/ Disagree)
  - Better assess peer's LRs
  - Strengthened (Build up) ability to write a LR
  - Draw (Make) reasonable synthesis from information
  - Improve (Better) ability to see relationships (connections) among several aspects of a study

- Open your mind to methodology designs,approaches and tools
- Better assess my written LR
- Become more familiar with LRs? components ,types and samples

- Q31: How would you RATE your ABILITY to: (Able/ Not able)
  - Identify the significance in ideas
  - Distinguish (separate/determine) between main ideas and sub ideas
  - Describe the problem
  - Organise ideas logically
  - Rewrite other people's ideas using your own words
  - Understand graphs or charts
  - Compare and contrast ideas
  - Understand your own or someone else's ideas
  - Identify unstated /Indirect/Implicit stated assumptions interpretations
  - Evaluate the credibility /reliability/correctness of a source of information
  - Judge if given evidence supports a claim /belief
  - Determine /decide if an argument is sound/acceptable
  - Identify gaps in your knowledge and seek/look for information on it
  - Consider various options/choices to solve a problem
  - Indent/accept someone else's position/view
  - Predict future events based on evidence /proof

- Consider various hypotheses/choices to solve a problematic
- Clearly present your argument
- Defend /hold/maintain your position /stand
- Justify your conclusions
- Recognise your personal bias
- Synthesis of other people's ideas before presenting your own

- Q32:In addition to the self-reflection, collaborative work and CLAR Rubric what activities will develop your critical thinking ability in LRs writing?

Appendix E

Questionnaire After Piloting

E.1 Pre-test Questionnaire

General Background Information

- Q1: Gender (Male/ Female)
- Q2: How old are you? (18-25/ 25-35 / 35-45)
- Q3: Why did you choose to study English?
    - Professional Career
    - Language of technology
    - Enables you to communicate with different people from different cultures
    - Other
- Q4: Rate your writing ability in English?

Writing LRs

- Q4: Have you written literature review before? Yes/No Why?
- Q5: Did you enjoy writing LRs? Yes/No Why?

- Q6: Which process/steps you usually follow to write a literature review?
- Q7: What difficulties do you face when you are writing literature reviews?
  - Lack of clear sources.
  - Ignore why and how to write citations.
  - You cannot understand and analyze the previous studies
  - You cannot find anything written on your topic.
  - Ignore how to summarize the previous studies.
- Q8: How often does your teacher encourage you to write a LR?

Critical Thinking Skills

- Q9: What does CT mean to you?
  - Solve a problem
  - Being able to criticize others? works, behaviors and opinions
  - Draw a conclusion from a set of information
  - Differentiate between useful and useless details
  - Interpret graphs and figures
  - Make write decisions
  - Being an open-minded and updated person
- Q10: How important is critical thinking to you?
- Q11: How would you rate your critical thinking ability?

- Q12: How do you see yourself?
  - A deep thinker: A person whose thoughts are profound; an intellectual.
  - An accurate thinker: A person who does not allow anyone else to do their thinking for them; will gather information and listen to other people?s opinions, but makes the final decision.
  - Clear thinker :A person who is not mentally confused; able to think clearly and act intelligently
  - An open-minded thinker :A person who is not traditional but open minded and willing to accept other people's behavior and beliefs

Self and Peer Assessment

- Q13: How effective/ important is assessment process in your class?
- Q14: How often did your teacher involve you in the assessment of writing?
- Q15: What did you learn when assessing your peers? work?
  - Understanding the academic standards of the LRs.
  - Understanding assessment criteria and how they are applied to students? work.
  - Criticizing, evaluating and applying other generic skills during the process.
  - Developing my ability to make judgments and justify a point of view.
  - More awareness of my weakness and strength in writing.
  - Developing my ability to give constructive feedback to peers.

- To become familiar with autonomous learning and monitoring my own progress rather than rely on others to do it.

- Others...

- Q16: What do you learn when you self-assess your work?

  - Enhance learning, make it deep and continuous process.

  - Make me feel that I have control over my own evaluation.

  - Develop my cognitive abilities.

  - Promote better understanding and increased quality and thoughtfulness on assignments.

  - Reducing student anxiety.

  - Solve student?teacher conflict by facilitating the grading process.

- Q17: How effective is self-assessment in developing CT skills?

  - It encourages student involvement and responsibility.

  - It encourages students to reflect on their role.

  - It allows you to see and reflect on your contributions.

  - It develops your judgment skills.

  - It helps you to become more self-aware and self-critical, the fact that will improve your performance in any course.

The CLAR

- Q18: How effective do you think the rubric is in the assessment task?

- Q19: How effective is the rubric for reflecting each stage/step in LRs writing?
- Q20: How effective is the CLAR Rubric in the development of Critical thinking skills?
- Q21: Using CLAR enables you to :
  - Better assess peer?s LRs
  - Strengthened (Build up) ability to write a LR.
  - Draw (Make) reasonable synthesis from information.
  - Improve (Better) ability to see relationships (connections) among several aspects of a study.
  - Open your mind to methodology designs, approaches and tools.
  - Better assess my written LR.
  - Become aware of LRs? components ,types and samples.
- Q22: How would you RATE your ABILITY to:
  - Identify the significance in ideas
  - Distinguish (separate/determine) between main ideas and sub ideas
  - Describe the problem
  - Organize ideas logically
  - Rewrite other people's ideas using your own words
  - Understand graphs and charts
  - Compare and contrast ideas

- Understand your own or someone else's ideas
- Identify unstated /Indirect/Implicit stated assumptions interpretations
- Evaluate the credibility /reliability/correctness of a source of information
- Judge if a given evidence supports a claim /belief
- Determine /decide if an argument is sound/acceptable
- Identify gaps in your knowledge and seek/look for information on it
- Consider various options/choices to solve a problem
- Indent/accept someone else's position/view
- Predict future events based on evidence /proof
- Consider various hypotheses/choices to solve a problematic
- Clearly present your argument
- Defend /hold/maintain your position /stand
- Justify your conclusions
- Recognize your personal bias
- Synthesis of other people's ideas before presenting your own.

- Q23: In addition to the self-reflection, collaborative work and CLAR Rubric what activities will develop your critical thinking ability in LRs writing?

E.2 Posttest Questionnaire

General Background Information

- Q1: Rate your writing ability in English?

Writing LRs

- Q2: Which critical steps you usually follow to write a literature review?
  - Determine your purpose
  - Note important citation details
  - Conduct your extensive data research
  - Read and understand all sources carefully
  - Analyze the results
  - Read and summarize
  - Criticize and find gaps in previous studies
  - Read the previous knowledge and report all what you find
- Q3: Why do you write LRs ?
  - To show a thorough professional grasp of the area
  - To justify my research and its importance
  - To justify my approach
  - To synthesise literature using my academic style

Critical Thinking Skills

- Q3: What does CT mean to you?
  - Solve a problem

- Being able to criticize others? works, behaviors and opinions
- Draw a conclusion from a set of information
- Differentiate between useful and useless details
- Interpret graphs and figures
- Make write decisions
- Being an open-minded and updated person

- Q4: How important is critical thinking to you?
- Q5: How would you rate your critical thinking ability?
- Q6: How do you see yourself?
  - A deep thinker: A person whose thoughts are profound; an intellectual.
  - An accurate thinker: A person who does not allow anyone else to do their thinking for them; will gather information and listen to other people?s opinions, but makes the final decision.
  - Clear thinker :A person who is not mentally confused; able to think clearly and act intelligently
  - An open-minded thinker :A person who is not traditional but open minded and willing to accept other people's behavior and beliefs
- Q7: Which activities your teachers use ,you think they develop your critical thinking skills?
  - work collaboratively and collegially with peers

- Review previous works
- Objectively critique a peer?s work and provide constructive criticism
- Understand assessment and grading standards
- Communicate opinions orally and in writing
- Redraft and proofread your work
- Assess your own work in an objective manner
- Engage in a reflective learning process

Self and Peer Assessment

- Q8: Which one is more effective form?
  - Self-assessment
  - Peer assessment
- Q9: What did you learn when assessing your peers? work?
  - Understanding the academic standards of the LRs
  - Understanding assessment criteria and how they are applied to students? work
  - Criticizing, evaluating and applying other generic skills during the process
  - Developing my ability to make judgments and justify a point of view
  - More awareness of my weakness and strength in writing
  - Developing my ability to give constructive feedback to peers

- To become familiar with autonomous learning and monitoring my own progress rather than rely on others to do it
- Others..

- Q10: What do you learn when you self-assess your work?
  - Enhance learning, make it deep and continuous process
  - Make me feel that I have control over my own evaluation
  - Develop my cognitive abilities
  - Promote better understanding and increased quality and thoughtfulness on assignments
  - Reducing student anxiety
  - Solve student?teacher conflict by facilitating the grading process

- Q11: How effective is Self-assessment in developing Critical thinking skills?
  - It encourages student involvement and responsibility.
  - It encourages students to reflect on their role
  - It allows you to see and reflect on your contributions
  - It develops your judgment skills
  - It helps you to become more self-aware and self-critical, the fact that will improve your performance in any course.

Rating the effectiveness of the CLAR

- Q12: How effective do you think the rubric is in the self and peer assessment?

- Q13: How effective is the rubric for reflecting LRs writing?
- Q14: How effective is the CLAR in Developing Critical thinking Skills?
- Q15: Using CLAR enables you to:
  - Better assess peer?s LRs
  - Strengthened (Build up) ability to write a LR
  - Draw (Make) reasonable synthesis from information
  - Improve (Better) ability to see relationships (connections) among several aspects of a study
  - Open your mind to methodology designs, approaches and tools
  - Better assess my written LR
  - Become aware of LRs? components ,types and samples
- Q16: How would you RATE your ABILITY to:
  - Identify the significance in ideas
  - Distinguish (separate/determine) between main ideas and sub ideas
  - Describe the problem
  - Organize ideas logically
  - Rewrite other people's ideas using your own words
  - Understand graphs and charts
  - Understand your own or someone else's ideas
  - Identify unstated /Indirect/Implicit stated assumptions interpretations

- Judge if a given evidence supports a claim /belief

- Identify gaps in your knowledge and seek/look for information on it

- Consider various options/choices to solve a problem

- Indent/accept someone else's position/view

- Consider various hypotheses/choices to solve a problematic

- Clearly present your argument

- Defend /hold/maintain your position /stand

- Synthesis of other people's ideas before presenting your own

Appendix F

Informed Consent Letter

Dear students,

You are invited to participate in a study on "Developing Critical Thinking Skills among Master Students while writing Literature Reviews". You were selected as possible participants, because your teachers believe you can contribute your knowledge to this research that may benefit your own learning. We hope that you learn of your experience to use critical thinking in your writings.

This study is being conducted by Boumediene Houda, a lecturer in the University of Laghouat and a PhD student in Applied Linguistics at The University of Sidi Bel Abbes University, under the supervision of Pr. Berrahal Kaid Fatiha , ENS Oran and Pr. MadhuBala Bava Harji, Multimedia University, Malaysia.

The information obtained will remain confidential and your identification will not be disclosed. All data will be processed with PSPP Software, where no identification of information will be provided or linked to your name or email by the researcher. Your participation is entirely voluntary .You are totally free to choose whether to take part in the study or not. If at any point you feel that you would like to withdraw , you can easily discontinue your participation or to skip any question by closing the questionnaire and exit from the URL.

If you decide to participate, please tick the box below indicating that you understand and you agree on the information of this consent form.

(✓) Yes, I agree to participate in this study.

Thank you ,

We appreciate your time and collaboration.

Sincerely,

Boumediene Houda

Pr.Berrahal Kaid Fatiha

Pr.MadhuBala Bava Harji

Appendix G

List of Publications

G.1 Journals

1. **Houda Boumediene**, Fatiha Kaid Berrahal,2019, Self-Assessment of Writing Skills:An Effective Method In English Classes.TRANS Internet Journal for Cultural Studies/December 2019/Volume N 25 Reviewed Journal

2. **Houda Boumediene**, Fatiha Kaid Berrahal, 2019, Moving Forward in Inclusive Education: Approaches and Opportunities for Learners with Disabilities. The Journal of Studies in Language, Culture and Society (JLSCS), Volume 2, Issue 1, PP.218-224 E-ISSN: 2676-1750 SAJE Library

3. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji, 2018, Using Portfolio Assessment to Enhance Reflective Writing in EFL Classrooms. The Literacy Information and Computer Education Journal (LICEJ), Volume 9, Issue 4, ISSN: 2040-2589

4. **Houda Boumediene**, Fatiha Kaid Berrahal.2018. "Fostering Critical Thinking among EFL Students through Web Communication Tools" .TRANS Internet Journal for Cultural Studies/July 2018/Volume N 23 Reviewed Journal ISSN

1560-182X Aufgelistet in ERIH: European Reference Index for the Humanities.

5. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji.2018. The Effect of Using Twitter on Improving EFL Students' Writing: A Case study .International Journal of Humanities and Social Science Invention (IJHSSI)/ Volume 7 Issue 05 Ver. II |May. 2018 | PP.26-32 e ISSN: 2319 7722 p ISSN: 2319-7714

6. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji.2018. Writing a Potent Literature Review: Basic Form and Structure Journal of Social Sciences/ Revue Des Sciences Sociales, Laghouat-Algeria/ Vol 7 No 29 /pp.284-289

7. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji.2016. The Effectiveness of Portfolio Assessment on EFL Students' Writing Performance: The Case of Third Year Secondary Students in Algeria . Academic Journal of Interdisciplinary Studies MCSER Publishing, Rome-Italy E-ISSN 2281-4612 ISSN 2281-3993 / Vol 5 No 3 S1/pp.119-127

G.2 International Conferences

1. **Houda Boumediene**, Fatiha Kaid Berrahal, 16-17/03/2020, The First National Conference "Methodology for TEFL: Best Practices", Teaching English as a Foreign Language Legally: Avoiding Plagiarism in Literary Analysis , ENSB Algeries, **Algeria**.

2. **Houda Boumediene**, Fatiha Kaid Berrahal, 14-15 /01/2020, The First Na-

tional Conference on Training Innovatively Foreign languages Teachers Fostering Critical Pedagogy in The Algerian School, Fostering Critical Thinking Skills Through Short Stories, ENS Laghouat, **Algeria**.

3. **Houda Boumediene**, Fatiha Kaid Berrahal, 8-9/01/2020, International Conference on Contacts de langues et identités culturelles dans les discours sociaux (politique, pédagogique, médiatique et en ligne) , Facebooking for Better Interaction in Literature Classes : A Case Study' , Chlef, **Algeria**.

4. **Houda Boumediene**, Fatiha Kaid Berrahal, 3-4/12/2019, The First National Conference on RethinkingThe Role of Higher Education in Bridging The Gap Between Pre-Teacher Training and The Real World of Teaching, Developing The Neophytes' Professional Identities From The Theoretical Expectations To The Real Practices , ENS Oran, **Algeria**.

5. **Houda Boumediene**, Fatiha Kaid Berrahal, Bouakkaz Mustapha, 12-14/09/2019, The World International Conference on the Future of Education, Teaching Literature through YouTube Videos: A Case Study , Rome, **Italy**.

6. **Houda Boumediene**, Fatiha Kaid Berrahal, 26-28/04/2019, The Fifth Eurasian Conference on Language and Social Sciences, Assessing Literature Through Portfolios: A case study, Belek, Antalya, **Turkey**.

7. **Houda Boumediene**, Fatiha Kaid Berrahal, Bouakkaz Mustapha.4-5/04/2019 The Conference "Séminaire Inter Laboratoires sur L'éducation Scientifique et Technologique, Reseau Méditerranéen de Recherche en éducation Scientifique et

Technologique, Using Google Classroom for Teaching English Literature , Patras, **Greece**.

8. **Houda Boumediene**, Fatiha Kaid Berrahal.28/01/2019 The International Study day On "L'Université algérienne et les pratiques inclusives :De la réalité aux perspectives", "Moving Forward in Inclusive Education: Approaches and Opportunities for Learners with Disabilities" Abderrahmane Mira, Bejaia University. **Algeria**.

9. **Houda Boumediene**, Fatiha Kaid Berrahal.10/2018. Second International Post-Graduate Conference On "The Line of Inquiry in Research: Challenges and Impediments", Writing a Literature Review Mostéfa Benboulaïd, Batna-2 University. **Algeria**

10. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji.06/2018. The Canada International Conference on Education (CICE), "Exploring the Effectiveness of Portfolio Assessment on Developing EFL Students' Reflective Writing" , the University of Toronto Mississauga, **Canada**.

11. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji, 03/2018, 5th International Conference on "Languages, literatures, Arts, Universities, Internet, Employability: Critical Thinking in the Internet Era, "Fostering Critical Thinking among EFL Students through Web Communication Tools" Oran 2, **Algeria**.

12. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji, Mustapha Bouakkaz, 03/2018, 12th annual International Technology, Education and Devel-

opment Conference. The Impact of Computer Mediated Communication (CMC) on EFL Learners' Academic Writing: A Case Study. Valencia, **Spain**.

13. **Houda Boumediene**, 12/2017, Writing a Powerful Literature Review.Second Study Day on Research Methodology and Supervision, Faculty of Letters and Languages, University of Laghouat, **Algeria**.

14. **Houda Boumediene**, Madhubala Bava Harji, Fatiha Kaid Berrahal, 04/2017, Using Twitter as a Pedagogical Tool in the Higher Education Class: A Case study. 4th International Symposium on Languages, Employability and Higher Education: Context(s), Benchmarking and Professional Practices, Oran 2, **Algeria**.

15. **Houda Boumediene**, Fatiha Kaid Berrahal, Madhubala Bava Harji, 12/2016, Portfolio Assessment in Developing Writing Skills. 6 International Conference on Humanities and Social Sciences. London, **UK**.

Résumé

L'un des objectifs de l'enseignement supérieur de nos jours est de former les étudiants pour avoir la pensée critique. Plusieurs efforts sont fournis par les universités et les experts d'enseignement pour le développement de la pensée critique chez les étudiants par la proposition des méthodes modernes et les intégrés dans les modules enseignés à l'université où le module " l'apprentissage de l'écrit" fait partie. Dans cette thèse notre objectif est de développer la pensée critique chez les étudiants de Master EFL afin d'écrire de façon critique leurs états de l'art. Nous avons proposé une rubrique baptiser (CLAR) afin d'aider les étudiants à améliorer leurs pensées critiques, puis nous avons adopté une approche quasi-expérimentale pour analyser les perceptions de 120 étudiants de Master EFL. Plusieurs questionnaires et interviews ont été faites avec les étudiants et les enseignants afin d'avoir une masse de données qu'on peut l'analyser. Ces données sont analysées via un outil appelé PSPP afin de trouver des résultats statistiques. Les principaux résultats obtenus jettent la lumière sur l'importance de l'apprentissage collaborative et de métacognition lors de l'écriture des états de l'art. Ces résultats nous encouragent à recommander la rubrique CLAR aux enseignants pour l'adopter comme un outil efficace pour améliorer la pensée critique chez leurs étudiants.

الملخص

إن احد اهم الاهداف التي تسعى إليها المنظومة التعليمية الجامعية هو تمكين الطلبة من اكتساب مهارة التفكير الناقد، ومن ابرز هذه الجهود هو تطوير طرق تعليمية تساهم في صقل هذه المهارة لدى الطلاب من خلال دمجها في المقررات الدراسية لا سيما في مقررات تعليمية اللغة الانجليزية. في هذه الاخيرة، بالإضافة إلى اتقان اللغة، يتوجب على الطلبة إعمال التفكير الناقد لديهم من اجل نقد ومناقشة مختلف وجهات النظر و الافكار التي يواجهونها خاصة عند كتابة تحليل للمقالات والدراسات المنشورة سابقا. حيث تعتبر القراءة الناقدة تحديا بالنسبة لطلبة اللغة الانجليزية وذلك لافتقارهم لمهارات الفهم العميق، التحليل، التلخيص و تحديد موقف تجاه وجه نظر الكاتب. للمساهمة في تخطى هذا الاشكال تم نشر عدة ابحاث ومقالات علمية من أجل ايجاد حلول تخدم العملية التعليمية واكساب الطلبة المهارات اللازمة من اجل التحلي بالتفكير الناقد والتي من بينها العمل التشاركي والتقييم البيني. هدفنا في هذه الاطروحة هو تطوير مهارة التفكير الناقد عند طلبة الماستر لغة انجليزية نظام (ل م د). لأجل ذلك اقترحنا منهجية علمية سميناها (كلار) قصد مساعدة الطلبة في تنمية مهارة التفكير الناقد لديهم عند تحليل و كتابة ملخصات للدراسات والمنشورات السابقة. وقد اعتمدنا لذلك طريقة علمية تجريبية من اجل تحليل كتابات طلبة ماستر لغة انجليزية. حيث تم توزيع مجموعة من الاستبيانات على الطلبة و اجراء عدة مقابلات مع الاساتذة والطلبة الغرض منها جمع كم من المعلومات والمعطيات التي تساهم في تقييم فاعلية المنهجية المقترحة. هذه المعطيات تم تحليلها باستعمال برنامج احصائي، والذي اسفر عن نتائج مشجعة تسمح لنا بالتوصية باعتماد منهجية كلار من أجل تنمية مهارة التفكير الناقد لدى الطلبة عند كتابة وتلخيص المنشورات والدراسات السابقة.